



# Osteopathy Illustrated

A Drugless System of Healing

BY

A. P. DAVIS, M. D., D. O.,  
OF CHICAGO, ILL.

*Graduate of the American School of Osteopathy, Kirksville, Missouri.*

"A valuable book. A complete guide to Osteopathy, well illustrated. For the Physician this work supplies all the information he requires, regarding practical Osteopathic treatment."

"SUGGESTIVE THERAPEUTICS."

Portland Institute of Osteopathy.

Portland, Me., April 3, 1899.

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Dear Doctor—I am reading your new book "Osteopathy Illustrated," and I want to express my great satisfaction to you that Osteopathy has found its best exponent in one whose education so well qualifies to bestow comparative judgment upon the various methods of curative art. This work has long been needed and cannot fail to interest and reconcile many men of profound education in antagonistic directions, and result in great benefit to them and to us, and to the public.

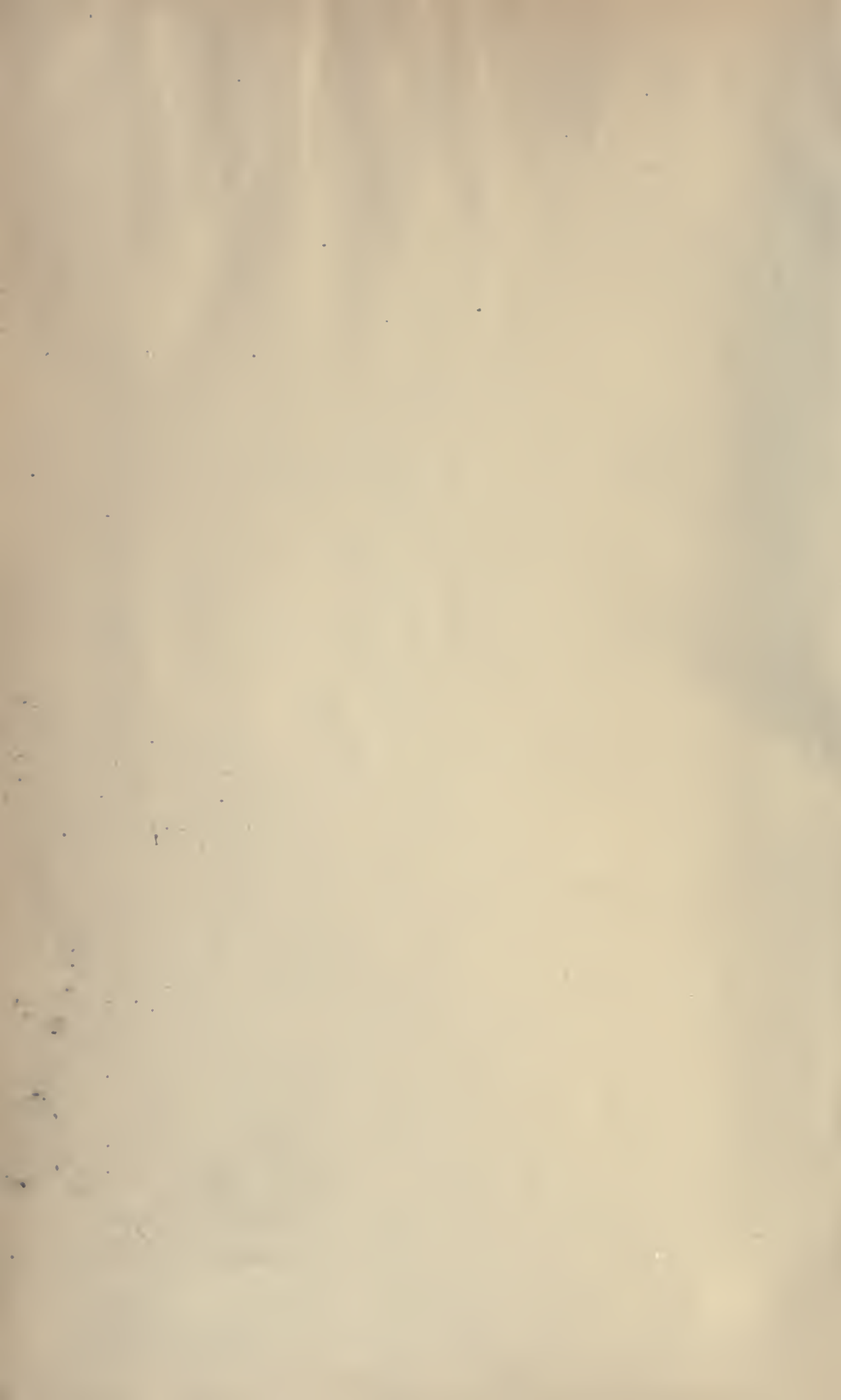
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A. P. Davis, M. D.



# OSTEOPATHY ILLUSTRATED.

A DRUGLESS SYSTEM OF HEALING.

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BY A. P. DAVIS, M. D., D. O.,  
CHICAGO, ILLINOIS.

*A Graduate of the American School of Osteopathy, Kirksville, Missouri.*

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FRED. L. ROWE,  
CINCINNATI, O.  
1899.

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## DEDICATION.

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This work is lovingly dedicated to her whose life has been linked with mine for forty-three years, and who has devoted her whole married life to assist me in ameliorating the sufferings of my fellowmen, through my many struggles to attain a knowledge of the human system, the various studies that make up the curriculum of a physician's quiver. Through all these years her constancy has not lagged, and is eminently deserving of this tribute from a loving and devoted husband.

A. P. DAVIS, AUTHOR.





## INTRODUCTION.

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It is not so much a matter of fame on my part, nor the glory of popular praise, in presenting this book to the world as an individual production, as it is to present facts. Every man has more or less pride in himself, who amounts to anything as a leader of the people or who wishes to aspire to a promulgator of a great thought, and I hope to be pardoned for any seeming presumption in presenting this volume for consideration. No subject claims audience of so large a number of people as that which concerns their personal welfare, and this being of that nature—the physical welfare of the race—we hope that the principles laid down and elucidated herein will receive careful consideration, investigation, and after trial, the approval of every one interested in health. It would be presumptuous on the part of the author to claim perfection, but we have studied the principles involved most carefully, and hope that we have consummated much that will be invaluable to the reader, and be in some measure a means of showing to the world, in a clear, concise form, the peculiar marvelousness and untold benefits of this great science, so that it may indeed be a blessing to mankind.

Our only apology for offering this volume is that the subject has not been clearly presented to the public, nor to the profession in such a manner as to be understood. The sketches sent forth through journals have scarcely indexed the meaning of, nor the science in a manner that brought out

anything more than ridicule and repugnance. This science deserves the closest scrutiny and the most searching investigation, for it is surely worthy, and will be the leading science of healing at no distant day. Our illustrations will be most interesting to the reader, in that they exhibit fully the application of the principle in detail so clearly that the science stands out to view in the clearest light possible, and at once attracts intense attention. Special pains have been taken to prepare this series of manipulations so as to be easily understood and used by all persons who carefully study the philosophy involved.

#### THOUGHTS FOR SPECIAL CONSIDERATION.

It is not the design of this work to embrace all other sciences and specialties, in order to make a show of wisdom—our sole object being to present the reasons for the application of this science, and to demonstrate its place among other means of healing. If the reader will carefully survey the premises, investigate the philosophy and note the results, a just estimate of the value of the science may be placed on it, and its proper place assigned for it.

Unobstructed circulation of fluids to and from the heart, in all parts of the body, and uniting the forces and removing the pressure, constitute the basic principles of this philosophy, and the means of promoting these ends is the only object of this book.

Disease, according to the common acceptation of the term, being only the product of impeded circulation, the desideratum in all of the manipulations, moves and adjustments shown, illustrated and explained in this work, will be conceded by the careful reader who desires to know. There is no secret, arcane abstruseness aimed at, but the practical

uses and results of the science to ameliorate suffering humanity, to set free what is and has been bound, "lo, these many years," not by word only, but through the means God has given us.

The field of surgery, gynecology, obstetrics and other departments of the healing art are not considered in detail, nor is it the object of this treatise to embrace, but the principles illustrated will be alike useful to the one as the other. When it is considered that *obstruction* causes a larger per cent. of pathological conditions than anything else, and all other things combined, the importance of the thought we have labored to impress on the mind of the reader, will be realized.

The various methods recommended and shown will be found adequate, properly applied, to afford much satisfaction, great relief, many cures thought to be beyond the power of known remedies to reach.

It is as much of an impossibility to send communications over electric wires without continuity of contact as it is to cure disease without freedom of communication of terminal end nerve footlets or freedom of the circulation of the fluids of the body; and the reason that Osteopathy shows up so *brilliantly*, is because it succeeds in taking off the pressure and permits vital fluids to move on. Co-ordination in the physical body is as essential as Faith in the spiritual body. We are not dealing in uncertainties, if we understand ourselves, nor do we need to conjecture results, for they follow with as much assurance as effect follows cause. This science, then, becomes a *necessity* in the curriculum of the *healing art*. Those who have had most experience with Osteopathy are the most ardently impressed in its favor. It wears favorably with acquaintance.

The author of this work is largely indebted to the many authors on Pathology for many ideas contained, and especial respects should be paid to Dr. Daniel E. Hughes, author of "Practice of Medicine"; Auvard, Ranney, Tyson, Buchanan, Pratt, and Kirke. It is not so much the matter of pathology that we had in view in writing this work, as to show when, where and how to apply Osteopathy with some science and intelligence. The illustrations presented in this work are sufficiently plain to be comprehended, and applied in the most of the pathological cases mentioned, successfully.

We sincerely commend this volume to those who desire to learn what Osteopathy is, and some of its capabilities and possibilities, as far as known to the present date.

That there will be improvement in its application, is not a question, but the philosophy seems to be fairly well demonstrated, even though automatically applied in many instances by persons whose attainments are meager, to say the least of them, to the astonishment of many a skilled scientist, proving its merits, though ignorantly applied.

We hope that those who become healers may study to fathom its profundity, and apply it satisfactorily, beneficially, and curatively to ameliorate suffering humanity.

Respectfully submitted,

THE AUTHOR.



## BIOGRAPHICAL SKETCH.

---

Andrew P. Davis, M.D., D.O., the subject of this sketch, was born in Allegany County, New York, on the 10th day of March, A. D. 1835, of religious parents. The paternal side was of Scotch and Welsh descent and his maternal side of Irish extraction, very nearly the original, his grandparents being quite prominent in Revolutionary times.

He derived much of his energy and tenacity from the paternal side of the house, and his finer qualities from the maternal side. A most remarkable combination of character for versatility, embracing all of the qualities of the sturdy and the most refined. His career began amidst the most adverse environments, his parents having emigrated to Western Indiana when he was only a child, four years of age, and settled in the rural district of the State (Indiana), where during the next ten years his companionship was the older and younger brothers, the hills, forest, rivulets, rocks and rills. At the age of fourteen his father died, leaving him with but little of this world's goods; and with but a meager schooling and but little knowledge of books or things. Cast out among strangers, trained by an educated guardian, sent to school and college for three years, became a teacher of district schools, married at the age of twenty-one, began life amidst difficulties but seldom realized at the present day; teaching school winters and laboring on a farm during the summer and fall months, studying nights—he formed the habit of self-reliance, and had for his books the most meager, such authors as "Samuel Thompson's Life and Practice of Medicine," "Robinson Crusoe," "Pilgrim's Progress," Davies' Arithmetic, Kirkham's Grammar, and Olney's Geography and the Sunday-school Libraries of his county-seat. The first effort

to formulate a life of study for a purpose began in the year 1861, when politics raged so hotly as to culminate in a national revolution and freedom of the slave; he was taken into custodianship, professionally, by a learned gentleman, who drilled, trained and graduated him in the Regular School of medicine, and supervised his early practice for several years; but the inconsistencies of the Regular practice were too palpable for his discerning mind, and he investigated, studied, and graduated in the Homoeopathic School eleven years after his graduation in the Regular School. He also graduated in Ophthalmology and Otology, Orificial Surgery, and studied the Junod System of Hemaspasia; then Therapeutic Sarcognomy, Mental Science, Christian Science, Hypnotism, and finally Osteopathy, mastering it and reducing it to a science, working out the most difficult problems in the healing art, consequent upon the freedom of the circulation of the fluids of the body. This science seems to be adequate to occupy his whole mind, and its marvelous, far-reaching philosophy furnishes him with sufficient depth of thought to satisfy his most ardent zeal, versatility, life. He is now one of the most thorough teachers and practitioners of this science in the country, and is perfectly adapted to unfolding the science in every respect.

Possessing that quality of brain that is calculated to search out the most minute details of the finer structures of things, he is just the man to bring out all of the relationships of this science to the art of healing and show the contrast of the various systems purporting to be remedial agencies for pathological conditions. Whatever he undertakes to investigate he thoroughly develops to perfection, making every part stand out in its true light, so that it may be known and read of all men. While it is a recognized fact that other minds claim the discovery of the principle upon which Osteopathy is founded, it is also a fact that until Dr. Davis took hold of the subject, Osteopathy was in its crudest state, meagerly known only within the narrow limits of a few counties, and had been

recognized by but few men of note; that, after he had fully investigated, adopted, and began to realize what was in it, and what a boon it might be to suffering humanity, he indorsed it, gave his influence thereto, recommended it to the leading men of the State in which its originator resided, and became the first teacher in the first Osteopathic School in the world, and aided in setting it on foot, and has not ceased to sound its praises and demonstrate its worth at all times and in all places, until now he is the head of the Quincy Osteopathic Institute (succeeded by Dr. E. L. Willis, May 1st, 1898), in the city of Quincy, Illinois, and students and patients are daily receiving the benefits of this marvelous and scientific method of curing disease without drugs—simply by the proper adjustment of the system to itself through a series of physical manipulations. The curriculum of studies essential to the comprehension of this science consists of Anatomy, Physiology and Pathology. Diseases are recognized as only the result of the interruption of the onward flow of the fluids of the body, in their various rounds to build up and tear down the various tissues in itself, and that when these tissues are normally built up and the waste material properly eliminated, health is the inevitable result. All of the deviations from a normal state may be, and are, restored by the proper adjustment through physical manipulations of the system to itself.

F. L. ROWE.

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# DESCRIPTION OF PLATES.

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## PLATES NO. I.*a* AND I.*b*.

Place the patient on the table, or bed, on the back, all the muscles limp as possible, neck bare of clothing, ties, etc. Put both hands, fingers touching at the spines of vertebrae, hands at the side of the neck, head of patient well up to the head of table; raise the neck with both hands, letting the fore-fingers pull hardest, so that the head will incline to droop somewhat, pressing the person against the top of the head of patient, and when the neck is well bent and stretched upwards, move backward from head of the patient yourself, raising the fingers next to the occiput so as to level the head, and let it down on the table. This move should be done two or more times. The object of this move is to stretch the neck muscles, stimulate the general circulation, and thereby start dormant conditions of all of the fluids in that region, arouse the vasomotor nerves, regulating the caliber of all of the blood vessels in the body; and determines normal or abnormal contour of the vertebrae themselves, the softness or rigidity of the various muscles of the neck, condition of the venous and lymphatic vessels, glands, etc.

## PLATE NO. II.

Place the *heel* of each hand on each side of the head of the patient, on the mastoid portion of it, behind the ears, putting the fingers as near together as may be; drop the fingers of one hand to the junction of the occiput and neck; now roll the head over on that hand by pressing with the heel of the other hand, pressing at the same time with the palm of the fingers against the side of the neck, inclining to pull the finger ends upward, and enforcing that move by the pressure of the palm

of the other hand, or rather the heel of the hand against the side of the head, back of the ear (as seen in the plate). Continue these moves several times, moving the fingers on the sides of the neck up and down over the muscles, catching fingers at a new point on the neck each turn of the head, with the fingers of the hand underneath the side of head and the neck. The fingers of the hand that rolls the head over on the other hand need not be pressing on the neck as the heel of said hand rolls the head over on the opposite hand, but may be lifted up therefrom in an easy, graceful curve, but drawn down when pressure is to be made on the neck of that side. The object of this move, or these moves, is to free the circulation of the blood and other fluids in all of the muscles of the neck, removing any and all rigidity, contraction of muscles, etc.

### PLATE NO. III.

Place the hand under the neck, fingers ending near mastoid process of occipital on opposite side, other hand under chin of patient; pull easily, firmly and steadily in a direct line lengthwise until you perceive that the body is moved enough to move the feet of the patient, and, holding the hands and body taut, at the same time turning the head on toward finger ends of hand on back of head, pressing moderately with finger ends, and before slackening hold turn head till straight with body; then let go. Change the hands and repeat same process on opposite side of head. This, you perceive, stretches the neck muscles, and cervical vertebrae as well, thoroughly.

The stretching of the *spine* is done as follows: An assistant takes hold of the feet, and the operator takes hold of the patient under, or by the arms or wrists, and gentle and steady extension is made. If patient lies on face, a second assistant may be of service in adjusting spine for any deviations found, such as curvature, contracted muscles along spine, atrophied, shrunken or affected muscular structure.



This treatment is greatly beneficial in all spinal affections, in a large variety of pains, lameness, rheumatic or neuralgic, sciatica, lumbago, etc. It relieves spinal congestion in cerebro-spinal meningitis. The stretching of the *spinal cord* will be advisable for a great many affections, and properly performed, frequently produces the most marvelous results imaginable. Lameness that has existed for years frequently yields at once. Remember that *the important thing to do* is to *take off the pressure*. Freedom's holy influence blesses mankind physically, as well as morally, *spiritually*. "*Freedom!*"

## PLATE IV.

With the tips of the fingers of both hands placed near the cervical vertebrae, hands at the sides of the neck, pressing gently against the neck with ends of the fingers, move the hands rapidly in such a way as to move the muscles of the side and back of the neck upwards, downwards and sidewise, vibrating, for several successive moves.

## PLATE V.

Place the fingers (one or more) at the angle of the jaw; have the patient open the mouth widely; at the instant the mouth is opened draw the fingers up firmly to the side of the head, back of the ear, stretching the skin and adjacent and subjacent tissues at the same time; and as the patient closes the mouth, loosen the pressure of the fingers. Do this two or three times, being careful not to produce pain by holding the fingers in position as the jaw is closing.

## PLATES VI.a AND VI.b.

The ear movement is made as follows: Place the end of the forefinger palmar surface on the *Tragus* (the little protuberance just below and in front of the meatus-auditorius externus), the ear being held between first and second fingers: move them quite vigorously up and down several times, then press them backwards with a steady but rather sudden jerk, and revolve the integument with the whole ear several times.

## PLATE VII.

Place the fingers, the pulps of them, on the temples, and, with an up and down or rotary movement, vibrate in and over and around in all directions on the temples for several quick, successive movements, and at the same time dropping the thumbs on the forehead and vibrating them over every part of it, upwards and downwards.

## PLATE VIII.

This movement is made by placing the palmer portion of the thumbs on either side of the nose, pulling them upwards and outwards over the eyebrows across the supraorbital notch two or three times, with moderate pressure.

PLATE IX.*a*

Put the thumb on one side of the nose, fingers on other side, compress slightly, and move them up and down the length of nose, pulling skin at the same time, moving quite rapidly for several successive moves. Then—

PLATE IX.*b*

Put thumb and index finger of either hand on papillae lachrymale at inner canthus of eyes, squeeze gently, then, finger and thumb in position, gently push them down to the sides of the nose with a sudden push, being careful to hold them together so as not to spread out and run them into the eyes. Two or three vigorous motions should be made.

## PLATE X.

This move is made by placing the thumbs on either side of the alae of the nose, and using pressure on the malar bone, letting the thumbs slide downwards and outwards on the under edge of the malar processes of the superior maxillary bones. Repeat the movements two or more times.



## PLATE XI.

Introduce the forefinger of each hand into the nostrils and place the thumbs on outside; press them together, then pull nostrils outward (straight), stretching moderately so as to dilate the sphincter alae. This is one of the treatments for catarrh.

## PLATE XII.

The movements of the muscles of the neck are shown in this plate, and being important, it is essential that they be well understood. This movement, or the movements, are made by standing at the side of the patient, the operator placing the hand on the forehead of the patient, the other hand on the side of the neck, fingers close to the cervical vertebrae, but not beyond the vertebrae of the side of the neck the hand is placed, the fingers forming a gentle curve, and the tips pressing evenly and vertically on neck; and now, with a rolling motion of the head, done by the use of the hand of the operator, on forehead, pushing forehead from him, and at the same time pulling the other hand toward himself, the operator being careful not to let the fingers slip over the skin, but pulling the skin and deeper structures with the fingers, using sufficient pressure to do so, and yet not hard enough to be painful or uncomfortable to the patient. The hand should course up and down on the neck, being particular to manipulate all of the side of the neck with that sort of a motion; then change sides of table; get around on the other side and go through the same process as on side left. The moves should cover every portion of the neck, and should be thoroughly done so as to reduce all of the rigidity that exists in the neck muscles at one sitting, if possible.

## PLATE XIII.

## THE RAISING OF THE CLAVICLES.

Standing at the side of the patient, place the arm of patient at the side of the body, flexed at elbow, catch hold of

arm at elbow with hand, right arm of patient with right arm of operator, push the arm upwards gently. This pushes the clavicle upwards, and away from the first rib somewhat; now place the fingers of the other hand between the neck and clavicle, gently pull it outwards and at the same time raise the arm up to a level with the shoulder, keeping it on the level with the body, sliding it up on the table to that height; then let go with both hands, as you have the clavicle sufficiently raised for one time. This is the manner of raising the clavicle while patient is lying on the back of the operating table.

PLATES XIV.*a* AND XIV.*b*.

THE MOVEMENT OF THE ARM WHILE THE PATIENT LIES  
ON THE TABLE AND ON THE SIDE.

Standing at the side of the table, patient lying with face toward operator, relaxing as much as possible every muscle in the body, the patient is taken hold of by the operator, by the wrist, the fleshy part of the wrist next to the palmer surface of the operator, the forefinger extending between the thumb and forefinger of the patient, which gives secure and easy control of the movements to be made by the operator.

The hand of the operator now should be placed with the fingers somewhat gently curved, the pulps of the fingers near the spinous processes of the dorsal region, beginning midway between scapulae and on the side of spines next to operator, keeping patient on the side, leaning a little from the operator, close to edge of the operating table, and the operation should be at the side of the table, pretty nearly opposite the patient's shoulders, with foot extended beyond the head of the table, and the other foot placed so as to brace the body firmly and comfortably. Now extend the arm upward loosely to the side of the head, trying its natural position to the side of the head without straining, having hold of hand or hand and wrist as aforementioned, and the hand as before stated near spines of dorsal vertebrae; pressing gently two moves are made at once, simultaneously—the arm is extended, and at the

same moment there is sudden pressure made in the back, then the hand on the back should be firmly held in place while the patient's elbow is bent, flexed, upon itself, and suddenly brought back, with the hand closed around the wrist, to the side, over the arm of the operator (see Plate XIV.b) with a sudden movement. This sort of a movement is to be repeated a number of times; the operator moving the fingers down the side of the dorsal vertebrae, an inch or two at a time, so as to cover all the space in the different moves as far down the back as the tenth or twelfth dorsal vertebra. This may be repeated two or three times. This should be done on both sides the same way. This constitutes all of the dorsal treatment from the arm movement. The reader will not confound this movement with other dorsal treatments, remembering that this is the arm movement on the table for the back treatment. This move is an important one, and should be thoroughly understood, for upon the right kind of execution of it depends important results. These movements will be often referred to in the body of this work.

#### PLATE XV.

##### NECK MOVEMENT.

Patient lying on the back, the operator places his hand under neck, finger ends on opposite side of cervical vertebrae, pressing gently on muscular structure, and holding fingers in that position, with other hand on the forehead of the patient, rotates it from him, toward ends of fingers of hand under neck, thus pushing muscles away from their moorings, as it were, continuing this process from base of skull clear down the cervical vertebrae to the shoulders, or first dorsal vertebra. This is to be done on both sides of the neck, changing hands, of course. Notice position in this plate.

#### PLATE XVI.

##### FOR PAINS IN THE BACK, DIARRHOEA, ETC.

The patient being seated on a stool, the operator, seated behind on another stool, places hands under arms of patient

in such a manner as to include the shoulders, and placing the knees on either side of the spinous processes, gently draws the shoulders backward, and rolls the body of patient either way, using his knees as pivotal points against sides of spines, in the lumbar region, gradually pulling body upward as the body of operator is inclined backward. This stimulates the nervous system in that region and stretches the lumbar muscles, takes off the pressure, and relieves distress. This move may be utilized in the treatment of diarrhoea, flux, kidney troubles, by placing the knees in the proper position on the sides of vertebrae, in lower dorsal and lumbar region. This will be fully explained elsewhere in this book.

#### PLATES XVII. AND XVIII.

##### THE MANIPULATION OF THE HIP JOINT.

The patient lying on the back, the operator takes hold of the ankle, flexes the leg, presses it against or toward the abdomen, rotates it to ascertain whether the articulation is normal, adducting and abducting it as well as flexing and extending it. Then hold the leg at the knee in either one of the methods desired, flex the thigh up on or toward the abdomen, placing the fingers of the other hand just above the sacroiliac junction, pressing firmly with the ends of the fingers, and rotate the knee outward, downward and backward, repeating this process several times, bringing the fingers down a line half way between the ischium and the great trochanter, following the course of the great sciatic nerve as nearly as possible. The pressure may be modified according to effect desired. The various methods of holding the leg may be seen in the plates. The various methods of reducing luxations of the hip joint, described in books on the science of surgery, are familiar to surgeons, and, being duly explained in this book, need not be mentioned here. But the adduction and abduction are frequently used in the various muscular contractures in the hips and thighs which cause pain, rheumatism and kindred affections, such as neuralgia,



varicose veins, ulcers, etc., that will not down of their own accord, but will recover if the proper manipulations of the hip joint are made. We have other movements of the hips that demand our special attention.

#### PLATE XIX.

The patient lying on the back, the operator should take hold of the ankle, placing the other hand below the knee; flex the leg upon the thigh and press the thigh well toward the abdomen; raise the foot a little, and press the thigh further toward the abdomen, and while thus taut, hold it quite firmly with the hand just below the knee, and with the hand holding the ankle move the foot from the other leg, describing about an eighth of a circle, moving it backward and forward a few times; this vibrates the hip and knee joints.

#### PLATE XX.

With the hand holding the ankle, and the other one holding the leg below the knee joint, and the leg flexed on the thigh, and the thigh on the abdomen, and held there firmly, pass the hand from below the knee above the knee, as in Plate XVII., and gently push the knee toward its fellow over the other thigh, at the same time bringing the ankle outward, and as the leg is brought to a straight line letting the hand above the knee come down on it as it comes to a level with the other limb. This last move should be made in a quick and rotary manner, coming down suddenly with the leg on the table.

#### PLATE XXI.

This plate is the finishing of Plate XX. This manipulation should be gone through with two or three times each treatment.

#### PLATE XXII.

The stretching of the adductor muscles is done in the following manner: Take hold of the ankle with one hand, flex the leg upon the thigh, turn knee outward, foot at right

angles with other leg, knee pressed down with other hand, the hand above the knee, pressing firmly and steadily, continuously, while the hand holding the ankle draws the leg down with a quick jerk to a straight line, and the forefingers of the other hand pressing against the side of the leg thus extended so as to suddenly go against the side of the leg as it stops, with a sudden stop. This gently jerks the hip joint, as well as the knee joint, with a slight shock.

#### PLATE XXIII.

This plate shows the conclusion of Plate XXII. very perfectly, with the hand beside the leg, and just above the knee.

#### PLATE XXIV.

##### VARICOSE VEINS. VARICOSE ULCER TREATMENT.

Place patient on the back, on operating table, take hold of the leg just below the knee, flex the leg on the thigh, and with the other hand take hold of the thigh about two inches below the bend of the hip joint, fingers about the middle of the front of thigh, fingers forming a gentle curve, gently grasping the muscular structure; hold firmly and at the same time flex the thigh more against the abdomen, directing the knee toward the opposite shoulder of the patient in a slightly outward circular rotary movement, and at the same instant squeeze the fingers down on and inclosing the front part of thigh and pulling the elbow slightly backward and the wrist with an outward, backward, circular move, repeating these moves several times. This is for the purpose of freeing the veins in that region, especially the saphenous, which empties the blood from the deeper veins of the thigh into the femoral vein. The closure of this vein (saphenous) causes that condition called varicose veins of the leg.

#### PLATE XXV.

##### VARICOSE VEIN TREATMENT CONTINUED.

Letting the foot rest on the table, knee at right angle,



patient on the back, take hold of the side of knee with one hand, the other hand with fingers slightly curved around on and under inside of the muscles low down on thigh, pull the ends of fingers against the muscles and at the same time push the leg and knee inward toward other leg, carefully moving all the muscles of the inside of the thigh as far up as the adductor brevis, and then the move as shown in Plate XXIV. may be repeated in the treatment. This is *the* most important movement in the treatment for varicose veins, for stoppage of the blood in the deeper veins and the saphenous vein means trouble below in leg.

#### PLATE XXVI.

A FURTHER TREATMENT OF THE LIMB TO FREE THE VENOUS CIRCULATION, WARM THE FEET AND REMOVE OBSTRUCTIONS TO RETURN CIRCULATION.

The patient lying on the back, catch hold of the ankle, other hand placing thumb resting on tibia about the insertion of quadriceps extensor muscle, fingers of the hand under head and back of fibula, grasping that bone, using some compression; flex the leg on the thigh several times, bring considerable pressure to bear each time, and lower the fingers into the posterior peroneal space, using the leg as a lever to squeeze the muscular tissue and deeper structures in that region, extending and flexing the leg repeatedly. This is an excellent move to aid the return circulation of the fluids.

#### PLATE XXVII.

THE METHOD USED TO WARM THE FEET.

The patient lying on the back, take hold of the ankle with one hand, place the other hand above the knee on the lower end of thigh, raise the leg with hand holding ankle, press firmly with other hand above knee, stretching all of the back muscles of the leg. Let the knee bend a little, and bring the pressure against the thigh with other hand suddenly, though gently, several times, and the feet warm up as if by magic. A still better way to increase the circulation of the

blood in the leg and foot is to place the leg on the shoulder, lock both hands around the thigh just above the knee, moving up so as to let the leg flex at the knee, and spring the hands gently towards operator, bringing the leg straight with a sudden jerk—not strong, but easily, as prudence may dictate in each given case. This move may be made several times at one sitting, and no treatment will bring better results for cold feet. It will be referred to frequently for various other affections.

#### PLATE XXVIII.

This move should not be ignored, for it has its uses, and is frequently needed. The operator should take hold of the tendo achilles with one hand, holding it in such a manner as that the ankle may be firmly fixed, catching hold of the foot with the other hand, more nearly or around the toes, placing his shoulder or chest against the inner side of the forearm to steady his moves; now gently push the toes and metatarsal bones toward the front part of the tibia, pulling firmly in heel, counterbalancing the pressure made by the other hand. This stretches the muscular fibers of the back of the leg and lengthens them, equalizing the muscular strength of all the muscles of the leg. While the hands are thus holding the foot, rotation may be made to adjust any displacements of bones existing in the foot or ankle.

#### PLATE XXIX.

##### OUTSIDE OF LEG AND THIGH TREATMENT.

Place the patient on the back, flex the leg opposite, take hold of the knee, inside of opposite side of patient (to operator), and pressing knee outward, pulling inward with hand holding muscles of thigh, following course of sciatic nerve—that is, half way between the ischium and the great trochanter, pulling the muscles quite firmly, going over the parts two or more times. This treatment not only frees the muscular tissue on the outside of the thigh, but stretches the muscles on the inside of thigh, and in cases of sciatica or rheu-

matism, myalgia or diseases resulting from contracted muscles and sluggish circulation in that part of the body, is what should be done.

### PLATE XXX.

FOR THE EXPANSION OF THE CHEST, RELIEVING MANY AFFECTIONS OF THE VISCERA IN CHEST.

The patient lying on the back, two persons, one on each side of table, take hold of the wrist of patient, with the other hands placed near the sides of spinous processes, pressing firmly, beginning about the first dorsal vertebrae (each operator on his own side of the body next to him), with the arm of patient stretched strongly upwards and outward, as well as backwards and downwards, using the arms as levers and the ends of fingers as fulcrums, and at the same time having the patient inhale deeply; the arms are returned to the sides of patient with a sudden push and down on table to side of patient. This process should be repeated, moving the hand of operator down spine an inch or two each time the operation is repeated, going down as low as the tenth dorsal vertebra. The angles may vary from a right angle to a vertical, pulling up to the side of the head. If there is no assistant, one operator may treat one side at a time. This is a most excellent way to expand the chest, and the patient invariably feels better. Care should be exercised in all the moves made, and due regard to the comfort of the patient. The various manipulations should be made with the view to benefit, and not to exhibit skill simply for the sake of praise as a mechanic, but for the good of the one operated upon. Disgrace always follows an awkward manipulator; justly, too.

### PLATE XXXI.

This plate represents the arm and scapular movement, and comes in the general treatment, and by it the scapula is moved, raised from its moorings, and the pectoral muscles, deltoid, coraco-brachialis, teres major and minor, latissimus dorsi, trapezius, supra- and sub-scapular muscles, stretching

muscular fiber and aiding in promoting free circulation of the blood and other fluids in muscles and tissue involved in them. The patient lying on the side, the operator takes hold of the elbow with one hand, and puts the end of his fingers of the other hand at the upper and posterior border of the scapula, pushes the elbow backward, and edging the fingers of the other hand under the edge of the scapula, moving fingers downward at each move of the elbow backwards, until lower edge of scapula is reached.

### PLATE XXXII.

#### STRETCHING THE DIAPHRAGM.

Place the patient on the back on a table, hands down to the sides, limp, relaxed; the operator, standing at the head of the patient, reaches arms down to the lower edge of the chest, in front and on either side of sternum, placing fingers of both hands at the junction of ribs and abdomen, as if to take hold of ribs, and while holding there require the patient to take a deep inspiration, expanding and drawing up the chest as well as the abdominal muscles; then have patient let go—that is, cease to hold—suddenly (this relaxes all of the muscles made taut by the inhalation), and just at that instant put the ends of the fingers under lower edge of ribs and pull steadily upwards and outwards, using moderate strength. This surely does the work effectually. It is a means of overcoming much of the constriction around the waist caused by heavy skirts in females, and tight lacing of former years (of course, we have no tight lacing now!), and freeing the lower tension and constriction caused by contracted abdominal muscles.

### PLATE XXXIII.

#### TREATMENT OF THE LIVER.

The patient should be in a recumbent position, lying on the back, a little inclined to the left side, the operator on the left side of patient, right hand with fingers somewhat curved, ends placed on right side of spinous processes between the



sixth and the tenth dorsal vertebra, with left hand (the heel of it) or the ends of fingers placed on abdomen at or under edge of the ribs on right side of patient, and while pulling with the right hand, he presses ends of fingers of left hand against liver, circling the entire edge of that side of the body, having regard to the susceptibility of the patient as regards pressure. The kneading of the liver should be done gently, but thoroughly.

#### PLATE XXXIV.

##### TREATMENT FOR CONSTIPATION.

After the liver has been treated as directed in Plate XXXIII., while the right hand is in position as shown in that plate, and the patient on the back, let the operator place the fingers of the left hand on the left side of the abdomen, down in the region of the sigmoid flexure, pressing gently with the fingers, and at the same time pull gently with the right hand against the right side in the region of the liver, moving the fingers of the left hand upwards, along the course of the descending colon, pressing at short intervals as the other hand is drawing against the side and liver.

#### PLATE XXXV.

This plate shows the manner of percussion of the abdomen with the finger ends all gathered in a bunch, each hand. The object of this treatment is to arouse peristalsis of the intestines; and it often does it while patient is receiving it to that of desire to empty the bowels at once. The patient lying on the back, abdominal muscles relaxed, begin with one hand at the iliocaecal valve region of the abdomen, begin the tapping and alternate the taps with the ends of the fingers, up, ascending colon to the hepatic flexure, then across abdomen to splenic flexure, thence down descending colon to sigmoid flexure. Repeat this process the same way several times, not tapping heavily, and your efforts will be crowned with satisfactory success for constipation; but the other methods used for constipation should not be neglected, remembering all the

time that the hepatic secretion, called bile, is an irritant that stimulates the mucous membrane of the intestinal tract, and is set in motion and action through the splanchnic nervous system. The next number of our plates represent another step in the manipulation of the abdomen that is very efficacious in relieving constipation, peristalsis, etc.

#### PLATE XXXVI.

The patient lying on the back, the operator places one hand, spread out and covering as much of the abdomen as one hand will, placing the other hand on his own, over abdomen of patient, using gentle pressure rotates from left to right slowly and firmly for several moments, then disengages his hands and goes through a process of kneading for a little time; then repeat the rotary process and the percussing (tapping) process. These measures should be applied at least every other day to insure satisfactory results in cases of chronic constipation. There are other manipulations sometimes necessary in the cure of constipation that will receive attention at the proper place in this book.

#### PLATE XXXVII.

##### THROAT TREATMENT FOR CATARRH.

The patient, either lying on the back or sitting up on a chair or stool, head inclined backward, mouth wide open, the finger of the operator is put into the mouth just behind the last upper molar tooth, palm of finger looking forward; begins by gentle pressure at that place, and follows posterior border of soft palate across to opposite side, and back to place of beginning, not pressing too hard, only moderately. This stimulates the palatine nerve filaments and aids in removing venous stasis, the direct cause of the condition resulting therefrom, called catarrh. This should be done three times a week, and should be the finishing-up treatment each time the general treatment is given for catarrh. Care should be exercised that bruising be avoided, as the palate is fragile. The



finger should be thoroughly cleansed, with due regard to hygienic results, and in fastidious patients the cleansing will be a matter of intense consideration.

### PLATE XXXVIII.

#### DORSUM TREATMENT.

The patient lying on the table or mattress, face down, the operator takes hold of the patient's foot, opposite the side he is on, places the heel of one hand about the middle of the back, on opposite side of spinous process, pressing firmly downward and outward, raising the foot, drawing the whole limb upwards and in a gentle curve, springing the back a little beyond the comfort of the patient. The patient should be inert, all of the muscles relaxed as regards his holding is concerned, or stiffening himself. Each time the leg is thus raised and sprung against the hand as the fulcrum, it should be lowered to the table, the hand moved the width of it down the spine, and this may be repeated several times at one sitting, the patient's head resting on side of face turned toward operator. This tends to relax the muscles on opposite side of body. The other side of back should be treated the same way at the same sitting. The ease with which this treatment is given is greatly increased by the operator getting up on the table at the side of the patient, his foot—one of them—placed on the mattress beside the leg of patient, the body resting on the other knee, up near the arm of patient, same side. The results of this treatment are apparent in many pathological conditions, as will be adverted to elsewhere at various times, as occasion requires, in this work.

### PLATE XXXIX.

#### BACK MOVEMENT.

Operator on the side of table, standing. The patient reclining on the couch or table, on the stomach, face downward, all of the muscular system as nearly relaxed as may be, lying near the edge of the table, next to operator. The manipulator, using whichever arm most convenient, places arm

underneath the limbs of patient, just above the knees, placing the other hand about the middle of the back, finger knuckle placed on one side of spinous processes and thumb on the other; he presses firmly, inclining to push upwards, and at the same time raises the limbs upward, making the back form a gentle curve, holding it there and swinging it from side to side a time or two, then halting on a line with the body, increasing the pressure on the back by gently raising the limbs a little higher, then lowering the limbs to the table. This should be repeated several times, moving the pressure down the back, covering the whole of the lumbar region at one sitting. One operator may do this on reasonably light persons without straining himself, and to great advantage of the patient, which will be further explained elsewhere.

#### PLATE XL.

##### A CHEST AND BACK MOVEMENT.

The patient lying on the couch, face down, and face turned from operator, the operator places the one hand on the back of subject about the middle of dorsal region, on the opposite side of spinous processes, heel of hand pressing on the body close to the spines of dorsal vertebrae, in such a position as to press muscular tissue away from their moorings, then place the other hand under the axilla of opposite arm of patient, pulling shoulder toward, and pushing with hand on back from the line of axis of the body. This should be done on both sides, moving hand down the back a little each move.

#### PLATE XLI.

The patient lying on the stomach, perfectly relaxing the whole system as nearly as possible, arms lying loosely to the side or hanging off the side of table, face looking away from operator, the thumbs and fingers are placed on either side of the spinous processes, near them; the operator makes a sudden, springing push downward with both hands, beginning at upper edge of scapulae, and at each such sudden pressure

moves down the back, stopping at the last lumbar vertebra. If the operator is strong, the table not too high, this treatment may be properly done while standing on the feet, but where the operator is small, the patient large, it is better done, easier and more effectually, when the operator places himself on the table beside the patient, on his knees. This gives more ease in producing the necessary sudden pressure; but the hardness of these shocks must be governed by the case treated, susceptibility of force, and effect desired.

### PLATE XLII.

#### A LIVER AND SIDE TREATMENT.

Place the patient on a chair or stool, the operator, standing at one side, places one arm around the shoulders and neck of patient, placing hand in front of upper chest region and holding shoulder so as to control it, places the other arm across front of chest, with hand to opposite side, finger ends placed at the sides of the spines, beginning about the sixth dorsal, and then pull the side forward (toward operator), using the arm around neck and shoulder as an antagonist, pushing shoulder backward, while the other hand is pulling forward, the fingers endeavoring to draw the muscles from the vertebrae, as shown in the plate. This is one of the manipulations used in treating the liver, colic, pleuritic and lung affections that may be frequently utilized.

### PLATE XLIII.

#### THE "PULL-BACK" TREATMENT.

Place the patient on a table, lying on the side; the arm uppermost should curve under the neck and reach back to and catch hold of the edge of the table he is lying on, so as to keep from being turned off of the table during the treatment. Let operator take hold of patient's ankle with one hand (the one above), place the thumb and fingers of the other hand on either side of the spinous processes about midway of the back, pressing firmly, inclining to push upwards, pull the foot and

leg gently backward, giving to the motion a sort of a spring, then let it go to its normal position. Repeat this movement several times, moving the fingers down an inch or so at a time as the leg is drawn backward. This move not only stimulates the terminal filaments of the spinal and sympathetic nerves, but it stretches the abdominal muscles and the anterior muscles of the thigh, and can be extended on down the thigh over the course of the great sciatic nerve, as in the treatment for sciatica and uterine affections mentioned elsewhere, more particularly that of amenorrhea and affections due to abnormal functions of these organs caused by capillary congestion.

#### PLATE XLIV.

The patient seated on a chair or stool, the operator standing in front, knees between operator's knees, so as to steady the body on stool, the operator takes hold of the wrist of patient with one hand, places the other hand and arm on same side of patient in such a manner as to let the fingers press on the sides of spinous processes on the side next to operator, and up between scapulae, about the fourth or fifth dorsal vertebra, fingers gently curved, so as to apparently grasp the muscular tissue under skin, and now, with the arm extended, carrying arm of patient upward, places same to the side of the neck (of operator), straightens himself upward and backward, stretching all of the muscles of the side of the patient, then holding them in that position, pushes the arm backward gently, firmly, steadily, cautiously, as far backward as a line of the back of the head of patient; then, having a firm hold of the wrist of patient, fingers of the other hand still in position on the sides of spines, bends the elbow of patient at right angles and pushes it down over arm to the side of patient, firmly, suddenly. Repeat this move several times, lowering the hand on the back each time the width of the fingers, covering locality on the back as low down as the lower edge of ribs. The other side should usually be treated the



same way. A moment's reflection shows the importance of these moves in raising all of the chest, side and intercostal muscles.

#### PLATE XLV.

The patient sitting on a stool, chair, bed or bench, the operator, standing in front, places both hands around neck, letting fingers meet posteriorly, with ends of same somewhat curved, pulps of ends of fingers pressing against back of neck on either side of cervical spinous processes, with the thumbs looking upward at the sides of the head, steadies the head of patient, pulls gently, yet firmly with fingers, and steadying head with hands, inclines to bend neck forward and head backward at the same time, making gentle pressure on back of neck, embracing vasomotor region, holding the fingers in position for a moment, then changing fingers to other points on neck and giving springing motions of neck. This is one of the moves for headache, and comes in the general treatment, and utilized in the treatment of many diseases, stiffness of the muscles of the neck, neuralgia, rheumatism, spinal affections, etc.

#### PLATE XLVI.

This plate is designed to represent the continuation of Plate XLV. Whilst the hands are holding the neck, fingers nearly meeting at back of neck, close the hands somewhat, raising one elbow and lowering the other, rotate the head partially on its axis, going through that motion, raising first one elbow, then the other, inclining to press upward at the same time, so as to stretch the muscles on all sides of the neck while the movements are being executed; then finish the movement by closing the finger-ends against the sides of the spines of the cervix, pressing so on the fingers as to pull the muscles of the sides of the vertebrae forward, changing positions of fingers two or three times before letting the patient go. This movement should be done with caution, so as not



to dislocate the vertebrae. This treatment will relieve much contracture of the cervical muscles, and greatly aid in relieving congestion of the head.

### PLATE XLVII.

#### TREATMENT OF THE MUSCLES OF BACK OF NECK.

The patient sitting up, the operator places one hand on the forehead, the other on the back of the neck, one or more fingers on one side of spinous processes, the thumb on the other side, and both close up to the atloid-occipital junction, where the finger and thumb are made to press gently—or even strongly, as the comfort of patient seems more or less susceptible to impression—then counterpress with other hand against the forehead, inclining to push upward with the thumb and fingers on neck. Lower the finger and thumb a little and repeat movements until all of the cervical region is gone over. This move not only stimulates the nerves in the vasomotor region, but stretches the muscles on front and back of the neck, aiding in removing much congestion of the venous blood and the lymphatics, emptying them into the large jugulars.

### PLATE XLVIII.

This plate represents a neck treatment, and a method of stretching the muscles in many cases where movement is not so much needed as stretching the whole muscular system upward, and at the same time controlling nerve influence as well as arterial circulation, venous and lymphatic activity. It is curative for many severe headaches.

The arm of the operator should be placed under the chin, the bend of the elbow receiving the chin, and the arm so held as not to choke the patient, the fingers and thumb of other hand situated on either side (both sides) of the spinous processes of vertebrae, up close to the base of skull, rather firmly pressed; lift chin gently with the arm, pulling upwards, and at the same time pressing with finger and thumb against back of neck. The head should be tilted gently backward

and forward several times, using gentle upward tilt each time. This should be done easily, but firmly, changing the position of thumb and fingers so as to cover all of the cervical vertebrae at one sitting.

## PLATE XLIX.

### VIBRATORY MOVEMENTS.—CONTINUED DOWN BACK.

The patient being seated on a stool or chair, the operator bends head of patient forward against chest, places the ends of the fingers of both hands close up to the edge of occiput, just posterior to mastoid processes on either side of neck, and with quick successive movements, holding finger ends against the skin so as not to slip, but move the skin with the fingers; makes movements with ends of fingers, held steadily toward spinous processes and back towards ears of patient, several times rapidly; then moves ends of fingers downward, and goes through same sort of moves, continuing this until these moves include the muscles of back of neck down to top of shoulders. This is a thrilling, vigorous, exhilarating treatment, and aids in promoting circulation of the blood, regulating it, and stimulating recurrent nerves along side and back of neck in all of the cervical region, and embraces the spinal accessory as well, on either side of spine all the way— or anywhere over body.

### THE VIBRATORY MOVE ON BACK MUSCLES.

The patient lying on the face, on table or mattress, the operator, standing at the head of patient, places the tips of fingers on either side of spinous processes, pressing on pulp-ends of fingers moderately firm, moves them up and down the sides of the spines, or in a vibratory manner, changing them to different localities at short intervals, so as to frictionize all of the muscles along the whole length of the back. This same sort of a vibratory move may be used in various places on the body, depending on what is indicated in the various pathological conditions. This is a most excellent and effect-

ual means of soothing the system, of increasing surface capillary activity, and stimulating peripheral nerve action.

#### PLATE L.

This plate shows a special movement for sore throats, catarrh, enlarged tonsils, etc. The patient lying on the back on a bed or table, the operator, standing at the side, places one hand on the forehead, the other across the upper part of the chest, not letting either hand or arm rest on the patient, but places one or two of the fingers on the opposite side of the neck, pressing pulps of fingers against side of neck; push the head with a rolling move over toward opposite side, and at the same time holding the fingers steadily on the skin on the side of the neck so as to seemingly pull the deeper tissue toward him, then bring the head back to former position; repeat process a number of times, placing the fingers at different places on the side of neck at each and every turn of the head from you. Cover all that side of the neck thereby, then do the same on the other side of the neck. Continue moves for several minutes.

#### PLATE LI.

The patient seated on a stool, the operator takes hold of wrist with one hand, places the other forearm in axilla of patient, extending arm and pulling up in axilla hard enough to distinctly raise the shoulder of the patient, being careful not to use greater strength than simply to lift the shoulder joint slightly upward, the arm being drawn down to the side of the patient, with the hand of the operator, as seen in the plate. This is an excellent movement for lifting the whole shoulder joint, including the clavicle and scapula on either side, as well as both sides. It stretches the serrati muscles, and all of the muscles inserted or attached to the arm, and liberates much of the impeded circulation of venous blood in the whole arm, aiding in the cure of many diseased and semi-ankylosed shoulder joints. Much good may be accomplished by this movement, which should be done on both sides.

## PLATE LII.

After raising the shoulder joint, as seen in Plate LI., the patient sitting on a chair or stool, the operator takes hold of the arm of patient at wrist with one hand, and with the other hand just above the elbow, thumb above, and all of the fingers encircling the arm, letting the finger ends rest above external condyle of humerus, in contact with ulnar nerve as nearly as may be where it passes around the condyle of humerus, holding arm of patient against the body in such a manner as that the back of arm shall rest against the body of the operator; and now bend the arm gently backward, springing it a little, then, letting up with the springing backward pressure, holding the arm in position against the body, with the hand holding the wrist, roll the forearm toward the body of the patient, describing as nearly as may be a half circle, squeezing the fingers of the hand holding the arm above the elbow, so as to pull all the muscles forward, and articulate the elbow joint briskly for several successive moves at one sitting. Then treat the other likewise. Do not fail to recognize the fact that this move assists in freeing the muscles, the *nerves*, blood vessels, etc., in that quarter of the body.

## PLATE LIII.

## TO RAISE CLAVICLE.

The patient sitting up, the operator, standing at the side, takes hold of wrist of patient and places the other hand at the side of the neck, with the second finger on upper margin of the clavicle, about half way between the two ends, the third and fourth fingers resting on the side of the neck, and the forefinger placed above or at the inside of clavicle, in as easy a position as may be; now raise the arm gently, and at the same time push the finger down between the neck and clavicle, then carry the arm to the other side of neck of patient as if to place hand on opposite shoulder, extending it somewhat, which causes the clavicle to be moved outward. This should be repeated, and the other clavicle served in the same



way. This is one way to raise the clavicle, and not the least important, either; and, being used in almost every general treatment, should be done with perfect ease, and dexterously, and need not be painfully done to the patient.

#### PLATE LIV.

##### TO RAISE CHEST MUSCLES, AND TREAT SPINE.

The patient sitting on a stool, body as near erect as may be, the operator, standing directly behind, takes hold of the patient at the wrist, letting thumb rest on the palm of patient's hand, with fingers encircling patient's wrist, one foot placed at the side of the patient (at the side the arm is to be manipulated), the other foot placed farther to the rear, the thumb of the other hand placed on the side of spinous process about the upper dorsal vertebra, on the side of processes next to arm to be manipulated; then, being in such a position as to be able to follow the arm to the side of patient, cause the arm to rotate inwards, upwards and backwards, and just as the arm is being brought over the shoulder axis, wrist about even with top of head, the thumb, used as a fulcrum, is suddenly pressed against the back at the side of the spine, and the arm drawn suddenly toward the line of axis of thumb, and as suddenly the thumb pressure is made, so that a sudden stop is now made as the wrist is drawn a little beyond the posterior border of the shoulder, and then the arm is allowed to resume its position at the side of patient. The same move is repeated, the operator bringing the thumb down an inch or so at each manipulation, as aforementioned and described. Care should be taken in this move that the circular move is adhered to, for if the arm is drawn up to the side of patient, pain is experienced in the shoulder joint, and care should be had not to wrench the shoulder out of joint. This is one of the most difficult movements to properly execute, without personal showing—similar to the one made on the table, with arms extended. It is an important move, for all of the intercostals and chest muscles are involved in it, and as the arm is such an



important lever, this move becomes the more important. This move will be very frequently referred to in the treatment of disease.

## PLATE LV.

### THE KNEE CHEST EXPANSION.

The patient being seated on the stool or chair, the operator takes hold of patient by the arms (above the elbows—hands outside of), holding arms steadily, places the knee on the back between the scapulae, foot turned to one side so that the side of the knee will be against the back, and not the end of the knee, so as to produce pain; now gently pull upon the arms, pushing with the knee as a fulcrum, having patient at the time inhale deep inspiration, the arms being pulled upward and backward at the time. This should be repeated three or four times, letting the knee be moved down each time two or more spaces of vertebrae. When it is known that this move takes off the pressure from nearly all of the chest muscles, the thoracic viscera, relieving many supposed incurable pathological conditions, its importance will be recognized. Asthma is usually relieved at once by this move; painful inspiration, pleurisy, heart troubles and many other conditions are treated in this way. There will be frequent references to this move in the body of this book, and its importance will not be overlooked when tried by the operator.

## PLATE LVI.

### SHOULDER AND NECK TREATMENT.

The patient seated on a stool or chair, the operator, standing in front, takes hold of the wrist of the patient with one hand, places the other hand on the shoulder of patient, raises the arm with one hand, and with the fingers of other hand extended, grasps the supra- and infra-scapular region, pushes arm upward and backward, pulling and grasping the side, top and back of shoulder region with a gently gripping motion, as the arm is pushed upward and backward, so as to

in several such moves embrace all that side of the neck and shoulder; then treat the other side in the same manner, at the same sitting. Care in making these moves stimulates the health region of the body in such a way as that much relief is experienced at once by the patient.

### PLATE LVII.

#### RAISING CLAVICLE.—HEART TREATMENT AND GOITER.

The patient sitting up, the operator places himself as follows: Standing beside the patient, and taking hold of the arm at the elbow, the elbow bent, forearm flexed, and with the other arm holding the other shoulder, and letting the forearm cross the side and front of the chest to the opposite side, he places the thumb above the clavicle, and as the arm of the patient is drawn up by the operator, the thumb is gently pressed behind the clavicle so as to push it outward as the arm on that side of the body on which the clavicle is to be raised; he now pulls the arm steadily and firmly backward and upward, pressing against the clavicle at the same time, then lets go arm at once. This is one of the methods of raising the clavicle, and should be used for goiter as a first move, as it presses the clavicle away from the large veins which carry the blood from the head to the heart, thus aiding in relieving the pent-up blood in the *thyroid gland*, that produces enlargement of that gland. This, and "a particular altitude on the mountains of Switzerland," produce goiter; and the Osteopath cures them. It requires a treatment two or three times each week for months in some cases, but there are some cases cured in a few treatments. The soft variety yields more readily.

### PLATE LVIII.

#### GOITER MANIPULATION.

Seat the patient on a stool or chair, the operator standing behind patient, both hands are placed around the neck, letting the finger of each hand touch and be placed on the

sides and posterior borders of the tumor, thumbs on or near the temples; begin a sort of rotary motion of the head, pressing with the fingers on the tumor, gradually encroaching on the tumor from behind forward, as each rotary move is made, as shown in the plate. The clavicle should be raised previous to beginning the pressure on tumor. Several moments should be used in this treatment at each sitting, and treatment should be made three times a week. While some cases are easily reduced to normal size, there are others which require months of steady treatment to effect. The soft goiter readily yields to this sort of treatment. This movement greatly aids in freeing stiffness of the neck muscles, freeing the pent-up venous blood, the lymph as well, so that it cures many troubles of the neck and throat. It is a good movement indeed.

#### PLATE LIX.

##### DIPHTHERIA AND SORE THROAT.

The patient being seated on a stool, the operator, standing at the back, places one hand on the forehead, the other on the side of the neck, fingers gently curved so as to grasp the skin, and as the head is rolled toward opposite side of neck, the hand on neck on opposite side grasps the skin up close to the posterior angle of lower jaw, or anywhere at the side of the neck, pulling the hand gently as the head is pushed or turned in that direction, and then head returned to its normal condition, face looking straight in front of body; then same move is repeated a number of times, the fingers being placed in different places on the neck, and so on until all of the muscles of that side of the neck are thoroughly manipulated. This sort of treatment is requisite in many diseased or congested conditions of the neck, and is one of the treatments for goiter, diphtheria, tonsillitis, croup, wry neck, headache, etc.

#### PLATE LX.

##### UPPER CHEST EXPANDER.

The patient sitting on a chair or stool, the operator,

standing in front, holding patient's knees between his, places hands on either side of the neck of invalid, so as that his fingers press on either side of dorsal vertebrae in the scapular region, well up to the top, the patient locking hands back of his neck, holding tightly, but not holding elbows stiff; the operator, pressing fingers against sides of spinous processes, at the same time pressing the arms of patient outward, using his own fingers as the fulcrum, and the arms of the patient as levers, spreading his own arms so as to push the patient's arms backward and outward at the same time, thus causing expansion of the chest of patient. The fingers should be placed lower as each move is made, so as to cover several successive localities down the dorsal region, and at the same time pulling the hands upward and outward each move, stretching the chest muscles thereby. The importance of this move may be readily appreciated in all diseases of the chest.

## PLATE LXI.

### A CHEST EXPANDER AND SPINAL STIMULI.

The patient seated on a stool, the operator standing before him, the hands locked back of the neck; the operator places the arm on one side of the neck, hand extending backward, he places fingers on opposite side of spinous processes; taking hold of the elbow of patient, pushes arm backward, and at the same time presses against the back, so as to press the muscles away from the spines, using considerable force, and at the same time letting the other arm be held so as not to displace the (his) fingers on the back—that is, manages to steady the shoulders during these moves. The hand of the operator is lowered a little each move that is made, to press the muscles from spines. The importance of this move may be readily understood in the treatment of diseases of the chest, shoulder joint, and in asthmatic and heart affections, as well as of the lungs.



## PLATE LXII.

## SPINAL CORD STRETCHER AND STIMULANT.

The patient being seated on a stool, the hands locked and raised perpendicularly over the head, the operator, standing at the side or nearly so of patient, places his elbow through the loop thus formed, with elbow pointing forward of patient, puts his own hand in the locked hands of the patient, and if the patient is heavy, brings hands up to the side of his own neck, then steadies it there, pressing thumb and fingers on either side of the spines on dorsum, beginning as high up as the middle of scapulae; he now raises the arms and patient upward, rather inclining the body backward against his fingers, which are against the back. In the succession of these moves, the fingers are to be gradually lowered each move until the whole dorsal vertebrae are covered by the fingers, stretching the body of the patient upward as much as may be, regarding comfort. This movement enters into a series of manipulations that serve to move all of the muscles of the body and chest, both in front and rear, as well as on both sides. It should be done carefully and dextrously, and will be of great benefit many times. Consumptives derive great benefit from this manipulation, as it stretches the pectoral muscles, serratus muscles, raises the clavicles, the intercostal spaces, and at the same time stretches the abdominal muscles, removing congestion of venous blood, and has a wonderfully exhilarating effect on the whole person.

PLATE LXIII.*a*

## CHEST, ARM AND BACK MOVEMENT.

Place patient on a chair or stool, the operator standing in front, takes hold of both hands around wrists, and assistant standing behind patient, places thumbs or fingers on either side of spinous processes, well up between scapulae, holds them at this point as the operator raises the arms of the patient, upwards, pressing them backward by side of head, so as to stretch the pectoral, intercostal and all of the chest mus-



cles upward, and now, with a quick drawing forward of the arms, brings both hands down in front of patient, when the operation is repeated, the assistant moving thumbs down spine one or two inches each time until the back is treated as far as the tenth or twelfth vertebrae, using pressure as if directing thumbs upward each time, raising muscles from the spinous processes, outward as well as upward. These movements relieve many chest difficulties that other means fail to reach. Patient should take deep inspirations each movement.

#### PLATE LXIII.*b*

This plate represents the position of patient and operators of preceding plate, in the position when manipulation begins, and when arms of patient are brought forward after each move of raising arms above head and backward toward assistant.

#### PLATE LXIV.

##### ONE TREATMENT FOR PAINS IN BACK.

The patient seated on the table, couch or chair, the operator, at the side, places one arm in front of the body so as to embrace the shoulder of the patient between his own arm and shoulder, taking hold of the arm—it flexed at the elbow, so that it may be used to draw the patient upward as patient is inclined backward. The operator now places thumb and fingers of other-hand on either side of the dorsal spines about the fourth dorsal vertebra, placing his neck behind the neck of patient, patient resting neck on neck of operator, and fingers in place on the back, pulls patient backward and upward, and inclining backward until the elbow of operator rests on the table directly back of patient; then raises patient in sitting posture, relaxing all holds, placing fingers on the back a little lower, presses fingers on the back; repeats these moves until the whole spine is thus treated, observing to draw his own elbow toward his own side of the table, so as to give room for the body of patient to come as low as may be to

receive due pressure upward each move, as the body of patient inclines backward. This treatment should include all of the dorsal from the fourth clear down to the last lumbar, being particular to control the amount of pressure on the sides of the spinous processes according to the susceptibility of the patient, and as the necessity demands. This treatment is essential in many pathological conditions, and should be utilized when needed.

#### PLATE LXV.

Same as LXIV., only the inclined position, with neck of patient on neck of operator, showing how movement is made, and elbow on the table.

#### PLATE LXVI.

This move is for stretching the pectoralis, major and minor, coraco-brachialis, and supra-scapular muscles. Useful in many shoulder troubles, rheumatism, paralysis, etc. The operator, standing behind patient, places his arm directly across the upper and front of chest, embracing the shoulder on the side opposite the arm to be treated, so as to steady the chest, letting the point of shoulder be fixed; extends arm to the opposite shoulder (the one to be treated), gathering the muscles under the patient's arm with his own fingers, and with his other hand holding the elbow of the patient, pulls arm backward and upward, and at the same time counter-pulling with the fingers under the arm with the hand placed there, holding the muscles, stretching them with caution, gradually increasing the stretching as the arm and muscles become more pliable. This manipulation and the one succeeding (No. LXVII.), may be used quite frequently for many seemingly stiff and immobile shoulder joints, to great advantage, as well as for rheumatism, neuralgia, and to reinstate normal circulation in muscles of the arm.

## PLATE LXVII.

The operator, standing behind the patient, takes hold of wrist of patient with one hand, standing against the side and back of, so as to steady the body, places other hand under lower, outer aspect of shoulder joint, embracing with his fingers the several muscles under the arm in his own grasp, pulling the arm of patient directly forward and across the front of the chest, antagonizing the hold of muscles under arm with the hand holding the wrist. This stretches various muscles at the side, back and under arm—serratus, teres, latissimus dorsi, biceps, etc., and takes off the pressure, increases capillary circulation and relieves pain in shoulder very often like magic.

## PLATE LXVIII.

## SPINAL AFFECTIONS.

The patient seated on a moderately low stool, the operator standing in front, patient having hands locked and placed at back of neck, the operator extends arms under those of the patient, back, so as to let ends of fingers be placed on either side of the dorsal vertebrae, beginning with fingers anywhere, according to object intended in the treatment, using such pressure as desirable, or needed to raise, and at the same time tilt the body of the patient from side to side as the pressure is being made on the sides of the spinous processes by the fingers, letting the whole body be suspended as nearly as may be, while these moves are being made. The operator may begin with hand down as low as the sacro-lumbar vertebrae, or anywhere between the scapulae. This treatment is essential in many spinal affections, constipation, lung and liver torpor, spinal irritation, backache, lumbago, amenorrhea. The arms rest on arms of operator as these movements are being made, and if the knees of patient are embraced between the knees of operator, steadiness is the better maintained, and a more complete control of patient secured. These moves

may embrace any part or all of the lower dorsal or lumbar regions of the back.

### PLATE LXIX.

#### SCIATICA AND LOCOMOTOR ATAXIA.

The patient being seated on a stool or chair, the operator places himself behind the patient, takes hold of the knee on the one side, places other hand, with thumb and fingers—or simply the thumb—against the side of sacrum, over sciatic nerve, raises knee by gentle pulling of hand, while pressure is made with thumb over sciatic nerve, in a somewhat rotary, springing motion, aiming to use considerable pressure on sciatic. This move may extend the whole length of sacrum or lumbar region, or both.

### PLATE LXX.

#### TREATMENT FOR EYE TROUBLES.

The patient seated on a chair or lying on a couch, or in any position the operator may elect for convenience, the edge of upper lid is raised at the outer canthus with thumb and finger of one hand, and the index finger of the other is introduced into the eye at the outer canthus, and carried as far back as the retrotarsal fold—the posterior border of upper eyelid; the thumb placed on outside of eyelid in juxtaposition to the finger, and compression is made of thumb and finger together, and a gradual stretching of the lid, pulling it from the eyeball, and at the same time compressing *granules* on inside of lid, moving finger in the eye to inner canthus—that is, the inner edge of the eye—clear up to the side of the nose; then, with a sudden move, take the finger out of the eye. This is the upper eyelid treatment for *granulated eyelids*, and should be done every three to five days. *No lubricant* should be *used* on the finger, but the fingers used in and about the eyes should be well cleansed with good soap and water, nails made smooth and clean. and after the above treatment patient should bathe eyes in water, with a teaspoonful of salt to each



pint of water used. If there are *granules* or enlarged *follicles* on inside of lower lid, introduce end of forefinger into outer canthus so as to let palm of finger be down toward inferior border of eye, facing the orbital plate of superior maxillary bone, pressing finger on upper edge of that bone, carrying all of the tissue against the curved portion of it, and pressing somewhat firmly the tissue before the finger down on that plate, carrying the finger to the inner canthus of the eye, and turn palmer surface upward as it is removed to the side of the nose, pressing the whole surface of the inner canthus, and on that portion called the lacus lachrymalis, coming out of the eye quickly—not with any delay or rubbing motion. Get away from the eye when done treating it, at once. Patient will then bathe eyes with the salt and water solution above named, either warm or cold, as seems most pleasant. This treatment should be repeated as often as once in five or eight days. There is great benefit to be derived from this treatment. It takes off the pressure of contracted lids, which causes ulcers of the *cornea*, and perpetuates them, and cures ectropium, entropium, as well as almost all other inflammations of the lids and *eyeball*, blepharitis-marginalis, etc. Reference will be had to this plate frequently. The two plates represent the treatment of both eyelids, for all sorts of eye troubles—chronic especially.

#### PLATE LXXI.

##### FLEXING KNEE ON THIGH AND THIGH ON ABDOMEN.

Patient lying on back on couch or table, operator seizes leg just below knee and proceeds to bend limb at the knee and thigh, doing so strongly, stretching muscles of the whole limb, and while in that position the hip joint may be manipulated with other hand and fingers, beginning on sides of lumbar vertebrae, as high up as desirable to liberate muscles of that area, and proceed to treat along down the course of the sciatic nerve, bringing the limb outward and downward each time the fingers are pressed upon area covered by them.



This is the method of moving hip joint in nearly all of the ailments of the hip joint, and in confinement to rest the loins and hips after parturition. It soothes, rests, stimulates, promotes free circulation of the blood, and very often relieves all or any of the muscles of the hip joint of pain, or the limb from soreness.

## PLATE LXXII.

### VARIOUS DORSAM TREATMENTS.

The patient seated on a stool or chair, the operator places hands under patient's arms, placing his finger-tips against the sides of the spinous processes, gently lifting the body of patient and swaying him from side to side, using alternate pressure each move, changing position of hands each sway, beginning either at sacro-lumbar junction, or anywhere along the spine, according to effect desire. This movement is used for many conditions of the spine and abdominal viscera.

# OSTEOPATHY ILLUSTRATED.

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## FUNDAMENTAL PRINCIPLES.

It is a fairly well established fact that physicians regard the administration of drugs uncertain in their effects in the treatment of disease. The chronic affections uncured, and by drugs incurable, demonstrate to a certainty the unreliability of their action as curative agencies. The presumption that drugs act in some mysterious manner, and have a special affinity for diseased structure, finding their way to pathological parts, unite with a particular form of diseased structure, wrest its progress, hurl it from its moorings, and leave the parts cleansed, purified, swept and garnished, healthy, is an untenable and untrue premise to assume, the results failing to justify.

To assume that anybody needs anything but the normal elements to maintain health is to distrust perfection in creation, and to regard foreign substances as curable or in any respect compatible when diseased is to assume a theoretical improbability, for the restoration of the normal constituents of the body restores the balance of power caused by deficiency of elements. Restore the elements, and health is re-established. The freedom of the circulation of all the fluids of the body restores vitality.

That any one of ordinary intelligence should presume to assert that humanity is a machine, or that any one should compare a man to a machine, is surely not to be considered tenable nor applicable, yet he is composed of all the elements that go to make up all the machinery in the world, but

is not a machine in any sense whatever. The comparison is ridiculously inconsistent, to say the least of it, for he embraces every element in nature, rising from the earth, containing mineral, vegetable, animal, and reaching his acme in spirituality—controlled by a divine mind, acted upon through a set of cords originating in cranial centers, conducting the divine impression to the remotest atoms in the farthest-off locality in the various apartments of the house we live in, called the physical body.

That mind formed this wonderful structure, that it permeates every part of it, that this mind is conveyed through tubes we call nerves, and that through these nerves supervision—or the mind through these nerves regulates the manufacture, absorption, the assimilation, elimination, and every chemical change necessary to the conversion of the food eaten into the various tissues, bone, muscle, etc., is not questioned at the present day. But to assume that the body is a mere machine, is surely begging the question and mocking Deity.

The marvelousness of the science of the adjustment of the system to itself, and the complete and sometimes the almost miraculous change produced in the tissues through the application of the principles of Osteopathy, place it in the front ranks as the most stupendous fact of the nineteenth century. The practitioner is often appalled to witness the results. To the Osteopath, whose eyes have seen and whose hands have figured in producing these wonderful changes, it is commonplace, but to the one who has thought it possible to cure disease only through the administration of medicine, such a result—the relief of pain, the cure of long-lasting ills—by a simple adjustment of the system, by a slight manipulation or move of a muscle, it becomes astonishing!

The philosophy of curing disease by this science is simple, rational, certain, safe. The human system is composed of sixteen elements. These elements are derived from the food eaten and the water drunk, and the atmosphere that surrounds him. All these various elements are manufactured

and made ready to assimilate as they pass through the various tubes of which the whole structure of man consists, changing from the one element to another, according to the supply and demand in the various tubes through which the food—the blood—passes. As the blood passes from the heart and enters into the arteries, thence into the capillaries, certain elements are given off through the walls of the capillaries, entering the surrounding tissue, taking the place of the used-up tissue which is drawn into the lymphatics, to be ushered into the venoles, thence into the larger veins, mixed with the various debris, including all of the chemical constituents from the various tissues of the body, pushed onward into the right side of the heart, thence thrown into the lungs, to again undergo chemical changes—to be renovated, purified, cleansed, made over, then returned to the left side of the heart, thence to be carried through the arteries to every part of the system. And so on as long as life in that body lasts. The system possesses the power, being under the control of mind, to continue this same process every moment of time that we live. When there are no obstructions or interference in this natural process, health is said to exist. When every organ in the body is performing its function or functions in a natural way, we are not cognizant of pain or disease; but let any interference with the onward flow of any of the fluids of the body take place, a change occurs—chemical change. This change results in a disturbance of the molecules of the whole body. When the blood does not circulate normally, we at once recognize disease-producing elements somewhere in the body, and to the extent of the obstruction will be the result pathologically. To make this matter easily understood, to elucidate this subject, is the object of this book. If the reader carefully follows me in my delineations, there will come into his mind, and he will master the most marvelous science that the world has ever had presented to it. To take hold of a person, adjust the system in such a manner as to free the circulation of all of the fluids of the body, and through that process change all of the



PLATE I.a.—First of General Treatment.





chemical elements from an unnatural to a natural condition, seems incredible to the one uninformed. That this can be done is perfectly compatible with truth. No remedial system ever devised by man can boast of such a result. The larger percentage of the abandoned ills of the flesh yield to this treatment. There are no medicines necessary, neither does this book recommend drugs.

We have tried the various systems claiming to possess all there is in the healing art, demonstrated to our satisfaction that there is a better way to relieve affliction in the way of disease than is known by either of the medical schools, and that this book will contain the full and complete science of healing without drugs, and that no individual need falter to use it according to the instructions contained herein.

The philosophy concerning this method of healing can not be overthrown, and will be accepted wherever practiced, and by all who desire to be cured or cure others without let or hindrance. It needs no legislative bolstering up. It carries with it weight of evidence of its efficacy in every trial, properly applied. There is no harm or bad effects following a right use of this science, if used according to the directions given in this book. Each move or manipulation is shown and fully explained herein, so that nothing is wanting to make this work attractive and useful to the community adopting it, and the physicians will soon become its warmest advocates.

Osteopathy is a term applied to a particular process of healing wherein the bones of the human system are regarded as, in some way, factors in producing that condition called disease. This may be further defined by regarding the definition of the parts of the word itself, although strictly speaking, misapplied. The word *os* means mouth, bone, and is a symbol for osmium, a heavy metallic element belonging to the platinum group. *Osteo* is a prefix, signifying connection with or relating to bone, and *pathos*, the faculty of arousing sympathy, emotion, passion, suffering, feeling—disease. The most reasonable definition of the word is, resulting from

obstruction. Hence Osteopathy is a term that is used to designate pathological conditions, caused by the interrupted flow of the fluids of the body, or pressure due to contracted muscle or muscles, or irritation of nerves or nerve centers, paralyzing nerve function.

This may be better understood by stating that disease is the result of partial or complete stasis of the fluids in general or particular, anywhere in the body, and the result, name or nature is wholly due to the parts or tissue involved.

That disease should result from pressure, and that a physiological condition can be established by taking off the pressure, seems hard to believe, after having had centuries of instruction otherwise. Any discovery out of the ordinary receives little attention, especially when old ideas are deeply rooted and become a part of ourselves. To presume, in the face of long established, time-honored methods, stereotyped customs, that we are "weighed in the balances and found wanting" in the real facts, starts up a feeling of resentment in us that knows no bounds, and we are ready to rise up in our strength, dignified manhood, and denounce it as an interloper, a fraud, unworthy the consideration of intelligence, and are ready to stamp it out of existence, were it possible, simply because it does not comport with our long-cherished views. This has been the history of mankind in all of the ages past. Humanity is the same now it always was, and any new method or principle out of the common course of events must expect opposition until it proves itself worthy a place in the archives of established usages—becomes a necessity, in harmony with general thought. Then, if truly meritorious, the *new* acquisition takes place alongside of the great mass of material that the world regards with complacency. That Osteopathy should be an exception in this regard should not be presumed. We do not anticipate miraculous transitions of mentality all of a sudden, but we regard this step as one that is greatly in advance, deserving of more attention, based upon stronger claims, more easily understood, far more efficacious in results,

decidedly more in line with reason, philosophy; and fraught with better satisfaction than any method, or all of the means, ever devised or used by professed scientific men, or the various schools, in any or all of the ages past, in relieving humanity of physical sufferings or pathological conditions—and that, too, in the least harmful manner. This will be found true after you shall have completely mastered the science and applied it to the various and multifarious pathological states recognized as disease.

Whilst we are greatly obliged and truly thankful that Dr. Gowers classified the action of the nervous system, and that Dr. A. T. Still first promulgated to the world the possibility of complete or partial dislocation of bone or bones producing pain, disease, yet we are not willing to concede to either one the honor of originating or developing the philosophy of cure to its present standing, or application to the cure of disease. Necessity, in this science, as in all other relationships in life, is the mother of inventions. When it is considered that those who assumed the premise that *all* diseases were curable by the application of Osteopathic principles, it required more than one brain to formulate and devise means or improvise manipulations adaptable to the various pathological conditions found at various times in the human system—all of them presenting different symptoms, different pathological states, in different parts of the body, in different climates, latitudes, in different races, at different ages, and in different temperaments, involving altogether different structures. It has taken no little time, much thought, a fair understanding of the system, anatomically, physiologically—with much patience, a host of *patients*, labor, comparison, will-power, mechanism, and perseverance by many minds—to demonstrate the exact status of this science. This is, then, the result of a combination of mental, as well as physical forces, formulated and systematized so that it can be reasonably explained and elucidated and applied as a means, and in most cases of cure, that is, to say the least of it, surprising.

The *how* it does it seems to be the hardest thing to show the mass of people. That they should demand it—an explanation and a perfect elucidation of its workings—is a greater mystery than the science itself. They gulp down any sort of a “bolus” from other doctors, and never for a moment think of asking a reason; “that is medicine—we are used to it—it physics, pukes, or relieves pain”—that is all the patient desires. But let some one propose to relieve pain, cure disease, by a mechanical process—adjust the system to itself, take off the pressure, or remove the *cause* of his ailment—he is at once denounced as a quack, a fraud, unworthy to do business in a civilized community; and persecuted, maligned, insulted, prosecuted, and that, too, by the very men who, if called upon to “give a reason for the hope (of a cure) within them,” could not do so. We are not shooting at random along these lines, for we know whereof we affirm, and claim to be able to demonstrate the efficacy of the practice of Osteopathy, and to know that medication, as it is understood, practiced, applied, is not comparable in any respect with Osteopathy. That there is efficacy in certain elements, and certain antidotes to poisons, we hesitate not to affirm, and that there are times when these should be used; but that there is power in medicine to cure diseases seems altogether untenable, unphilosophic, unreasonable and unnatural. Our practice for years has proven the utter fallibility of curing disease by the use of drugs. Elements supplied, when needed, should be done as you would supply food, not as a medicine—in no instance whatever.

It has taken thirty-five hundred years (since the days of Asa) to educate the people up to the idea that medicines taken into the system did in some way cure disease, notwithstanding it is said that “Asa, when he was sick, resorted to his physician instead of to his God, and he slept with his fathers”; and people for the very same reason have gone to BED too EARLY in consequence of resorting to *physicians*. There seems to be no let-up in that direction, and the people continue to



believe that medicines are essential to the cure of their diseases. To argue to the contrary seems futile. The dark pall that broods over the world to-day, the wand that holds in surveillance vile, and makes slaves of us all, rests in and originates from education along this mysterious pathway, and like a weird, spectral ghost, holds enwrapped in its strong and sinewy arms, with a deathlike embrace, every nation, race and tribe of people.

To lift the veil, to uncover and expose to view this mighty, time-honored custom, and with one fell stroke erase it from the pages of history, blot it out of the memory of man, and give it no place, and discard it as unworthy of further consideration, to declare annihilation, to end its ravages, seems herculean to say the least of it. The hardest thing to induce mankind to do is "to repent," to acknowledge their wrongs. It is so easy to float with the tide that we seldom make an effort to change our course, and the large majority of mankind float on down the stream, out into the great ocean of life, regardless and unmindful of how they do so. All down the ages men have arisen who have "moved the waters"—produced a ripple and started streams which have influenced the direction of the current of human thought; and these, like oases in the desert, created an interest that lifted the race a step higher. Great reformers in all ages have been the beacon lights that led the nations out of bondage. The discovery of forces, the union of substances newly discovered, the combination of elements unthought of before, have evolved results that bring us to a realization of our advancement, ascending higher and higher into a clearer light. This has been the case in almost every department of thought, except the restoration of our own bodies from physical ills; in this, stereotyped customs have engulfed the people for ages. While a knowledge of the structure of the human system has increased, its relationships with itself and the rest of the world, yet a scientific, clear, unmistakable method of righting our physical wrongs—in a word, curing our ills—

seems to have been sadly neglected, and in the strife to present something new, or to discover some "fountain of life" that would perpetuate existence, the results are confusion worse confounded, and the question still rings in our ears, "Is there no balm in Gilead, is there no physician there?" After all our experience, it is quite well decided that the so-called medicine theories are frauds. The uncertainties of the actions of medicines are almost universally recognized.

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#### THE PHILOSOPHY OF APPLICATION OF THESE PRINCIPLES.

The reader is wont to ask, "How can you apply Osteopathy to the treatment of all diseases?" The very reason that the vendor of his "patent medicine" recommended it to the cure of all diseases, no matter of what character or type or stage, at once brought to mind the utter impossibility of its application in the cure of anything. While in the instance named there is but one thing to consider, and that is that disease is not dependent upon a supposed "materies morbi," that can be neutralized by a compound, or a single drug, but upon a series of causes that ultimately culminate in impediment or obstruction of the circulation of vital and other fluids in the *body*, that no compound or medicine can possibly reach, and that can only be removed by a physical effort on the part of self or some one else. This is the reason that there is such a wide range of usefulness for the practice or application of Osteopathy in the practice of the healing art. There is scarcely a pathological condition thought of, discovered to exist, or that ever will exist, wherein this science will not be usefully and necessarily demanded. It is kaleidoscopic in its application to the cure of diseases or pathological conditions. And while we shall have occasion to name a great many diseases, the application of the principles represented in this book will be apparent when once applied.

There are many things that we shall never know, and we shall often be astonished at results in our application of this philosophy, but the end will justify the means employed, if



PLATE I.*b.*—Continuation of Plate I.*a.*



properly done, and conditions thought to be incurable will be seen to change for the better as these principles are applied. To even relieve and cure a few cases of acute or chronic suffering would seem to justify the necessity of presenting this book, but when this is done without doubt, and hundreds of conditions are alike changed satisfactorily to both applicant and manipulator, the value of the science will increase in estimation, wherever known and by whomsoever utilized. It is not a "try system," and try again, but a *reliable certainty*, applicable in all pathological conditions, an aid at least in ameliorating the ills that "flesh is heir to" in mankind. The medical profession will soon adopt its philosophy, apply it in their practice, and often wonder why they had not applied it long ago. Results will satisfy all of its merit, and prejudice will wane as investigation progresses. It only needs proof of efficacy, and that will come by application, to convince the medical profession of the importance of this simple method of cure, and gain their hearty support of it.

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#### THE ULTIMATE OR PHYSIOLOGICAL CONSTITUENTS OF THE BODY.

When it is known that the "blood is the life of man," and that it contains sixteen elements, and that these are combined in various quantities to form the compounds of all the tissues of the body, and that but *three* of these, viz.: Oxygen, nitrogen and hydrogen, occur in their free state, it will dawn upon the reader that to be a proper physical being called man, these elements must exist in the body. The formation of these various compounds in the body begins in and is largely derivable from the food eaten. The manufacture of these elements from the food is superintended and controlled by the organic nervous system. This nervous system originates in the *head*. It is distributed all over, through, in, to, and everywhere in every tissue of the body. The circulation of the fluids of the body is under the supervision of this system of nerves. Culminating in large numbers, and terminating at



the upper and posterior part of the cervical region, they constitute the so-called "vaso-motor nervous system," and here we are enabled to start forces that control every artery, capillary and tube that convey fluid, throughout the whole physical organism, regulating even the action of the heart. This same nervous system permeates every gland, controls the secretion therein, superintending the combination of the various parts of the body, so that no "schism" occurs—that is, in a natural way. These various elements are manufactured from the food eaten, and made soluble, miscible, affinitized by the special direction and control in every part of the body by the sympathetic nervous system, having the sole management of the "house we live in."

To understand this essential department fully, thoroughly, simplifies every effort on our part to know the process of these unrevealed processes that are constantly going on in our bodies, and account for the repair and waste that constantly go on in this marvelous structure, denominated the "form divine." A system of healing, based on a knowledge of the various constituents of which this body is composed, a knowledge of each and every part; a knowledge of the laws governing its every change, the combinations of these various elements in every part of the body; the manufacture of this and that element and their especial part to be carried to and deposited in, so much of this and so much of that particular element, and to form each and every part in a certain form and maintain it in that form for "three score and ten years," is surely an interesting subject to study. And when we undertake to explain to the reader that disease exists only as a consequence of incoordination somewhere in the system with every other part, and to cure our ills by coordinating the various parts of the body with every other part, cures disease, and that without drugs, we are confronted with opposition of the fiercest character, and if we lived only two hundred years earlier, our carcass would receive the same fate as others have for even expressing simpler truths. Before we are

through with this subject we hope to make it so clear that all may see it in its true light. We must understand that the blood contains all of the elements. These elements are distributed everywhere through the arterial system.

When there are no obstructions, and the fluids of the body everywhere circulate, the nervous systems performing their functions normally, the changes occur naturally, and the elimination is not interfered with, is there any reason why that sort of a system is not healthy? But suppose undue pressure is made somewhere, that impediment to the normal flow of the fluids should occur, does it not stand to reason that there would necessarily be an accumulation at that particular part; that pressure would be at once produced right there, and if continued, increase, and that this would involve other structures in that neighborhood, continuing to increase and spread until there existed that condition we call congestion? If this same thing occurred in a stream of water, and the supply from above continued, what would we call it? A flood, wouldn't we? And suppose we raised the embankment higher, would not our fluid (water) accumulate until it covered all the country up to the very source of the fountain from whence it originated? This illustration is surely simple enough to be understood and comprehended by the simplest of observers. To further illustrate this simple, though unknown proposition by the masses (including many so-called physicians), we raise the curtain still higher and throw in a greater flood of light. Suppose this accumulation is in some important blood vessel?—what then? The accumulation would necessarily press against the walls of the vessel until expansion (dilatation) took place, and if in a vein we would call it venous congestion, or varicosity of veins. If in an artery, we would name it aneurism. We therefore unhesitatingly assert that almost every pathological condition described under the various names in all of our leading medical books is traceable to this state (barring poisons—and these do indirectly by paralyzing *nerve centers*, and these being unable to control mobility

of the parts to which they are distributed, congestion ensues, and always in proportion to the centers involved). The importance of the circulation of all of the fluids of the body, from its introduction into the system until it passes out, can not be too highly considered, if health be a desideratum. The elements are held in solution in the watery fluid of the body, and this constitutes about seventy per cent. of the whole body. All of the inorganic compounds are held in solution in the watery portions of the blood.

The organic constituents of the body consist of urea, uric acid, xanthin, hypoxanthin, hippuric acid, kreatin, lactic acid, lecithin, neurin, cerebrin, leucin, tyrosin, and cholesterolin. These substances are essential to the elaboration of cells. We could not exist without these elements. It is a strange, but singular fact, that the exact proportion or equivalents of these substances are maintained by supply and demand, and that all these constituents are divisible into proximate elements, principles and ferments, and that they are normally prepared in the body by the glandular system. Hence to furnish all of these elements, to keep up the supply, to distribute them to the various parts of the body where they belong, to build up this and that bone or muscle, due regard must be had to the proper adjustment of the system to itself, so that there be no undue pressure anywhere, to interfere with normal action of every part. The importance of these elements will become more apparent when the reader is informed that the offices of the various parts of the body are influenced wholly by the presence of these elements, and that the sympathetic nervous system superintends the manufacture of these chemical constituents from the material in the body itself, received through the food or the atmosphere by inhalation or absorption, and that the five hundred and twelve muscles of our body would become stiffened and immobile without that element called Kreatin. This substance contains carbon, oxygen, hydrogen and nitrogen, chemically combined in due proportion. Then, without Hemoglobin, there might be cir-

ulation of the fluids throughout the body for a time, but it would soon be without oxygen, for oxygenation could not take place without this substance. In order to have impulse through the nerves we must have that element called Cerebrin, and an essential to the communication of thought is found in Lecithin and Phrenosin. When we consider that six of the elements of the body are contained in Albumen, it is essential that there be an assimilation of it, but without Tyrosin and Leucin there would be none, nor would there be epithelial cells; and in the elimination of dead cells it is necessary that Xanthin be present. Cholesterin has for its office the supervision of the growth of young cells and the removal of old ones. The oxygenation of the cells requires the presence of Cystin and Sulphur, together with its preceding presence of Hemoglobin. Protagon assists in the assimilation of albumen, and Inosit is necessary to the fluidization of lymph and the flexibility of muscular tissue.

These particular and wonderful chemical constituents, all essential to the existence of man as he is to-day, are all evolved from the blood, and when all parts of the system are performing their proper functions these products make up the sum total of the physical organism, but when outside influences are brought to bear and new compounds introduced among them, untold mischief results, all due to incompatibility. This is the principal reason why medicines do so much harm, and why the true physiologist so persistently opposes them. The long-cherished theory that some peculiar materies morbi, acrid humors, malaria, etc., in the blood, cause disease, has no foundation in fact, and in the light of what we here assert and fully demonstrate, does not appear reasonable-or possible. Theories must give way to facts. We most earnestly and respectfully assert that when every part of our physical system is properly adjusted, so that a perfectly free circulation of all of the fluids of the body, in the body, exist, we have health. We further assert that no sort of so-called Bacteria causes disease, and that they do not, nor



can they exist in healthy blood, but are found only in morbidic, broken-down tissue, always the result of the impediment somewhere in the normal circulation of some or all of the fluids in the parts where said "bugs" are found. And we further assert that when a proper restoration of the circulation is brought about, the proper hygienic environments prevail, the poisons are eliminated. To clothe, to enshroud, disease with a mantel of mysterious morbidic matter, and to theorize on mooted opinions, give us no satisfaction.

Contrast, if you please, the time-worn repetitions of antiquated theories which have been forced upon the people by the learned doctors, with the plain, tangible, physiological facts, illustrated and fully demonstrated, and which any one may verify with perfect satisfaction, and you will conclude that we have sufficient reason to present our claims, principles, practice, to the world as the most rational, satisfactory, perfect system of healing ever devised or invented, supposed or suggested by the learned in all of the ages past! This is no dream, no idle speculation, no myth, no mystery, but the plain, simple, unvarnished, heaven-born *truth*, the marvelous light that is destined to bless the unborn nations now in the womb of nature, and not only that, but lift the dark cloud from the living habitations, where misery, disease and death brood over them. Let the world know that something reasonable, logical, true, stands with open arms to lead them out of bondage from the agonies of disease, and place them on freedom's side of life, to breathe without pain or distress the free air of heaven, without drugs, and then the line of march will begin—rejoicing will be the watchword instead of despair. That there ever should have been such a delusion as that held out by medical men to the afflicted that medicines cure disease, seems appalling! That a necessity should arise for some foreign substance, wholly incompatible with every tissue, every element in the body, to cure disease, is altogether unreasonable, unphilosophical. Regarding the elements that make up the physical organism as sufficient, not only in num-





PLATE II.—Treatment of Side of Neck Muscles.



ber, form, size, but properly proportioned, combined, and that any addition thereto is a source of disturbance, confusion, causing increased effort or chemical change, where is the logic, the reason, the necessity of such agencies? Especially when the proper adjustment of the system to itself, the coordination of every part, is restored without? It is only hypothesis, to say the least of it, that medicines benefit or in any way supply the demand. In the large majority of instances they are injurious. To assume that any one of the various systems of medicine is correct, contradicts the assumption of the claimants of all the rest. That they are all fallible places them on a level, and to disprove the efficacy of the one disproves them all. The world-renowned Dr. Hufeland made this remarkable statement once in his work: "Man has two great enemies to fight—Sickness and Doctors." He might have added "drugs." The famed, the great Professor Wunderlich wrote in 1852: "Instead of investigation, we find Empiricism; instead of facts, we have *theories*; instead of correct conclusions, *dogmatic rules*; instead of ascertaining *causes*, we have useless talk." And Dr. Richter, in his work on "Medicine," said: "No science is so full of erroneous conclusions, mistakes, lies, dreams, as the so-called Science of Medicine!" Many who would get well if left alone, are killed by the art of doctors. If one sees a physician take a pen to write a prescription, he feels like saying: "Lord, forgive him, for he knows not what he does." We are wont to say that had there never been doctors, mortality, prior to a good old age, would have been rare. We might quote authorities denouncing the use of medicines, but the masses already know too well that poisons kill, and that they are uncertain commodities in a diseased stomach.

In the course of investigation in the field of this science we desire to say to the reader that our design in writing such a work is not to advance theories, but to present facts, and that what this volume contains can be relied upon as correct.

The illustrations, with the descriptions of each illustra-

tion, reveal the most marvelous system of healing—or showing how nature heals—ever imagined. Nothing like an elaboration of all of the principles and the philosophy of this method has ever appeared in print, so that a correct understanding or an approach thereto could be had, and we are assured that, when the physician or the intelligent layman reads the pages following, a revelation of the whole science will stare him in the face and appeal to his or her judgment as tangible, rational, plausible, practical, applicable, correct. We have no pusillanimous crouching nor egotistic dogmatism to thrust; instead, plain, unvarnished delineations of great, broad, philosophical principles which lie on the very surface and become fuller, larger, more attractive, satisfying the more they are studied, unfolded, learned. To assert that *all* of *Osteopathy* is *now* known, seems to the thinking mind untruth, for a science is only “*a knowledge of facts,*” and to say we have all of the knowledge of all of the facts of any particular set of agencies is to assume divine power, and it is not the province of humanity to assume. Osteopathy, as expressed at one time by Dr. A. T. Still, “was like a squirrel in a hole in a tree, with its ears or the point of its tail just outside—the body was not yet discovered.” While this was a crude way to express it, it had some semblance of truth in it.

There have been such jargon and confusion, and so much contradiction in undertaking to define what is claimed for Osteopathy, that I refrain from the strife by simply defining *what it does*, and how to apply it to and for the cure of disease. One remedy after another has been extolled for its wonderful properties in the cure of disease, held mighty sway for a brief period, and been superseded by some other supposed to be more potent; and others in like manner, until the pages of ponderous volumes have been filled with remedies called medicines, and the brains of great and learned physicians have been taxed to their utmost to learn which should be used in the various diseases that afflict mankind. Each particular symptom has been the suggestion to try a special

drug, until symptoms have increased, remedies failed, and the long list of remedies and symptoms continue to increase, until now "the books will hardly contain" the symptoms and the remedies prescribed for human ills. Can any one of ordinary intelligence come to any other conclusion than that the whole so-called theory of medicine is a *stupendous fraud*? Can any one wonder that four years is a very limited term to learn medicine? And when it is learned, what is there in it worthy a rational man's consideration for one moment? Confusion, worse confounded! Uncertainty, disappointment, confront the practitioner of any and all of the various systems which presume to regard medicines as essential to the cure of disease!

It would seem that enough has been said, enough experienced by the afflicted to convince any rational person that, as medicines and the knowledge of their effects, their therapeutic properties, become known by the various practitioners of the various systems of medicine, a mitigation of the suffering, a shortening of the time that disease holds sway, should be secured; that the rate of mortality should lessen, and that the acute affections should be cured, and chronic diseases thwarted entirely. But all of the boasted efficacy of remedies, glowing advertisements of cures performed, or said to have been, have for their object the increase of the exchequer of the advertiser, and disease, like an armed foe, stalks forth abroad in the land, laying hold of the innocent as well as the stalwart sinner, and, despite the dosings of *potent* remedies, they soon become "food for worms."

If we had nothing better to offer humanity than a "bundle of lies," our conscientiousness would compel us to relinquish our claims as a contributor to the already overburdened effort to do something to arrest, to delay the visitations of the wielder of the "scythe of time," and we would cease our further efforts in that direction now and forever. But, having searched the labyrinthian records adown the ages for something reasonable, something that had power to conquer, or



hold in check the "fell destroyer," and at least give to the world a breathing spell, and searched in vain in and among the archives of ancient and modern lore, along the lines where medicines have made their dark and sickening records, I had almost concluded to abandon the effort, until, like the "prodigal son," "I came to myself," found that there is in every human being sufficient self-sustaining power, properly coordinated, to resist all of the ills that "flesh is heir to," if we only knew how to set it in order when, from any cause, it were out of order. And having learned that even this could be done by the adjustment of the system to itself, we renounced the uncertainty and became an enthusiast and an advocate and practitioner of the certainty. To the individual who has watched with bated breath to see the effects of a dose of medicine to result favorably, and writhe in agonies of disappointment—to see the patient die in agony that we now could avert—is only compensated by the fact that in teaching others the better way, we may preclude the possibility of such from experiencing the same kind of disappointment, snatch the sufferer from the immediate jaws of death, reinstate him to his former healthful condition, save a soul from premature death and its consequences—for a time at least. How many children are sacrificed every year by the use of medicines, that might be saved, cured, by the application of common-sense principles, that this book teaches? We rejoice in the fact that we have learned how to relieve so many so easily, quickly, that other systems utterly failed to even benefit. These simple means may be learned by all who can tell the difference between good and evil, and the ignorance of medical men will become so manifest that all may see it. To persecute and prosecute persons for being able to relieve their fellow-creatures will then become a thing of the past, and every community will demand of the practitioner a reason for his methods of cure.

In some localities, those who learn to treat disease and cure people by this *new method*, will be maligned, abused,

persecuted, and possibly prosecuted by the doctors. That was the case even with the Great Teacher, the Divine Healer—Christ. Not only did the Healer receive indignity from the hands of the scientists, but the poor victim, as soon as it was ascertained that he had received benefit from a source out of the ordinary and prescribed code, shared the same fate, if not a worse abuse. It is even so now, after a lapse of nearly 2000 years, and the “assistors of nature,” as they style themselves, and especially that *honorable body, the State Board of Health* (?), will deny the new healer the right to practice his art on the ground of being *irregular!*—for lack of being *recognized* by their Code of Ethics. It is an established fact that, whenever any man arose and advanced or advocated a clearer idea, a clearer vision or more plausible method of doing a thing than the rest of his fellows, announced a better way, brought it far enough forward to demonstrate its superiority over established customs, the scientists, the representatives of established theories and customs, began to malign, to abuse, to oppose. It is reasonable that this should continue, for the same spirit of envy rankles in mankind as always did, and the spirit of persecution is as manifest now against a *truth* by the *false* as ever. It matters not how many a poor misfortunate has suffered at the hands of physicians, been consigned to linger with some painful affliction through long years—the remainder of their days, and recovered under the new *regime*, that jealous hatred in the dominant schools of healers continues to crop out, to grow, and to reek its vituperations against the *new* science, and thrust its venomous sting into its victim with a zeal worthy only of the right. Everything that envy and hatred could invent, every deep-laid scheme, has been used against every worthy advancement in all of the ages past, including religion itself, as well as the advancement in knowledge of any new discovery made or proposed to be promulgated. That there should be such a spirit seems so unreasonable, so irreconcilable to the spirit of common honesty, is the strangest phe-

nomenon imaginable, and contrary to the very interest of humanity. There are some men whose minds are so blunted with prejudice, the child of ignorance, and others so self-opinionated, that nothing but the very thunderbolts of the crack of doom can ever arouse them to a sense of justice. Malignity stands out in every wrinkle on their venomous features, and springs into hideous and unsightly visage in every shade and shadow of their existence. Such people are not the sort we expect to influence for good—they are sealed—their place is already assigned—their sins “go beforehand”; but to arouse to consideration the respectable of the medical profession, and to have them lay aside their moss-covered prejudice and investigate the character of the claims of this new science, we heartily desire.

We know that if the least spark of the shimmerings from the marvelous light of this science should cross their benighted pathway, they can not withstand the magical warmth of its genial rays, but will learn what it meaneth.

If we could draw the curtain aside that hides the real facts from the people regarding the *laws* “regulating the practice of medicine,” so that they could perceive that, instead of said laws protecting the people, they are simply protecting the doctors, legalizing them in the administration of poisons, it would throw a different light on the whole subject. What right has any body of men to prescribe another’s choice as to what physician he or she shall employ, any more than to prescribe what church he or she shall attend? What right has the Legislature to make laws to legalize the use of poison, under the pretense of it being a medicine? The right of choice is the strongest principle in the whole range of human action. The *will* of man as regards his own welfare is the most sacred right in all the realms of his physical existence, and for a law to be palmed off on the people just because a *few* poison venders formulate it and lobby it through the legislative branches of the law-making powers, to satisfy the perverted malice of designing men, is to perpetrate upon the



PLATE III.—Stretching of Neck Muscles.





people the grandest farce conceivable or imaginable. What do such enactments strike at? The very foundation of human liberty; the sacred rights of man to use the gifts or intelligence that God has endowed him with, and the skill which he himself has acquired. Such proceedings partake of the very nature of the "star chamber," whose decrees led to a revolution and the death of a great king of England on the *scaffold*. The very idea of there being such a thing—an Executionary Board in any civilized State—a *Medical Board of Health* to control and regulate a set of *poison vendors*, and to have their powers extended to ostracize everybody else who is not competent to administer poisons to the sick! Where is the justice in legalizing a class of people to deal out poisons to persons simply because they are diseased? While the masses are slow to act, slow to realize their privileges, yet we venture to predict that when the people learn that they can be cured without poisons introduced into their systems, the medical Code of Ethics, as it now is, will lose its influence, and the statute-makers will erase from its pages the disgraceful, unjust class-laws now on them, and leave the people the *right of choice* as to their manner or method of being treated when sick. When it is known that sickness is largely the result of ignorance on the part of the individual, or those having supervision of them, the thought will turn to the education of the masses along the lines of information in regard to the physiology of the body, the laws that govern it, both in health and disease, and not confide in the limited and selfish dictations of a few designing men, denominated "*Health Boards*." Our object in writing this book is to free the mind from every form of slavery, remove from our environments every vestige of influence that tends to circumscribe the powers within us, start the forces that are God-given naturally, remove all sources of irritation from the conception to the last hour of physical life, and then we may expect a race to come forth whose actions will harmonize with each other, and strife and animosity be wiped out of existence.

To cure diseases without medicine to the medical profession seems unreasonable from the fact that too much stress has been put upon the modus operandi of drugs, and the prevailing belief is that unless the sick take medicine his recovery from disease is doubtful, to say the least of it, and if he should die without medication, and especially from some one recognized by the Board of Health, the friends of the patient have committed a crime, or an unpardonable offense. Habit has so fixed itself on the mind of the people, and custom has so stereotyped the habit, that it is hard to erase these long-cherished usages. We hope that those who read and study this book may see and know that medicines have no place in the curriculum of treating the afflicted when they are said to be sick. Wherever prejudice is laid aside, this method investigated and the results compared, the decision will be on the side of recovery without drugs. When the reader shall have learned that diseases of the most malignant type and under the most unfavorable circumstances yield to this method of treatment, prejudice will begin to wane. But so "long as our craft is in danger" (drug systems), there will be a howl. The people, without knowing anything of the science, or the method practiced, have been wont to associate this method of cure with that of some of the mental methods of cure; but to such we would remark that Osteopathy is a system of manipulations which adjust the human system to itself, taking off the unnecessary pressure, removing obstructions wherever present, any and every where, in or on the body, thereby permitting the circulation of the fluids of the body to continue uninterrupted, as is the case when the body is in a normal state. There are no secret processes to mystify the patients, nor mental mumbling of the so-called healer, no secret electrical or magnetic influence that is hidden away in the sleeves of the operator; but a simple, matter-of-fact adjustment of the system to itself, resulting in restitution of mental and physical forces that we recognize in health. There are thousands already who bear testimony to the efficacy of

this most rational method of healing. We shall endeavor to make it so clear, plain and comprehensive that any one of ordinary intelligence may apply it to the cure of every form and condition known as disease. The medical fraternity will be astonished beyond measure when they shall have learned that diseases considered incurable by any known drug, are readily cured by the merest tyro in Osteopathy!

The domestic who administers a drug does not in any way change the effect of it. The proper adjustment of the system to itself, by whomsoever qualified, mentally or physically, to do so, does not change the result; and when the common people learn that diseases can be cured by this method, and not run the risk of being killed by medicine, however scientifically administered, is it not reasonable that they will adopt it? Who, then, will find fault? What necessity, then, of having "statute regulations"? Every man can relieve his fellow-man whenever occasion demands, and no time lost sending for a "nature-assister" called a doctor, to give medicine and expect results.

As long as the medical profession continue to hunt "bugs" and attribute the diseases to them, advancement will be impeded, but when it is known that healthy blood excludes such a possibility, and that healthy blood results from normal circulation, they will cease their search for *new bugs*, or bug theories, and go to work to learn how to promote the normal circulation of the blood and other fluids of the body—in itself causing every disease known to mankind. The Bacteria or Germ theory of disease is now the great fad of the nineteenth century. The Malaria theory was twenty-five years ago the prime cause of disease in this country, and quinine the remedy. Virchow advocated the Cell theory of disease, and asserted that in health the cells were healthy, and in disease they were diseased. Wonderful light this! The question as to *how* they got wrong was never demonstrated, neither did any man ever discover a remedy to right them, nor is there a man in all of the medical ranks who



has ever dared to propose a remedy or series of remedies that can be relied upon that will set them right when wrong—in the way of medicine, whether mineral or vegetable. The Germ theory is surely the shallowest idea ever advanced, yet the whole medical profession bases its whole theory of disease on it, notwithstanding the signal failures on every hand. To presume to claim that any theory of medicine has a shadow of a right to claim a scientific basis would be such a palpable contradiction of facts that no sensible one in the ranks of any one of them would dare to assume. The truth is, the whole so-called science is a stupendous jargon of empiricism, hypothesis and experimentation, changing every one or two decades to something else, or basing their theory of cause on something else than what to them seemed established, and per consequence change their remedies to suit their new theories. Now who can truthfully assert that such a heterogeneous course has any semblance of reliability? Every new drug added to the list of therapeutics is blazoned forth in *red ink* and regarded as superior to every predecessor, and the old ones laid on the shelf as a back number—super-seded. What do you think of such a system? Can you afford to rely upon it when disease lays hold on your nearest and dearest friend, a husband, a wife, a darling child, and a loving and beloved son or daughter? The “try systems” are exceedingly doubtful, to say the least of them. After two thousand years of such jargon, uncertainty, and signal failures, these very same medicine vendors boast of being the arbiters of health in every community—the *Regular Profession*! These are the men who denounce as “*quacks*” every system that differs from or prescribes for the sick differently from their prescribed rules, and not only persecute, but threaten and often do prosecute the offender, and denounce him as being unworthy the rights of citizenship in any community, and recommend punishment and excommunication from civilized society! Yet they must remain to deal out their poisons to innocent, helpless victims without let or hin-

drance as the arbiters of health and happiness! These are the very men who hound Legislatures, armed with and recommending proscriptive legislative enactments to "regulate the practice of medicine," and claim to "protect the masses from infamous quackery," when they are the guilty parties themselves. A system so rotten that it needs legal protection is surely far gone into degeneracy, and should quietly die a natural death.

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#### THE WARFARE AMONG DOCTORS STILL EXISTS.

Doctors of the same school are frequently and almost incessantly calumniating each other, and no matter how well selected the remedy in a given case, if another doctor is called he is wont to remark that "this or that would have done better," and the patient "would have done better had the former doctor known his business." Diagnosis all wrong—treatment inappropriate. The family is frequently reproved for calling "that quack." The jealousy, ignorance, impudence and selfishness—rivalry, that exist among doctors even of the same school are disgraceful, but between opposite methods they are simply the culmination of premeditated hatred, often expressed in unbecoming qualifying adjectives of intense emphasis, reptilious in character. No other professionals revel in such vituperative methods. Why the doctors of the various schools do so is a mystery. If the doctor loved his calling, not simply for the money in it, and that he tries to get out of it, it would engender in him quite a different spirit. To love a thing there must be implicit confidence in it; then he will respect the object of affection, then it will not be regarded as a "dead letter"—as a degraded and hideous, grinning skeleton, but worthy his noblest efforts to elevate it to its highest possible sphere.

The large majority of the practitioners of to-day have absolutely no confidence in medicine, for the curative properties almost always leave him in the lurch, and their suffering



patients consoled with the idea of simply "temporary relief," and morphine or other sedative or pain-paralyzer administered, and the patient informed that there is "no cure for him," and he may content himself to bear his affliction as long as he or she lives. The result is generally understood. It is generally a money consideration, and the doctor aims to get out of his suffering, deluded patient what money he can, and then recommend him to some other one of his kith, or recommend "climate" as the last resort! It is only a question of how much he can get out of his victim in many instances, and he crawls, snake-like, to the well-to-do, the rich, looks down on the poor as a misfortunate, and his soul, if he possesses any, is in his pocket, and he worships at the altar of Mammon, and to that all of his energies are bent—the great cause of truth and humanity, and a noble profession (that of relieving the afflicted), ignored, everything noble, holy, and sacred trampled upon. There is nothing more holy in life than to succor humanity from affliction! What is more glorious, and what recompense equals the gratitude that is often seen in the tear-bedewed, quivering eye and lip of the one relieved? If all our aims are happiness, then how happy any one should be if he is permitted to be an instrument of inestimable good to his fellowmen by the rendition of his best efforts in doing good to the afflicted! Life at best has its sorrows, and if everybody would strive to alleviate the condition of others, earth would "blossom as the rose," and the "New Heaven" would environ the race!

To be happy, we must get back to *first principles*, and cease to follow *opinions*. Then our steps will be guided by the *eternal laws of right*. Here is where we would have all to return—in the matter of health as well as regards matters of faith; then strife will have no room to distract or mar our happiness. All should be interested in this.



PLATE IV.—Vibration of Neck Muscles, Patient Recumbent.



## CAN THIS SCIENCE BE RELIED ON IN EMERGENCIES?

We would remark in the most emphatic terms, we have found it so for five years, after having tried all other means for over *thirty-five* years. We would not have the reader to understand that any and all methods combined are universally successful in averting death under certain circumstances and conditions, but we do say that, more than any other system now in vogue, known or practiced by anybody to cure disease, Osteopathy is nearer a universal means of relief and cure of the ills of the flesh than any other ever tried, used or employed. I especially emphasize the necessity of recognizing the tissue elements, for without them—which make up the body—all of the manipulations known would be ineffectual in curing diseases caused by lack of them.

That there is good in something else, and many things now in vogue, I pretend not to deny. That universality of application to every pathological state exists only in what is now recognized as Osteopathy, I pretend not to claim, yet the principles that underlie all remedial agencies do exist, and may be and are appropriate in all, there is no denying. The methods used are sometimes at variance with results intended, when, if *the how* to apply it were understood, results would be different—generally satisfactory.

Surgery occupies an important place in the treatment successfully of many pathological conditions, that many Osteopaths are wont to ignore or are wholly ignorant of. The removal of *nerve-depressing influences* require the knife sometimes, and should be recommended and surely used when necessary. Then nature is permitted to assert itself, and the result is a cure, when, if the operation had not been performed, the case would have continued. The egotistic dogmatist often manifests obstinate imbecility, to his or the patient's disadvantage. When it is fully understood that "taking off the pressure" is the text of our discourse, and that it is essential to a cure, the means will be used to do so in the best manner possible. The measures recommended in



this work are not mere experiments, but the result of matured thought and actual experience.

There are efforts made to write out what "Osteopathy means" by incompetent persons—men whose limitations are perceptibly circumscribed mentally, and the marks of deficiency, intellectually, show in every line, on every page, in every sentence; so that distrust, rather than confidence, is created in the science, when, if intelligence had stood out more conspicuously, Osteopathy would have, ere this, received respectable approval, whereas now its advocacy is regarded as questionable, simply because of its being practiced by such persons as are known to have no qualifications along the lines of the profession practicing the healing art. That is the most remarkable part of this science. Its application, even automatically, surpasses in efficacy other systems supported by the lore of ages! Yet, it is nevertheless a notorious fact that there is need of proper presentation of the great principles governing it to lift it up into the sphere of appreciative individuals, so that its good may be realized by all.

Books and periodicals are being written on this subject, and the masses will soon be in possession of the knowledge of the grandest science discovered relating to, and having for its object the cure of diseases, and that, too, without drugs!

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#### WHAT IS OSTEOPATHIC TREATMENT?

We mean by Osteopathic treatment: The manipulation of the various parts of the body of the person who is afflicted with pain or disease, so as to liberate any and all undue pressure, such as over-contraction of muscles, pressure on a nerve or blood-vessel which, interfering with the normal circulation, produces that condition called disease. These, we contend, produce all of the various phenomena denominated Pathology. Whether the pressure be due to a partial or complete dislocation of a bone, contraction of a muscle, or muscular fiber of one or more muscles, the object of these



manipulations is to *free* the system everywhere, in every part of the body, so that perfect harmony in all parts of the body may exist. To do this, a knowledge of the human system is of first importance to be a successful Osteopath. Whatever pathological condition found anywhere in the system, our motto is, "*take off the pressure,*" in order to a cure. Then we observe returning health in that body, no difference what peculiar name given to the affection. If there is heart trouble, no means relieves until the pressure is removed that produces it. Whether the intercostals are contracted, lessening the chest capacity, or whether the clavicle be drawn down so that pressure is made upon the neck veins, or pressure is made upon the nerves in the neck leading directly to, and controlling the heart's action, or interfering with the normal control; or whether there be congestion of the lungs, producing pressure upon the pericardium or the blood vessels—the thing to be done, to cure, is to take off the pressure.

If there is interference of functional action of a nerve anywhere, that condition is continued as long as there is undue pressure on that nerve. If the muscles contract down on any one or more of the recurrent nerves of the neck, function of that or those nerves is interfered with. If there is headache, due to the capillary congestion, cutting off the flow of blood through the capillaries—or in the tissue in the part, what other thing to be done than taking off the pressure and let the blood or fluids continue? If we have enlarged tonsils, is it not on account of arrest of flow of the blood or other fluids in the tonsils? That being the case, what is the indication? Remove the obstruction. We have a wry neck—the sterno-cleido-mastoid has lost its balance—irritation of the nerve that controls its action exists—contraction ensues, the head is out of balance—the neck is drawn, mobility is difficult or arrested, every muscular fiber in that muscle is crying: Take off the pressure. The mucous membrane is all red, congested, catarrh is present: pain in the frontal sinuses exists—a thin watery exudate is present—soon it thickens—chronic

coryza is the result. What is the matter now? What causes this affection? *Capillary congestion*. The veins of the neck are pressed upon. The jugulars are distended, the return current of blood is obstructed. What is to be done? Take off the pressure—keep it off, and your catarrh gets well. Contraction of the muscular fibers in a muscle tightens an aponeurosis, a tendon, a ligament—this is perhaps drawn across a nerve; it may draw a bone partially out of its relationship, distort a number of muscles, each in turn contracting its fibers, produce undue pressure on nerves, blood vessels, or lymphatics; pain ensues, fluids increase in the parts, pressure increases, pain intensifies—rheumatism ensues, mobility ceases or is lessened, and much disturbance of the whole system is noticeable—perhaps there is increase of temperature, amounting to a fever; the trouble goes on increasing, inflammation ensues, finally breaking down of the tissue begins—suppuration closes the climax! All this in consequence of abnormal pressure—which, if it had been taken off, the whole phenomena, as portrayed, would not have been. We go on down the neck; out of the sides of the cervical vertebrae to nerve bundles that terminate in various muscular fibers on the shoulder, and supply the arm and forearm, wrist and hand with nerves—these are pressed upon by muscular contraction—pain or paralysis ensues. What is the means of relief now but to take off the pressure? We proceed on down the spinal column: important and controlling influences are met with at every step of our advance, and we find that one of the ribs has become distorted, a vertebra is out of line, some muscle is contracted, pain exists in and around the heart, there is dyspepsia, the liver is torpid, cardialgia ensues—acidity of the stomach is perceived—it becomes a common thing to eructate acid. Now, what is the indication? Will medicine correct the difficulty? remove the cause? adjust the distortion? Is it reasonable to expect drugs to correct this difficulty? What is the indication? Answer—Take off the pressure. We pursue our examination along down the ver-

tebrae, and now we are between the scapulae. Here, between the fifth and the sixth vertebra we meet with a set of nerve filaments that seem to control (or supply influences that control) the digestive system; regulate the secretions of the liver, stomach, pancreas, and thereby promote order in digesting the food, and prepare it for absorption, and control the negative forces of the so-called *solar plexus*. Here we reach nerve filaments that, being stimulated by our manipulations, regulate digestion, relieve pain and cure stomach and liver troubles by restoring normal secretion in the organs themselves. Passing on down to the eleventh dorsal vertebra and including the twelfth, we encounter nerve filaments that go directly to the kidneys, control its secretive and eliminating powers, and restore normal action of these marvelous and truly important organs. Descending still further, we at once come to plexuses of nerve filaments that actually control generation, superintending the animal portion of the human body, and exercise influences that are the marvel of all ages and all thought! Through these nerves we connect the animal with the spiritual man-starting forces at or near the second and third lumbar vertebrae that superintend, in both sexes, the procreative organs, with all their marvelous consequences, making life pleasurable or miserable, according to the freedom or pressure along the lines of distribution. Our observations continue to become interesting the farther we go, for out of this lumbar region are nerves that go to and superintend the various organs in the pelvic cavity, as well as communicate through end fibers, with the brain itself, and receive in turn directions how to regulate the restorative and eliminative processes of the lower abdominal viscera, colon, rectum, genitalia, etc. Here we reach the fibers of nerves that pass on down the lower limbs, and that control muscular action, blood supply, nutrition, elimination and circulation of the fluids of these parts.

Thus we see that we reach the whole person through our manipulations, exercising an influence over every part. This

is done with a certainty that no other system of healing ever devised by mortals can boast of. When the reader comprehends the fact that *the nervous system controls the whole system*, a large amount of light opens up and shines forth as clear as the sun at noon-day. The manipulations that seem so simple at first sight, become matters of exceeding interest; his faith enlarges, his former prejudice softens down, melts away in the azure light of the first dawnings of a great truth that almost produces blindness on account of its marvelous brightness. To be able to take hold of a person and so adjust the system to itself that diseases of all kinds are dispelled, is surely a consideration that becomes peculiarly, as well as intensely, interesting to contemplate. To do this without introducing drugs into the stomach adds importance to the process. Hundreds of cases pronounced incurable by a large number of as good physicians as medical schools produce, and as long practice and experiment have qualified, cured by this system of treatment, increase our interest in the science, so that it becomes a matter of no small consideration.

The results following the proper application of Osteopathy are constantly accumulating, and as the evidence increases, the faith of the afflicted enlarges and trials are made, so that proof becomes obtainable from various sources supremely favorable to its adoption. The demand for the practitioners of this science is more than the supply, and thousands of places are offering opportunities to show their appreciation of a system of healing their diseases without medication from drug-doctors. The great difficulty to overcome is the prejudice of the people whose education along the lines of medical practice has moulded their habits into a particular form, and investigation denied a hearing, and evidence rejected, so that it is impossible to convince such until force of circumstances compels them to do so. No new truth is at once popular, nor does it ever find a lodgment in the public mind at once.

Osteopathy was practiced many years before it was





PLATE V.—Angle of Jaw Movement.





known in the small section of the country where it was born. Any great truth is difficult to find adherents readily. This being sought for and demanded, will be hailed with delight when once investigated. This is being done with wonderful rapidity and avidity, as its effects are seen and experienced.

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#### THE RESPIRATORY PROCESS—MECHANISM OF.

There are two stages of this process. The one is termed *inhalation*, the other *exhalation*. The one is the receiving of air into the lungs, and the other is expelling it. These are both performed by the action of the chest muscles. To study the composition of air inhaled, and the changes resulting in the air while it is being drawn into the lungs and passing through the air cells in the lungs, and to note its changed condition as it passes out of the lungs, the reader is referred to works on physiology, as a description of the physiology of the human system is not the province of this volume. We have to do with the mechanism of the process of respiration. The muscular system arranged around the chest is peculiarly adapted to this process, and by expansion and contraction of the muscular fibers of these muscles complete control of the quantity of atmosphere is had. The respiratory process is performed very largely by the exercise of the will, especially the quantity of air received in the lungs in the act of inspiration. Many persons live on a limited amount of air, while others exercise almost, if not quite, the full capacity of their breathing apparatus.

That the proper use of all of the capacity of the breathing apparatus be made, the very nature of the structure of the human body would at once admit, but there are so many who do not recognize the importance of breathing, that never do use all of the lungs, it is strange that more people are not sick than there are. Every drop of the blood that circulates through the human body, to be healthy, must have oxygen, and no other way being provided for oxygenation (except

through the skin) of this fluid except as it passes through the capillaries in the lungs, it becomes a matter of vital interest to afford opportunity to use all of the capacity provided for breathing or inhaling the purifying material, oxygen. The proper appreciation of this process of nature's method of "purifying the blood" would do away with the idea of medicine "*purifying blood*" (a thing it has no adaptation to do, and never did nor can do), and a universal use of the proper means provided to purify the blood would not only prevent, but cure, many diseases that already exist. Breathing is a *necessity* to life in the body, hence *important*. The part that oxygen plays in the body should not be lost sight of. If there is nothing the matter with the lungs, and a proper condition of the muscular system that controls the action of the chest exists, there can be no reason why all of the lungs should not be used. The necessity of it becomes apparent when it is understood that this is the means provided to oxygenate the blood. How this purification is brought about, we understand, is by an exchange of gases as the blood passes through the capillaries of the lungs on the sides, through the connective tissue (in the capillaries of the lungs). The oxygen is admitted and the carbonic-oxide is exhaled. It may be readily seen that, in case a part of the lungs is not filled with air, there can not take place that exchange of gases, and in consequence, the blood that should be purified by oxygenation fails to receive any oxygen, and passes back through the pulmonary veins as impure blood, and the arterial blood that nature designed to be pure—fitted especially to renew the waste that is constantly going on in all parts of the body, and needs new, pure material to supply—has to put up with this half-purified substance, and the result is seen in poor health. What else could be reasonably expected? The importance of breathing should never be lost sight of. The essentiality of pure blood should receive greater consideration than many are wont to give it, if continued good health or a return to health be a desideratum. From this storehouse of purified

blood every part of this complicated house we live in is rebuilt. Every tissue is made up from the substances drawn from the blood, and if the material from which the tissue is made be deficient, the tissue itself must necessarily be. That state of the blood called *pure* we understand to be a state brought about by a giving out of the *carbonic-oxide*, and the reception of oxygen. It will be remembered that as the blood passes through the capillaries at the ends of the arterioles, certain elements are given up; these elements supply the parts, and the residue passes on into the venoles, and the waste material in the locality of the capillaries is converted into fluid or gas, and passes into the lymphatics and thence into the small tubes called venoles, to mix with the unused elements of the arterial blood, and this mixture is carried back to the heart, the right side, thence thrown on into the lungs. The poisonous elements are here rearranged, rejuvenated, and all this takes place as the blood passes through the lung capillaries. In the one instance (at the ends of the arterioles) there is a giving-out process of elements, and at the other end (in the lung capillaries) there is a receiving, as well as a giving-up, process. Now this blood that is made over in the lungs, remember, is our precious material, by which we are to be renewed and kept healthy, to be drawn from. Nature has made this especial provision, and she accepts no other means. She makes and keeps pure all her supplies at all times, watching over every part of every element and tissue in our body by a great system of nerves called the sympathetic, that never slumber nor sleep while we live. To interfere with her marvelous processes always results in confusion in every department of the wonderful structure called the human body.

Starting back from the lungs, this blood should contain every element necessary to the uses intended, and if it has these elements, perfect harmony is maintained, and no unnatural changes occur in any portion of the body, but perfection characterizes the whole process of tissue building, removal



of waste material; harmony reigns, and the body experiences neither pain nor disturbance. But let there be interference anywhere in the harmony of this perfect process, changes occur, disturbance disarranges the molecular relationships of the normal elements, confusion starts, and the order being changed, the whole system feels the shock and the sympathy begins—disease is what we term the result. To cure this disease we must restore the harmony.

We should begin at the starting place to restore harmony, and we conclude that the beginning place is in the blood-manufacturing and purification department—the one to first consider. It is said that “the life is in the blood,” and if so, that fluid must contain the elements of life. These, we have been informed by physiologists, contain sixteen elements. During the process of gestation the foetus derives all these elements from the blood of its mother through the foetal circulatory process. We start with a human being already made, possessing life with all of its elements.

To maintain the normal arrangement it is a demonstrated proposition, that, as soon as the new relationship begins, air is the first essential to start the respiratory process. This must be maintained during the life of the being. The air contains properties that start expansion. It possesses substance or substances that fill spaces in the structure of the body called lung tissue, arranged in the form of six-sided cells, at the ends of tubes, through which air is admitted and fills these cavities, which, it is said, number many millions; and these cells are so constructed that air passes directly through their walls into the fluid that circulates between them in their walls, and the changes from one state to another ensue at once—in the capillaries. Whether this is done in the lungs or in the skin of the body, it is essential to the purification of the blood, and the renovation of it so that the tissue elements shall be in it when it starts on its mission of distribution from the lungs through the heart (its left side), thence through the arteries into the various parts of the body.



This newly-formed blood furnishes material that supplies the glandular system, and as it circulates therein the sympathetic nervous system directing the action of the secretory apparatus of the gland in such a way as to manufacture just such material as is needed in the particular locality of the gland, and for the uses to which it is appropriate. In the salivary glands a secretion is directed to the mucous membrane of the fauces, for the moistening of the food during mastication. This is the first step in the process of use of secretion in the digestive system, and this secretion, be it remembered, is drawn from the blood. The next step in the preparation of the food for digestion takes place in the stomach, and there another sort of secretions is manufactured, and one of these furnishes the cardiac end with the material for the mixture of the food in that part, called peptic (manufactured by the peptic glands), and the other set, called the pyloric glands, add their secretion as the food advances toward the duodenum, where a continuation of these pyloric glands seem to merge into what is termed Bruner's glands. These secretions, it will be understood, all come from the blood, and are secreted by and through the direct supervision of the sympathetic nervous system. The next step in the process of digestion takes place as the emulsified material passes out of the pyloric end of the stomach into the duodenum, through which passage the pancreatic and hepatic secretions become mixed. We are now ready to watch the process of absorption. The food, up to this point, has been prepared by the admixture of the various secretions for this last step in the process of entering into blood. No elimination has occurred. The products are held in solution—all that will be acted upon by the secretions—and the product is now in a condition to enter the abdominal lymphatic system through the walls of the small intestines, and thence carried through receptacles to the thoracic duct into the general circulation—first being mixed in the current in the subclavian vein on the left side of the upper portion of the chest—thence on into the right side of the

heart—through the right auricle, and thence through the right ventricle into the pulmonary artery, through which into the lungs. We are now back to the starting-point. All of this process has gone on through influences started in the respiratory act by which life is constantly imparted to the blood through *oxygenation* in the *lungs*.

This dissertation explains the whole process of circulation of blood and digestion, starting with the first forces brought into requisition from without—*oxygen*.

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#### THE POSITIVE AND THE NEGATIVE FORCES IN THE HUMAN BODY.

It is evident that two forces exist in the body, or that through the action of the nervous system we have two separate and distinct influences exercised. The one conveys influences to or toward the center, called *afferent*, and the other carrying influences outward, called *efferent* nerves. These terms are alike applicable to *blood* vessels. The two sets of nerves are called *vaso-dilators* and *vaso-constrictors*, originating in the *bulb* of the medulla oblongata. *An irritation or stimulation of the vaso-motor center in the medulla, either directly, indirectly or reflexly*, causes an increase of the blood pressure. This may be done also by stimulating the spinal cord, and by stimulating the vascular area directly by means of altered blood. A decrease of blood pressure may be produced by stimulation of the vaso-motor center in the medulla, either directly, indirectly or reflexly—directly by oxygenation; indirectly by impressions descending from the cerebrum (*e. g.*, as in blushing), and reflexly by stimulation of the *depressor* nerve, and consequently dilatation of vessels in the splanchnic area, and producing inhibition of the center by stimulation of other sensory nerves; by stimulation of the spinal cord, possibly directly, indirectly and reflexly; by stimulation of each vascular area directly (*e. g.*, by means of altered blood, or heat). Any increase of press-



PLATE VI.*a*.—Treatment of the Ears.



ure from whatever cause, whether from direct changes in the blood itself or decrease of central power, has its influence directly or reflexly on the circulation.

Independent of these two influences obtained through the nervous system, we have a *positive* and a *negative* force brought to bear, and which produce a change in the character of the secretions according to the positive or negative influence brought to bear by the special manipulations or degree of pressure on a part of the body.

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#### THE SCIENCE AS IT IS AT THE PRESENT DATE.

There have been no new nerve centers discovered, no new tissue has been formed, and only a different way of affecting the system through nerve filaments. We would not detract one laurel from the brow of the assumed founder of this method of healing. We can not concede to him all that he claims, nor that every time a pathological condition is found, "that it is the result of partial or complete dislocation of a bone." Neither do we indorse the "make-believe" style of "setting a bone" every time some sudden "creak" is heard in manipulations. That there are new ways of adjusting luxations would be naturally expected; but not anything new has been discovered by Dr. Still, except that the system, through peculiar though natural manipulations, over nerve centers and through terminal nerve filaments, should so exercise or produce an influence that would cure disease, or so change the constituents of the blood by increased circulation, and through the increased and uninterrupted flow of the fluids reduce the system to a normal state. This we readily admit he has the right to claim. This is a grand one, and this is what we are endeavoring to demonstrate to the readers of this volume.

The science is as easily learned as any other method of treatment, and the marvel of the method will somewhat modify in the minds of the people when properly explained as



found herein. That disease should be caused by interrupted circulation has been a known fact for long years—in fact, since Harvey discovered that the blood circulated. The methods of treatment, although differing from each other in method, have had an eye to the “purification of the blood,” but none seemed to place importance on the manipulatory process (outside of massage, and that ignorantly performed) as a means of scientific restoration to health. Dr. Still lays claim to this discovery, and since a system has evolved from this thought, and formulated manipulations have been adopted, and some localities have been found to be more vulnerable than others, and each has its particular reflex influence on others, centers, etc., the study has been, of late, to systematize the manipulations and the manner of giving them or performing them, that certain physiological results will follow. This has been largely accomplished, and we are largely the “commanders of the situation” as far as disease is concerned. That there are occasionally a bone or bones luxated is readily conceded and adjusted, and results caused thereby changed when adjusted is admitted, but the principles of this science are couched in the “freedom of the circulation of the blood and other fluids of the body.” This accomplished constitutes the sum total of Osteopathy. The blood carries in it the life and the elements which make up the new material; and when permitted to circulate undisturbed a normal state exists, and the nervous system being intact (that is, free from pressure everywhere), the normal functions are performed throughout all parts of the body, and health is the result. To know how to properly adjust the system to itself is to know how to cure disease of all kinds.

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#### THE CONTROLLING INFLUENCES OF CERTAIN LOCALITIES.

That there are certain topographical centers in and on the body that, stimulated, seem to result in wonderful changes, the Osteopath abundantly demonstrates, goes to

prove the possibility of successfully treating diseases without drugs. We submit a few instances. There are certain localities that we term vulnerable points. Take, for instance, the cervical ganglia—the upper portion of the neck; here, when we stimulate the terminal filaments of the vaso-motor nervous system, there results all over the body a slowing up of the arterial circulation of the blood. Here, between the third and fourth cervical vertebrae, we reach filaments that send an influence to the diaphragm, greatly influencing respiration. And we here stimulate recurrent nerves that control the secretion of important glands, that influence muscular and connective tissue in the cervical regions that, left alone, results in the various affections of the throat; and down a little further the spinal accessory is reached, through which the action of the trapezius and the sterno-mastoidei muscles are supplied. From the first to the fourth dorsal we reach important filaments that have much to do in the respiration, inhalation and expiration processes, the treatment of asthma, etc., and are not a small factor in treating lung troubles. At the fourth dorsal it is said that there are nerve filaments that begin the great splanchnic nervous system, which has so much to do in regulating stomach troubles, and through these nerves we reach the stomach, the liver, and in fact all of the vessels that have to do with the negative forces in the abdominal viscera—hence important to know them. The lesser splanchnic seems to be greatly concerned in the treatment of that condition we denominate chills, for it is here at the eighth dorsal that our principal treatment is directed for intermittents. Then, in the lumbar region, at the second vertebra, we regulate the action of the genital organs, starting forces that have lain, perhaps, dormant for months, and that have yielded to no other means or treatment—correcting same in a few hours. Through the lower lumbar and the sacral regions we produce influences that control the pelvis and lower limbs, regulating actions therein that result in relieving the pathological conditions that other systems fail to

affect favorably. Thus we reach the various centers through certain topographic localities not thought of or known of by the general practitioner. The strangest and most unaccountable results imaginable follow these treatments, especially to those who have looked for cures through a regular course of medication! To think of curing flux, diarrhea, chills, asthma, and every other curable disease by the manipulation of the body, stimulating certain localities, strikes the new beholder with such astonishment that it seems incredible! A fair trial is all that is necessary to convince the most skeptical of its verity, and even more *marvelous* results. We intensify this with extreme emphasis. *It is the greatest boon that ever has been offered to the human race for relief and cure of physical ills—acute or chronic—and all people must know of it!*

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#### MISPLACED APPLICATION OF OSTEOPATHY.

The tendency of the *tyro* in Osteopathy is to extol it beyond measure, and endeavor to distort it out of all proportion, and assign it offices not at all adaptable to its particular sphere. The limited judgment seems obscured by the mental obtuseness of the limited intelligence of the would-be scientific dispenser of the science, in his fruitless efforts to apply it to pathological conditions that nothing but the resurrection is applicable to. The *enthusiast* who overestimates his calling and presumes to imagine that his horizon is all there is, soon becomes burdened with its limited environments, and knowing only *his* landmarks, fails to see the unlimited resources of the great world around his little sphere, and is sooner or later engulfed in fathomless depths, and lost in the great labyrinthian regions that revolve around him. If we could be convinced that *we* are the *great cosmos*, the culmination of intelligence emanating from a *divine mind*, and that *mind* permeates and controls every atom in every tissue in the body, our thoughts would be occupied in learning how

to harmonize the various elements so that a continuance of this harmony might be kept up.

That there is a way to approach the citadel of thought, enwrapped in flesh and integument, experience demonstrates to be true; for the avenues are so numerous that it would require almost eight years to count them, one by one, eight hours a day and fifty a minute! Every one of these avenues have numerous terminal filaments of nerves permeating all sides of them, and each impression made on any part of these tubes, these nerve filaments convey it to the brain, formulate it into an idea, and that is directed to the citadel of thought, takes form, and brought into use as occasion demands, carrying into execution as needed afterwards, to continue the harmony of every other part of the body. These thoughts thus formed, constitute the world of thought that is conveyed through these small tubes, called nerves, that control, direct and care for every atom that moves in the channels of this *marvelous cosmos*—the human body. To keep up the harmony throughout, and all the time, constitutes the philosophy and the intelligence couched in the science called Osteopathy. Wonderful discovery! This whole frame of ours in every part is made up of marvelously constructed tubes. Every tube, including the nerves, is controlled by the sympathetic nervous system, and execution of the will, whether we are cognizant of it or not, is performed by the motor system of nerves—these being the executors of will-power conveyed through the sympathetic nerves. Sensitive nerves are also servants of the sympathetic, pealing forth their howlings and complaints whenever impinged upon too strongly. Everything acting in perfect harmony throughout this organism of ours, life flows on like a peaceful river; but when encroachments crowd, when interference of this harmony is made, confusion begins; the rallying of the forces takes place; increased effort ensues, too much pressure changes the forces, change of tactics occurs, chemical action



ensues, and new relationships cause the whole system to sympathize, disease results—Pathology.

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#### AN INTELLIGENT APPRECIATION OF THE SCIENCE.

That there are certain "buttons" to touch to produce results called cures, many are disposed to believe; but that this is fallacious, and only intended to cover up ignorance, will be apparent to any intelligent physiologist. That certain localities are what we call vulnerable points, is conceded, but that these control the whole organism, we are not ready to believe. That contraction of muscular fiber pressing upon nerves or blood vessels influences their functions, we know to be the fact, and that nerve action takes place at their *ends* we also concede, but that touching certain nerve centers, as is claimed (a thing that is not done), produces results at their ends, when a sufficient pressure along the lines of these nerves is made to cut off communication, we most emphatically repudiate as a notorious misrepresentation of the real facts. Pressure along the course of nerves controlling certain tissue, sufficiently hard to interfere with the function of that nerve, produces disturbance of circulation of the fluids at the said terminal; separation of motor and sympathetic footlets ensues, and as a consequence, an increase of fluids takes place, pressure is thereby increased, and surrounding tissues are involved, a further increase of the disturbance goes on, and thus disorganization, decomposition, chemical changes occur; inflammation results.

To endeavor to describe to the intelligent Osteopath any particular movement to be made in all cases, would be like the routine prescription of the country practitioner, or the old Thomsonian physician who, when he had given his six remedies, and patient not cured or dead, would *repeat* the same. The science of this system dwells in the realm of reason, and while the former patient might have been relieved by this or the other particular move, it does not follow that





PLATE VI.*b*.—Ear Extension Backward.



the same one should be practiced on each and every other. The movements, to the looker-on, seem exactly the same, but there is a difference, according to the necessity of the case, coupled with the intelligence of the operator. If there be diphtheria in one case and erysipelas in another, the neck muscles are manipulated seemingly alike—and necessity in a given case may demand it, but not necessarily. The same muscles may not be involved, and yet may be; but there may be complications in the one not in the other, so that in all cases it should be understood that each particular affection requires particular stress paid to it. The forces brought into action by the various manipulations bring about wonderful changes, depending largely upon the nerves involved, and how applied.

The specific results contemplated in all manipulations should be to take off the pressure, so that a free flow of the fluids through normal channels is effected—then restoration to a normal condition universally results; normal chemical changes go on, waste material is dissolved, eliminated, new tissue replaces the old, nerve forces established, and in the large majority of instances, health is restored, or started to be restored—thus, if pressure is kept off, pathological conditions cease. *This* state of affairs may have resisted all other known agencies, yet this always succeeds.

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#### ADAPTABILITY A PREREQUISITE TO SUCCESS.

Many who study the philosophy of this science may understand it, how it ought to be applied, and yet be wholly unfit to practice it upon any one on account of mechanical inefficiency, awkwardness, clumsiness. Such individuals make failures, where one less intelligent as to the understanding of the science or the anatomy of the human system, its physiology or pathological conditions, excels. Such individuals need a manipulator. Too much stress can not be placed upon adaptability, and then a thorough course in the

training department of that branch of education called movements—manipulations—and the *how* to apply them. Hence *applied Osteopathy* means a great deal. The failures are on account of deficiency here, in the large majority of instances, and yet I would not undervalue a thorough knowledge of the human system in health as well as disease.

There are certain insignificant pretenders who would make-believe that certain fumbling movements, twitting the body with finger ends, have special effects, marvelous in consequences; they are too insignificantly contemptible to deserve only the mentioning to expose their ridiculousness. Osteopathy, understood, is a great big, reasonable, sensible, large, ideal method of relieving suffering humanity, and not a lilliputian, spiritualistic, massage, mental science or *Christian Science* imagination. It is *strictly demonstrable*, comprehensible, *rational*; standing out in bold relief, unquestionably effectual, satisfactory wherever known and properly applied. Because ignorant pretenders use it, practice it, should be no argument against its value, significance and worth, for what science has not been abused by mere pretenders and unqualified shysters? Who, in the learned medical ranks, has not witnessed such in every age? We insist that intelligence and adaptability are prerequisites to a proper application of this science, and added to these the *mechanical* skill of the manipulator, you have the results desired. We would further emphasize the fact that physical strength is not altogether a prerequisite to the application of the science of Osteopathy, for there are many now successfully practicing this science who are not strong physically. It is remarkable how the strength of the operator increases as practice in the manipulations is repeated. The strength seems to increase with the practice, not only in the doctor, but in the manipulated. This science benefits every one to whom it is applied. What other system of healing can this be truly said of? (outside of financial considerations, and then only one side gets the benefit—and often neither one.) The community may get rid of the

subject, which sometimes is a source of great benefit. This is applicable to medical action usually. Unbridled ignorance is capable of doing much harm along lines where life is involved, hence it is better to use a science that is harmless, and only good comes of it.

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THE PEOPLE DEMAND AN INTELLIGENT REASON FOR A  
THING.

The confusion existing in the minds of pathologists, as well as physiologists, about the blood, its circulation, how it is formed, what it is when formed, shape and size of corpuscles (if there are any), seems to be as far from settlement as the poles, and what is asserted and written about this fluid goes to prove that it is not understood.

The nervous systems are alike little understood, hence much of the pathology is only hypothesis, not understood, and the whole remedial system from the first deviation from a normal, through all the various stages of pathological changes that end *in articulo mortis, veritas*. Along a course of forty years of close and persistent observation, it has been my lot to learn that, strictly speaking, medical knowledge is largely surface, and that largely imaginary. The secret source of life has not been discovered, and the search has been an ineffectual one, resulting in utter disappointment by the most ardent thinkers along down the ages. All for the reason that search has been made in the wrong direction—not where it is, but on barren deserts, lonely valleys, blood-curdling rocky heights, in dark caves, offensive cess-pools; and in the mad chase found nothing but a bacteria, an innocent bug, as a cause of disease, and utterly failed to find the source of life, or the means to sustain it. A signal and utter failure! These searchers have sought in vain, because they sought in the wrong places—the *causa morbi* being in the body itself—pressure, impediment in circulation, caused by undue pressure. This question solved, and the means of



removing it, lets in a flood of light that has never dawned upon the medical profession up to this blessed hour. It will be a revelation to those who open their eyes to the facts and see. That a systematic course of manipulations by an individual competent to make them, properly apply them to a person diseased, so changes the whole person that disease or pain subsides, is the hardest thing for some people to believe of anything imaginable. Manipulations have usually been relegated to the massagist as a sort of rubbing process, serving as an *adjuvant* in the cure of diseases—a sort of accompaniment of medication, to increase its action somehow or other, and to either amuse or in some manner aid in ameliorating the condition, neither understood by the doctor nor the manipulator, but applied as a sort of excuse for *doing something* to satisfy the patient. The facts are, much has been done that way to suffering humanity, and all of the various so-called means and remedies used to cure the sick have been suppositions, rather than intelligent knowledge of either the thing used or the cause to be removed. Jargon, confusion, ignorance, presumption, and experimentation have characterized the most of the means used in the treatment of the sick. To present to the reader and the profession something tangible, reasonable, something that may be relied upon, is the object of this treatise. To understand this philosophy and the proper manipulations, panoplies the possessor with the most certain means ever presented to the world.

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#### THE FORMATION OF MATERIAL FROM THE FOOD INTO BLOOD.

There are physiological deductions as regards the formation of the various tissues, the office of the glandular systems, and how the various parts of the body are formed. There are certain functions that each and every gland performs, and from observation we perceive that it is the province of each and every gland to generate a specific secretion, and that this

secretion has a special mission to perform in the human economy. That there is a specially arranged structure that each has, and that in the meshes of these special structures lies the official power, seems rather far-fetched, in consideration of the functions of the sympathetic nervous system. As each stage in the process of formation, elimination, etc., proceeds, from the first introduction of food into the mouth to the final metabolism of that product, we find special functions performed in the various departments exactly suited to each in the physical economy. Notice now, if you please, how we account for the whole procedure, and we opine that much light regarding the nervous system will have been thrown into the workings of each department of the house we live in. Our theory is, that through the special direction of the sympathetic nervous system, executed by the motor nervous system, each particular element is separated or drawn from the blood, in the various tubes through which the fluids pass, and that because of its knowledge of how much of this, and how much of that element is needed in each particular locality, the same is ordered to be drawn from the body of the blood, and either deposited there, or converted into other or new compounds by chemical affinity; and if the renewal is to be made, the elements are placed wherever needed; and if waste material is to be carried out, it is done; if special compounds are to be used in a particular gland, it is made there as needed, by the chemical, physiological law inherent in the physical organism. That when no obstruction is interfering with the normal circulation of the fluids, and there is no unnatural pressure on the nervous system each and every part of the physical organism undergoes the normal processes of tissue change and elimination. The nervous system selects from, or manufactures in the salivary glands the kind of secretion during the process of mastication that is essential to the preparation of the food for the next step in the process of digestion; and when the bolus has reached that department called the stomach, another kind of secretion ushers in and

covers it and mixes with it, and certain changes take place; and then another step is taken, and we find that additional glands are brought into requisition to manufacture certain secretions different from the preceding, and mixed with the former secretions, with and in the food, and that, in consequence, another constituent is formed—an ingredient that prepares the contents of the third department—mixture and compound—to be taken up by a set of tubes called lacteals (succors, absorbents), and conveys the fluid part of this compound into larger tubes, called receptacles, and then it is conveyed through a duct, called the thoracic, into the subclavian vein; thence it goes to the heart; from thence it is conveyed into the lungs. Up to this point we have had accession after accession all along the line, from the time the food was introduced into the mouth until it lands in the heart—not only the new material, with the various kinds of secretions, but the waste material from every tissue in the body. The interesting part of this work is before us, and we now proceed to follow this fluid on its rounds through its meandering course, watching each particular element as it is directed and controlled by the nervous system until we shall have seen it again in the capillaries of the lungs, where we left it. It will be remembered that the sympathetic nervous system is the chief factor in this locality (the vagus supplying the lungs), and here is the workshop, where the beginning of all the tissues in the body are manufactured, a reinforcement and a renewal of the *elements* begin, and it is here that the sifting-out process takes place—the exchanges occur—oxygenation begins—the incineration of waste material and the elimination of carbonic oxide take place. It will be remembered that there are over seventy-six millions of small cubic cavities in the lungs, and that they are separated from each other (and yet all connected with each other) by a thin membrane; or, rather, two membranes, and that between each *air cell* there are small tubes through which the blood passes—not in the cell, but on and in the membranes of the sides; and these are denomi-



PLATE VII.—Vibration of Temples and Forehead.





nated the *air cells*. Into these cells the air rushes at every inhalation, and by a process called *endosmose* oxygen is forced through the walls of these cells, on all sides, into the blood, as it circulates around these cells, oxygenates the blood, and at each exhalation the carbonic oxide is thrown off, the venous blood converted into *arterial* blood, and then, through the vessels called *pulmonary veins*, carried back to the heart, where it enters the left auricle of the heart as *pure blood*, ready to start on its mission to renew the waste material of the general system. From the left ventricle the blood enters the aorta, from which arterial trunks receive the blood, carrying it to every portion of the body. As the blood is ushered on through these tubes out into the various trunks leading to every part of the body, a change in the size of these tubes is perceptibly observable—the tubes become smaller and smaller until they become microscopic in size, when they lose their outside coating in the tissue, and become capillaries. Here is where the interesting part of our science concentrates, and the effects of our system are so brilliantly manifested. As the warm, pure, vitalized blood passes into these small tubes, whose caliber is said to be about one-thirty-two hundredth of an inch in diameter—the connecting link between the ends of the arterioles and the beginnings of the veins—there is given off through the walls of these capillaries from the blood, as it passes through them, the various elements needed to supply the waste in that immediate vicinity, and the remnant passes on through the capillaries into the venoles as refuse, or degenerated blood.

We are loathe to believe that the *blood corpuscles* pass out through the walls of the capillaries en masse, as some physiologists affirm, for this would render confusion in the parts, and produce chemical changes that would necessarily be destructive to the tissue into which the said corpuscle entered; for please to bear in mind the fact that this corpuscle contains *all* of the elements necessary (if normal) for building up every tissue in the body, and it is evident that there is not,

in the locality of these capillaries, a complete metamorphosis having occurred, consequently there is no necessity of all of the elements in the corpuscle being deposited there, simply to engender in the part excessive chemical changes to prepare these various elements for elimination.

Now, if the reader will patiently follow us through this seemingly labyrinthian maze that has so beclouded and bewildered the physiologist, we shall try to make the matter understood—how the body is renewed day by day, and the waste material is disposed of. The process is interesting, in that it involves the whole matter of *life* and *death*.

It will be remembered that the circulation of the blood in the *arteries* is dependent upon the *nervous system*. This system is supposed to be the *vaso-motor*, that controls the peristalsis, by its influence in the muscular walls of the blood vessels—from the large orifices of the heart to the ultimate ramifications of the smaller twigs of the arterioles. Now, as each blood corpuscle enters the capillary, containing as it does the elements of nutrition, the sympathetic nerve filaments ending in the capillary direct the kind of element needed in that particular locality, and the quantity to be drawn therefrom, and this is done, and here, by the universal law of chemical affinity. This, or these elements, unite with other elements already there, outside of the capillary, and through contact change the structure as demanded—right there, passing the gas or fluids that are produced by the change on into the lymphatics, through which the excess or waste passes, entering into the veins, beyond the capillaries, with the refuse, the unused elements, whence it is conveyed back through the veins to the heart, and thence to the lungs, to again be renewed for its next round through these, or other parts of the body. And now, as some of this blood passes into and through certain other renovating apartments—such, for instance, as the kidneys, the skin—a process of elimination takes place. All of these changes take place by a direct communication of *mind* through the sympathetic nerves, to

the motor-end filaments, which execute orders, and the work is done. This, in brief, is the process that is constantly going on in the system, and it is the universal order of every department in the body. The necessity, therefore, of seeing to it that every channel, tube and nerve filament be kept free is apparent to the practitioner, if perfect harmony exists; and if it does not, it is his duty to be wise enough and know enough about the workings of these various departments to see to it that they are set to rights by the proper manipulations that take off the pressure.

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#### THE ELEMENTARY CONSTITUENTS OF THE HUMAN BODY.

In nature we have for the cardinal elements, *Carbon*, *Hydrogen*, *Oxygen* and *Nitrogen*. Some one or more of these enter into combination with the food eaten to make up the physical structure we call bone, muscle, cartilage, tendon, etc., and these are so arranged that perfect harmony in a normal condition exists.

In addition to these four cardinal elements we have Sulphur, Phosphorus, Chlorine, Calcium, Sodium, Potassium, Magnesium, Iron, Silicon, Lithium, Manganese, Fluorine. It is said by physiologists that oxygen enters into the fluids of the body in a comparatively free state, either in solution or loosely combined. Nitrogen is found dissolved in the fluids, and hydrogen occurs as a product of decomposition in the alimentary canal.

These sixteen elements are combined in various proportions in the body, and make up the tissues thereof. The simpler bodies are crystalline, as chloride of sodium and urea; the more complex, as albumen, are amorphous. Chloride of soda and urea pass out of the body, after crystallization, through the excretory organs, the albuminoids being better suited to form the solids. They are divided into the following classes: I. Inorganic Compounds; II. Organic Crystalline Salts, or the Urea Group; III. Carbo-Hydrates, or

Sugars; IV. Hydro-Carbons, or Fats and their allies; V. Albuminous, or Proteid Compounds; VI. Albuminoid, or Gelatinous Compounds.

The Inorganic Compounds include water, acids, bases and salts. Water forms about seventy per cent. of the whole body, and is a general solvent, by means of which various materials may be taken into the body as food, or excreted from the body.

Acids consist of—Hydrochloric, which exists free in the gastric juice, and in combination with bases in all the tissues and fluids of the body; Carbonic, with bases in blood, teeth and bones; Phosphoric, in combination with bases, in the bones, teeth, corpuscles, brain, etc.; Sulphuric, with bases in blood, serum and secretions; Hydrofluoric, with bases in bones and teeth; Silicic, with bases in hair and epidermis.

Bases—Sodium, in all tissues and fluids; Potassium, in the muscles, red blood corpuscles, nervous tissues, secretions; Ammonium, sparsely in the gastric juice, urine and saliva; Calcium, in bones and teeth and fluids; Magnesium accompanies lime.

The Organic Crystalline bodies are very numerous, and are found for the most part as the result of the disintegration of albuminous material, and nearly all contain nitrogen. The principal members of this group are urea, uric acid, xanthin, hypoxanthin, hippuric acid, kreatin, kreatinin, lactic acid, lecithin, neurin, cerebrin, leucin, tyrosin and cholesterin.

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THE NECESSITY—THE ABSOLUTE ESSENTIALITY OF TISSUE  
ELEMENTS IN THE BLOOD.

They bear the same relationship to the body as food does. Many an Osteopath has been stranded in his efforts to "set a bone" that was never out, or to adjust a muscle that occupied its proper relationship to the system, and signally failed to relieve some chronic ailment that depended upon a lack of



one or more of these elements that go to make up the material of the house we live in. There are others who fail because of inattention to the habits, environments, etc., of the patient, manner of eating, time of eating, process of mastication, proper mixing of the salivary secretions, condition of the stomach as regards rest, or ability to perform its normal functions, so as to properly prepare the food for intended use. It is a singular fact that healthy blood must have all of the elements in it. The secretions in the mouth coming from the parotid, submaxillary and sublingual glands are necessary to dissolve the food and prepare it for the next step in digestion, as the food itself is to build up the waste that is constantly going on in the body. Here we have the first manifestation of the controlling influences of the sympathetic nervous system—the power to draw from the blood the alkaline secretions that dissolve food. As we descend into the stomach through the œsophagus we see another marvelous change in the character of the secretions—the gastric juices, composed for the most part of hydrochloric acid. The combination of the alkaline secretion from the mouth being mixed here in the stomach, emulsification ensues and the contents of the stomach being thus prepared, passes on into another division of the digestive tract, and there meets with another kind of secretion that is largely alkaline, from the liver and pancreas, and here the change prepares the food for absorption—that is, to be ushered on into other apartments, into channels that lead to receptacles that connect with a duct called thoracic, that carries the chyle up into and through the thorax, on the left side, and empties this compound drawn from the food into the left subclavian vein, through which it enters the heart (the right side of it), from whence it is conveyed to the lungs, in which it is brought in contact with the oxygen—one of the sixteen elements before mentioned, and the only element in nature that purifies blood! This process puts to silence the “Blood Purifiers” so earnestly recommended to be used by medicine vendors. The human system, remember, is a



cosmos of itself, and in the normal state has its exact quantity of elements (in sufficient quantities and exact proportions) to constitute a healthy organization, and when the proper food is introduced at proper times, with the proper environments, it needs no help to perform its normal functions and keep itself in a healthy condition. We maintain, and shall endeavor to show, that disease is an unnatural and acquired state, and that it is due, primarily, to a change in one or more of the molecules of these elements, or a deficiency or change in them. Whether this change is brought about by lack of the proper food or obstruction to the normal circulation, these must be corrected, or disease will follow.

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#### HEAT AND COLD.

The influence of these two opposite phenomena must not be lost sight of in the curriculum of causes of pathological conditions. It is the property of cold to contract and heat to expand muscular textures. These diametrically opposite states are prime factors in the production of many diseases. They influence the character of the changes that take place in the system, of these elements, as well as circulation of the fluids that contain them in solution, and the tissue changes of the organic substances of the various parts of the body.

Pressure sufficient to produce sluggishness in the flow of the blood and other fluids influences change in the nerve cells, or the magnesium, potassium, calcium, sodium and the iron phosphates as well as the potassium chlorides, and results in disturbance of the functions of said nerves. As the nervous system, especially the sympathetic, controls the action of the motor nervous system, regulating the caliber of the arterial system, we can readily see that disturbance must necessarily follow; as it is through healthful conditions of the nervous system all the functions of the body are performed. The various structures being composed of these elements in varying proportions, each exercising special functions in the



PLATE VIII.—Stimulation of Supraorbital Nerves.



physical economy, is it not reasonable to conclude that each special element has its particular place in the body?

The connective tissue contains silica, calcium, phosphate; in elastic tissue and bone surface we have calcium, fluoride, magnesium, phosphate, and a large proportion of calcium phosphate in bone cells; the latter is also found in muscle, nerve, brain and connective tissue. We have in the brain substance potassium and sodium phosphate. Cartilage and mucous cells contain the specific material, sodium chloride, which also exists in all of the fluids of the body. The hair, nails and skin contain silica, which is also in the connective tissues covering the bones, and with other substances we have in the conjunctiva ferric phosphate. The inter-cellular fluids contain potassium, chloride, sodium and calcium phosphates, and all the sulphates. Potassium sulphates are also present in cells. The carbonates are supposed to be without any influence in the process of new-cell formation.

The process of oxygenation that takes place in the lungs is supposed to act upon the organic substances of the blood, removing impurities, and the products of these changes are the organic materials which form the physical basis of muscle, nerve, connective tissue and mucous substances. Each of these substances is the basis of chemical affinity, and thus new tissue is formed. With the product of new tissue we have, at the same time, the destruction of the old ones, resulting from the action of the oxygen on the organic substances forming their bases. The ultimate results of the union of the oxygen with these organic substances are the formation of urea, uric acid, sulphuric, phosphoric, lactic and carbonic acids and also water. There are many other members of the series, not necessary to mention in this connection, as they are fully detailed in physiology.

Urea, uric acid and sulphuric acid are the result of the oxidation of the albuminous substances, while phosphoric acid is produced by the oxidation of lecithin contained in the nervous tissues, brain, spinal cord and blood corpuscles.



Lactic acid results from the fermentation of milk-sugar, and finally breaks down into carbonic acid and water. Sulphuric and phosphoric acids unite with the bases of the carbonates, forming sulphates, and set free carbonic acid. By means of the presence of sodium phosphate in the system, lactic acid is decomposed into carbonic acid and water. This element has the power or property of holding carbonic acid in combination, fixing it, and does this in the proportion of two parts of carbonic acid to one of phosphoric acid which it contains. This combination is carried to the lungs, and there, by the action of oxygen from the inhaled air, the carbonic acid is set free from its loose union with sodium phosphate, and exchanged for oxygen in the process of exhalation. Uric acid is kept in the blood in solution, by the presence of sodium phosphate, and is eliminated as such by the kidneys. When this acid loses its solubility from lack of sodium phosphate, it combines with the basis of sodium carbonate, and forms urate of sodium, which is insoluble. When this is deposited around joints it gives rise to gout and acute articular rheumatism. Sodium phosphate serves to saponify fats, or probably emulsify them. This salt can also take up albumen, besides the above-named acid. Albumen is said to behave itself like an acid. By reason of the property of taking up albumen the sodium phosphate can carry on resorption of pathogenic deposits of albuminous substances, hence so useful in scrofulous swellings, glandular enlargements, lupus and incipient tuberculosis, etc.

A disturbance of the molecules of sodium sulphate in the inter-cellular fluids may be followed, according to its duration or extent, as well as its location, by a retarded removal of the water of oxidation and dissolved or suspended matters. This implies a consequent liability to bilious vomitings, erysipelas, diabetes, etc.

It is interesting to know that sodium sulphate and sodium chloride act in opposite ways. While the former (the sulphate) removes from the tissues the water, according to

the process just described, the muriate (the common salt) enters the tissues, dissolved in the water from the blood plasma, in order that the requisite degree of moisture proper for each tissue may be maintained. The final products of the organic substances are urea, carbonic acid and water, through the process of oxidation. These, with the salts set free, leave the tissues, and thereby give place to less fully oxidized organic bodies, which in turn finally undergo the same metamorphosis. The products of this retrograde tissue change are conveyed through the lymphatics, the connective tissue and veins to the gall bladder, lungs, kidneys, bladder, and skin, and are thereby removed from the organism with the excretions, such as the urine, perspiration, feces, etc.

The above detailing of the action and uses of these tissue elements are surely worthy our careful consideration if we regard health as essential to our happiness.

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#### THE VALUE OF THE TISSUE ELEMENTS CONSIDERED.

Though these are in no sense medicines, yet their importance will be apparent to the physiologist, to the pathologist, when it is understood that they constitute the entire physical organism, and that without them we could not, as we are, exist. In consideration of this fact, we would invite the attention of the pathologist to the role due them in endeavoring to restore the afflicted to health. Whatever else is indicated in the treatment, these should not be overlooked.

Barring surgery, we are satisfied that due regard to the supplying of these elements when needed, and the proper adjustment of the system to itself, osteopathically, will be sufficient to cure all curable pathological conditions, that are curable at all by any means now known. In Osteopathy we have the means of promoting the circulation of the blood and other fluids of the body in and through their normal channels, and of uniting positive and negative forces which determine the neutralization or the modification of the acids and the

alkalines of the system in their actions in the human body, the adjustment of muscular fiber, bones, tendons, etc., and keeping up a normal circulation of the fluids to and from all parts of the body. The proper coordination of the system with itself means a great deal when it comes to restoration from any and all forms of disease. The addition, the introduction into the system, of the proper elements that are efficient, and the removal of those in excess, surely should be duly considered. These, properly attended to, constitute all that is necessary for any one afflicted with any known pathological condition. This is not only our experience, but seems to be the only rational means necessary to cure our ills. Surgery should have its proper place in the curriculum of remedies, when needed.

It may seem strange to some that we regard medicines as superfluous in the cure of disease, of any sort, name or nature, but upon due consideration of the foregoing there can be but one conclusion, and that is, that they are foreign substances—not needed. If we have everything in the system needed, all of the elements, and the circulation perfect, we do not even need the tissue elements, but in case of disturbance in the circulation of some or all of the fluids, the indications are to take off the pressure. The system has a very unique way of converting its various elements into whatever new ingredient needed, when there are no restrictions placed upon it in the way of undue pressure. The pressure, anywhere, is the thing for the Osteopath to remove, and let nature perform its wonderful processes in its own peculiar way. The how to do this work is the object of this book to explain. This is the gospel of healing.

The different inorganic salts may be classified as follows: Calcium phosphate, Calcium sulphate, Calcium fluoride, Ferric phosphate, Potassium chloride, Potassium phosphate, Potassium sulphate, Magnesium phosphate, Sodium chloride, Sodium phosphate, Sodium sulphate, and Silica. These com-

bine with Carbon, Hydrogen, Oxygen and Nitrogen to form the different elements, and are the essentials of them.

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DO NOT CONFOUND THESE ELEMENTS WITH MEDICINES.

The constant changes that go on in the system, bringing to the surface effete matter, to be thrown out through the skin, the large quantity of blood that is flowing into the heart and lungs every breath we breathe, the double capillary action of the liver, the manufacture of the various secretions by the glandular organs of the body, the changes that the blood undergoes in the various capillaries, as it gives off the chemical constituents necessary to supply the waste of tissue in their immediate circle, and then the various degenerative tissue metamorphoses constantly present everywhere, the tearing down and building up of every tissue in the body, constitute phenomena that are indeed marvelous to contemplate; yet all these actions are being performed whether we wake or sleep, and are all made in accordance with perfect precision in every department, provided no obstacles interfere with the circulation of the fluids. The very moment there is interruption, hindrance, sluggishness, stasis anywhere, there are necessarily chemical changes, retrograde metamorphosis ensues, and continues until new material is formed, or breaking down of the tissue results. Hence, the importance of a perfectly free and incessant onward movement of the fluids throughout every department. As the sympathetic nervous system has complete control of every atomic cell, being distributed to each and every tissue, capillary, tube, lymphatic vessel, gland, blood vessel, muscular fiber, etc., throughout the body, and controls and directs motion and sensation, tissue building, elimination, waste and repair, it becomes a matter of no small importance to recognize its freedom from pressure all along the lines of its course from origin to termination. The motor and sensory nerves occupy a secondary or subordinate sphere in the physical economy, being only servants, messengers, as it were,



to carry out or execute orders from the sympathetic nervous system. In our philosophy of the action of the nervous system, we may cross the opinions of established authority, and introduce an entirely new phase regarding the cause of disease, but they who follow me through to a legitimate conclusion, will find that my philosophy must be true, in order to prove the science of Osteopathy to be founded *upon rational principles*. A hap-hazard theory of a science, unscientifically and unreasonably presented, would justly receive condemnation, ridicule and unfavorable criticism, hence our premeditation, long study, experience, practice along these lines to demonstrate every possibility, probability, and show to the reader, in clear and unmistakable terms, that its claims are not only exceedingly and intensely interesting, but practically true.

#### THE HUMAN SYSTEM AS A MACHINE!

From the foregoing it would seem unfitting to call the human system a machine. That term, originated in ignorance, has been perpetuated in ignorance and used inappropriately in reference to the human body without regard to its components. There is no semblance or resemblance to an inert machine, that has neither sense nor motion—simply moved by mechanical force. This body of ours is a part of Deity itself, “made in the image of God,” “a little lower than the angels, crowned with glory and honor.” The Ruler over all things terrestrial, everything subject to him. Machine, eh?

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#### FREEDOM OF CIRCULATION ESSENTIAL.

The freedom of the circulation of the blood and other fluids is essential to the health of the body, or its restoration when diseased.

The normal circulation may be defined as that condition which is natural. The blood is usually recognized as the circulating fluid in the body throughout the arterial, venous and capillary systems, furnishing every part with life (for it is said



PLATE IX.*a*,—Vibration of Sides of Nares.



that "The life is in the blood"), vigor and motion, and from which is drawn all of the various elements that go to make up the tissue that manifests "the life." To properly comprehend these wonderful phenomena, volumes have been written by the wisest and most learned in the sciences of anatomy, physiology and histology, and ages have been occupied in the research, and speculations mountain high have been made, yet the search continues, each investigator seemingly adding some new theory thereto.

Since the discovery of the circulation of the blood by Harvey, there have been many theories advanced in a fruitless effort to harmonize the various systems of practice, so that the blood in some way would be influenced thereby, and theory after theory has been advanced as to how the blood might be purified; one claiming that this, and the other that that remedy would surely do it; and the craze has raged so vehemently that competitors have arisen who have asserted their compound as the *sine qua non*, and the poor victims of disease have had to test the efficacy of each and every one of these competitors' compounds, until legions have doubtless been consigned to premature tombs, and whited sepulchers now mark the resting places of failures of their "pet notions." Whilst all admit that, to be healthy, the blood should be purified, yet all seem to be at sea as to how this may be done. There is a uniformity of sentiment that circulation somehow influences purification, hence they claim that this or that compound increases circulation, "therefore purifies the fluid circulated." Various methods suggested have been tried, medicines of every kind and potency, singly and compounded, for the purpose of changing the *materies morbi* of this "life fluid" of the human race.

Why the addition of a foreign substance into the system to "purify" blood ever obtained a footing in the mind of any man, is the strangest thing imaginable! That drugs (medicines) have a pathogenetic effect is conceded without argument, but that they are essential to our recovery from disease



is questionable. That some of them arrest tissue change, others stimulate, others narcotize, blister and purge, seems too patent to dispute. It is not the non-action of medicines that our system opposes, but the action—the too much action—often doing harm instead of the good intended. If it were a certainty, if it were harmless, so that any one could use it as they will finally use Osteopathy, so as to benefit everybody, we would say use it, but we have tried medicines of all schools, and our experience is what many others have had—disappointment, anxiety, death following in their wake too often, when, had we known Osteopathy, many a poor victim who succumbed to the use of drugs in the vain hope of recovery might have lived many years longer than they did—and especially children, whose “summer complaints” carried them off by the thousands, when a moment’s treatment by one understanding the principles of Osteopathy would have cured.

That much more is claimed for Osteopathy than it is possible to verify does not lessen our faith in its efficacy, nor does it intimidate us in our search for every good it is capable of accomplishing. That it fills a niche unfilled by anything else the unprejudiced will readily concede. That there is scarcely a condition pathological that it may not safely, beneficially, be applied in, my experience has verified, and a proper application of its principles will do more for any given case than people unacquainted with it, are willing to concede. That it is a “cure-all,” we make no such a claim for it, and yet, like water, it fits into, and its influences are so far-reaching that it seems to us indispensable, its necessities standing out in bold relief at every pore in the physical economy. Think of a means that completely controls circulation and the forces in the body so completely as to change the action of the alimentary canal to one of alkali and an acid at a single move of the body, or change the abnormal flow of the watery portions of the blood from the mucous membrane of the intestinal canal to a normal flow at one movement of the body. Are not such agencies worthy the highest commendation?

To understand the nerve influences going on in the body at all times, and to know of certain functions being influenced by the stimulation of certain sympathetic filaments, leashes, bundles, or nerve terminals, disease, pain, and often death itself brought to life (or what would shortly end in death)! Colic, flux, diarrhea, hemorrhage, croup, and diphtheria, scarlet fever, meningitis and heart trouble—all of these have been cured through osteopathic treatment, after being pronounced incurable by other systems represented by their leading representatives and teachers. Should such a science be spurned, maligned, misrepresented, simply because of ignorance and prejudice?

If there were no merit in this system, it would have had its day long before now. That there is merit in it is demonstrated by thousands having been cured by it. It is not any longer an experiment, but a proven success, worthy the highest commendation, and receiving the approval of the brightest minds in America, and of some of the leading lights in the medical profession in some of the great centers of this country. That it is often practiced and represented by persons whose intellects are mediocre, successfully, beyond the ability of medical skill to cope with, is a palpable demonstration of its superior merit in the minds of those "who will see." When this book is studied and the manipulations properly mastered, the philosophy correctly understood, many an invalid now environed with hopeless forebodings, will rejoice that help may be obtained. This science has come to stay. It will not down. The combined and untiring forces of every opposition only brighten its already luminous pathway, giving it impetus and strength every time its benign influence is felt by some poor, afflicted, abandoned mortal, whose forlorn, hopeless wailing had died away in the distance. It only needs to be known to be appreciated, adopted, patronized, recommended.

## MUSCULAR CONTRACTION.

There seems to be a prevailing notion among Osteopaths that a "bone out of joint," an "atlas out of place," or a "dislocated hip," is the cause of all the trouble, and a large per cent. of the ridicule this science receives is simply due to ungainly, grotesque, ignorant, commonplace expressions that have been carried from mouth to lip; and the literature that has been sent out through the advertising sheets, styled journals, has not tended to raise the reputation of the science much in the estimation of scientific and thinking people. This science is worthy a better showing, and it is to be hoped that when it is properly presented, the mysteriousness lifted from it, and the scientific, anatomical, physiological facts that environ it lead the people up to know that it is plain, simple, common sense and scientific truth, worthy the thought of the brightest minds of this or any other age, it will be welcomed as a great boon to all people; then the honorable medical professions will adopt it, use it, indorse it.

The great fundamental principles upon which the science rests are comprehensible. "Pressure anywhere impeding the normal flow of the fluids," is the motto of Osteopathy. This pressure, as it is denominated, occurs in many ways. The most common cause of the interruption of the freedom of the flow of the fluids is cold. It is a known law, recognized everywhere, that cold contracts and heat expands. This law is recognized by all philosophers, mechanics, artisans, machinists, and everybody who observes. To the osteopathic manipulator this law becomes his polar star, for it is known by him that the contraction of muscular fiber, that impediment to circulation, sets in at once as a result of the lowering of the temperature of the body, and as the cold increases or continues, the muscular contraction continues, or paralysis of the nerves ensues; and the undue relaxation allows infiltration of the fluids in the parts involved, resulting finally in disorganization, degeneration, destruction.

The circulation of the blood occupies from thirty to forty-

six seconds in making its round through the system, and if from any cause the onward flow is impeded, chemical changes ensue, decomposition or disintegration, irritation, inflammatory products or new material incompatible to normal action results, and the consequences are disease. This change is commonly recognized as the "materies morbi" of the blood. A sluggish or impeded circulation often results in a precipitate of some one or more of the acids, and that condition follows which we denominate rheumatism. This usually occurs in the neighborhood of the capillaries. If there are obstructions to the outflow of the glandular system, we have results according to the special office the gland occupies in the physical economy. If in the salivary glands, the throat suffers therefrom; if the thyroid, it enlarges; if the thymus, diphtheria, croup, and a host of other children's diseases are likely to ensue. If there is impediment in any of the smaller veins in the sub-mucous membranes, we have catarrh; if in the skin, eruptions follow.

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#### OBSTRUCTION PRODUCES DISEASE.

If there is pressure or congestion of blood or other fluids on the corium of the brain, in the region of the fissure of Rolando, paralysis ensues, demonstrating the fact that motor nerves have their origin in the cortical substance of the brain. It is strange that so small an area involved will produce such an extent of mischief so remotely. It is definitely demonstrated now that certain areas in the corium have special control of special localities in and over the body. For instance, when an area posterior to the upper end of the fissure of Rolando is congested, it produces paralysis of both lower limbs. Other localities are affected in like manner from the pressure on the corium in different parts of the head, demonstrating our theory that *all nerves* have their origin in the brain. For special cortical motor areas the reader is referred



to his Anatomy or to works on the nervous system. (Ranney is authority).

Whether obstructions occur as a result of changes in the weather, direct cold, or to continuous exposure of the body, or any part of it, to a lower temperature than normal, or to direct pressure, such as bandages, tight lacing, over-crowded vessels, impediment due to lack of fluidity of the blood, paralysis of nerves controlling the circulation in any or many parts of the body, any one or all of these causes may be and are the cause or causes of the pathological conditions that afflict mankind. Our whole theory has its origin, support, conclusion, on this idea, this fundamental and unheard-of cause of disease, and perhaps unthought-of by other diagnosticians. And while we would not desire to appear dogmatic in this regard, we firmly believe that all pathological conditions are traceable to obstructed circulation somewhere in the system, and that removed, the patient has a better opportunity of recovery than from the possible influence of medication. It surely seems more rational to take off the pressure producing the pain of a morbid condition, than to impose more labor, to care for some other foreign substance that has no earthly relationship with the system, and can not possibly have, with the idea of the necessity involved in the premises. It is like goading an already overburdened animal, or pressing the head of a drowning man under water to keep him from death! Oh, if we could induce the doctors to think!

Undue irritation of a nerve produces pain; if a sensory nerve; increased action, if a motor nerve; an impairment of function, if a sympathetic nerve, or nerve ending in a part. This may be done by contraction of muscular fiber, or muscular contracture may be induced by irritation of the nerve through the sympathetic filaments, and nerve waste may go on to the destruction of the body, without perceptible sensation or pain. Undue contracture may have either of two influences—one that of preventing flow to a part; or, secondly, flow from a part. In the one case nutrition is cut off; in the



PLATE IX. *b.*—Stimulation of Lacus Lachrymales.



other, destruction or impairment of function, due to decomposition of elements pent up, which undergo decomposition for the want of action or circulation. Hence the importance of keeping free the circulation throughout the whole system.

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#### FULL, DEEP INSPIRATIONS.

This is a therapeutic agent of vast importance, not only as a means of expanding the chest muscles, aiding in the purification of the blood in the lungs, and thereby removing many impurities therein through the exhalation that constitutes a part of this exercise, but it is a means of relieving many heart affections, supposed to be organic, when in fact they are simply functional troubles. Melancholia, sleeplessness, indigestion, bad colds, chilliness, insipient tuberculosis, and all other conditions dependent upon the proper use of the chest muscles are greatly relieved, and often cured by this means. There are many of our manipulations made expressly to expand these muscles, as well as to expand the lungs, and thereby oxygenate the blood. Remember that "the blood is the life of man," and that to retain its vitalizing influence nature has provided a positive means of accomplishing its purifications, and it must be done in its own way, or diseases follow. The proper way to fill the lungs is to close the mouth, draw in air, fill the lungs to their fullest capacity, easily, steadily, holding it in the lungs a few seconds at first, increasing the time between taking it in and expelling it from the lungs from thirty to fifty seconds, letting the air be expelled through the nostrils gradually. This exercise should be taken at intervals of two to three hours during the day, six or eight such deep inspirations at a sitting. At first the effort will be somewhat exhaustive, but resting a little while and renewing the effort will surely bring its rewards. The reparation of the system will soon be noticed, and malnutrition and impaired assimilation will be greatly improved, if not restored. This practice not only expands the lung tissue, fills the air cells, but it strength-



ens the respiratory muscles and deepens the chest capacity. The nervous system will be strengthened and made more firm, the blood and tissues generally will be enriched, and the liability to take cold lessened. When it is known that there are many persons who scarcely ever utilize all of their lungs, and that the upper lobes under the clavicles are little if at all used, and that this apex portion is weak, respiration scarcely perceptible, the upper portion of the chest walls flattened on both sides, digestion feeble—that such persons may be transformed into strong, rugged, round-chested, symmetrically proportioned bodies—this exercise will take rank as one of the very best means of preventing many, very many diseases.

There is more in this practice than the ordinary people, and even the physicians, have thought of, and its importance will be enhanced when its benefits are properly understood, realized. This may be said, that a systematic attention to the right sort of breathing constitutes the larger part of hygienic measures necessary to good health, happiness, longevity and the restoration from many of the ills of the flesh that now are to be witnessed everywhere. The exhausting efforts of daily life are usually due to lack of lung expansion, due to lowering of the vitality of the blood, for want of oxygen. The proper expansion of the lungs in all directions is essential, and this may only be had by due attention to breathing. Constant physical exercise in lifting tends to draw the muscles down, while deep, full inspirations expand in all directions—lungs, chest and muscles as well.

# DEFINITIONS.

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## DISEASE.

Disease is any departure in the system from a normal condition, or standard of the structure or office of any part of the body. It is termed Organic, when associated with an organic change in the normal structure, and Functional when simply the office is disturbed, and no change is perceived in the structure of the part.

## PATHOLOGY.

Pathology explains the origin, cause, structural changes, history, morbid conditions, etc. Study of individual diseases constitutes special pathology. The nomenclature consists in naming the diseases, and this is usually intended to define the locality and condition involved, as well as name of structure implicated.

## ETIOLOGY.

This is generally applied to the subdivision of general pathology which treats of the causes of disease.

## HISTOLOGY.

As this has to do in the treating of the minute anatomy of the system, microscopically, it is not of much use to the general practitioner, and should be studied by the physician separately.

## SYMPTOMATOLOGY.

This is a term that signifies "signs of disease." A careful study seems necessary. The symptoms of morbid changes vary according to intensity of or character of the alterations in a part and the structure involved. The evidences of changes manifest themselves by special signs or symptoms, and are objective when seen by the observer, as in redness,

swelling, temperature, mobility, etc., and subjective when known or felt by the person afflicted, such as numbness, pain, vertigo, nausea, etc. The study of this subject is the most interesting of any to the practitioner, for a knowledge of the symptoms renders certain in his mind the character of the disease and the locality, as well as the means to be employed in the treatment of it. The complications, sequelae, etc., should be considered, for they often have to do in the regulating of the kind and character of the treatment to be instituted.

#### DIAGNOSIS.

This is the science of discerning the nature and character of the affection, the exact comprehension of the case, origin, seat, nature of morbid conditions.

#### PROGNOSIS.

To prognose a disease is the ability to tell its probable ending, and this can be done only by long experience and observation from clinical cases. Prognosis depends largely, sometimes, on the nature of the means employed in the treatment. Many diseases that were thought to be incurable in former years, by certain methods, are now treated successfully by others, so that our prognosis depends largely upon the means employed in the treatment.

# THE NERVOUS SYSTEM.

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## THE IMPORTANCE OF THE NERVOUS SYSTEM.

When it is known that the nerves are the media through which all motion, sensation, as well as sympathy, throughout every organ and tissue in the body, are communicated, and a complete supervision of the manufacture, selection of all of the material that enters into the structure of every element, the direction of distribution, building up, tearing down and eliminating at the proper time, place, through the proper channels, their importance will be apparent.

That there are various opinions regarding the nervous system is conceded. That many theories are published, reputable, standard authorities testify. That the medical profession begins to believe that nervousness has its origin in or connected with the nervous system, volumes published abundantly exemplify. That we have a nervous system is no longer a mooted question, but from what has already been written and said about the especial offices these nerves perform or what the nature of their performances are, seemingly little is understood.

Anatomists tell us that we have twelve pair of cranial nerves, which have their origin inside of the cranium, and a spinal classification which originates in the medulla and extends through the foramen magnum down the spinal column. The distribution of nerves is pretty fairly shown by all of the works on anatomy of to-day, and physiologists have done well in describing their special official character.

The question now arises, what has this to do with Osteopathy? We answer, much every way, for we design to show that this science is based solely on nervous influence, and that without due regard to the nervous system but little may be accomplished in our understanding of, or the consequences of,



Osteopathic manipulations, or disease, its cause, treatment required, where to apply it, or anything about it. More devolves on an understanding of the action of the nervous system than the "luxation of the atlas." It has been a question with me since my attention has been called to investigate the nervous system, whether our physiologists have not come to hasty conclusions about how the nervous system controls. Looking over various authors regarding this matter, we find that all are of the opinion that the cranial nerves originate in the head. There is no difference as to the origin of the spinal nerves starting from the medulla oblongata, but there seems to be confusion as regards how sensation, motion and sympathy are carried on. The most of them assert that nerves branch, and that these branches have separate offices to perform, and that fibers run to certain localities, form ganglia, and from these ganglia new influences are generated, new nerve fibers originate, and are thus regarded throughout the whole system; and that because a nerve terminates in the tongue it must necessarily be a nerve of feeling. From long observation we have come to the conclusion that, to make out a rational system of nerve distribution, the literature on this subject should be worded differently, or entirely rewritten.

Not wishing to appear presumptuous or egotistic, but somewhat original on the plan of distribution, control and origin of the nervous system, I make this startling and entirely new assertion: All nerves originate in the brain. I assert this as an axiomatic, foregone conclusion, for the following reasons: First, the nervous system consists of bundles of fibers, composed of the same substance as that from which they originate—similar in structure as the brain itself—including its coverings, arachnoid, pia mater, dura mater, etc. These fibers convey intelligence to the parts to which, and in which they are distributed, and only influence at their ends, and through their footlets or terminals. Each motor and sensory nerve coming from its origin in the brain from whatever locality, ends with a sympathetic footlet, and through



PLATE X.—Vibration of Facial Muscles.



this sympathetic fiber intelligence is communicated, direction is given there, impulse received, execution of the order at once ensues. To make this matter plainer, suppose the submaxillary gland should be required to generate a secretion to moisten the mouth—the mucous membrane there—and to mix with the food; what action does the nervous system perform? In the divine economy regarding the human system certain glands manufacture certain kinds of secretions, and others manufacture other sorts of secretion; all of which go through their normal outlets, to be appropriated accordingly. Now that perfect order may be had in this particular gland, it must be superintended by mind, and we will suppose that this mental influence is conveyed through the sympathetic nerves, as they of themselves have no sense, either of feeling or motion; the thought, starting at the origin of the line of communication, is transmitted to the farthest end of the line, and there ending in a footlet directly in contact with a motor footlet—one of the servants of the sympathetic—the executor of orders from the sympathetic; and through a laboratory of wonderfully complex construction, through which the blood passes, there is required to be manufactured a certain chemical (alkaline, for instance). This sympathetic nerve superintends the selection of the basic principles from the blood that make up this compound, and then sees to it that every detail is carried out, so that a perfect adaptation to the purpose intended is consummated. Who is ready to assert that all this comes by accident?—especially when the same thing occurs in every other department in the manufacture of every other organic substance the whole lifetime of the person whose body this sympathetic nervous system controls?

The nerves should not be understood as starting from ganglia or plexuses, for that would be admitting that each ganglion would be a nerve center, and this would make confusion worse confounded all over the system. While it is said by Dr. Watts that “The Lord works in mysterious ways His wonders to perform,” we find that all of His ways are accord-



ing to the very strictest order, carried out to perfection in every detail. To assert that we have twelve nervous systems in the head, and thirty-one separate nervous systems in the spinal cord, and a chain of them in the abdomen, would not comport with facts, nor be at all consistent with reason.

It is said by all of the authorities examined, anatomists and physiologists, that the nerves have "branches." A more inconsistent idea could not be advanced, when we take into consideration that all nerves influence action at their terminals, and that a direct line of communication must be had from origin to terminus before any execution can be effected. To understand this matter fully, we will suppose—and that it is a fact—that nerve fibers originate in the brain as separate and distinct lines of communication for a special and distinct purpose, to connect with terminals of other fibers, which also start in a nerve center in the brain, and these separate fibers end in every tissue in the body, not being disjointed, relayed, resupplied in ganglion, but each fiber has a separate and distinct office to perform in the human economy, directed by a Divine Mind, whose control is ever omnipresent—everywhere in the body, seeing that every detail of every order is carried out to exact precision. Starting at the corium we have fibers terminating in the tissues all along the course of the line, like a bundle of fine thread or hairs of different lengths, cut off along the wisp, as it were, and the longer ends continuing to the farthest-off recesses of the body. This is easily understood when it is shown that a congestion of the corium on the top of the brain receiving an extra supply of blood from a bruise, paralysis is instantaneously produced on the opposite side of the body clear down to the end of the hallux. Each and every chemical change that takes place in the system everywhere, of every kind and character, is the result of nervous action, or mind acting through it. This we understand to be the physiological action of the nervous system, and, regardless of our will or nil, awake or asleep, is essential to our physical well-being. These facts understood, furnish

a whole lot of information in the direction of our comprehension of what disease is and how it is produced. The circulation of the blood, containing the inorganic elements in solution, is not only controlled by the Sympathetic Nervous System in the larger vessels leading from the heart, by controlling the peristalsis of the muscular walls, but into the finer arterioles and on into the capillaries, and mysteriously selects from it, while passing through the capillaries, such elements as are essential to the building up of material in the immediate vicinity of the capillaries, but marshals the waste material in due order and directs its onward course through the lymphatics on and into the veins beyond the capillaries, to be carried back to the heart, but continues its superintendence over the elements thus drawn from the blood in the capillaries, placing each atom in its proper place, so that the whole system is renewed at all times and all places at the proper time, everywhere in the body. The sympathetic nervous system is the great one that presides over all the functions in the body. It is called "sympathetic" because of its intimate relationship with every other part of the body. It superintends and energizes all of the processes of growth, repair, tissue building, respiration, circulation, and the elimination of the waste material from the tissues.

"It is the sleepless sentinel who stands at the gates of life as long as we live, even a hundred years, and never sleeps for a single moment, night or day. Nothing short of lethal doses of narcotic or anæsthetic drugs can wrap it round in slumber robes and stretch it on its dreamy couch. It never sleeps but once, and that eternally. It is that body servant of yours who never deserts you nor quits your service night nor day, for a single moment, while you live; a friend that truly sticketh closer than a brother, watching every heart-throb and every breath you draw. It is that butler of yours who, without orders from you, looks after the nourishment of every bone, muscle, nerve and tissue of your body, and provides you with every well-spring of thought and emotion. It is that deft

artisan who oils every joint in your frame, and keeps it from cracking and rasping with friction and loss of mobility; who lubricates all of the surface of the body, internal and external, so that it does not dry up and crack to pieces, nor drip with excessive unction. It is that faithful servant who without murmuring pumps your breath and blood for you through the long hours of the night while you sleep, and through the busy hours of the day, when you are too busy to think of breath or blood. It is that janitor of the temple of your soul who keeps up the fires in your bodily frame and maintains  $98\frac{1}{2}$  degrees of temperature throughout every department of the 'house not made with hands,' through summer's heat and winter's cold, whether you live in the tropics or 'on Greenland's icy mountains.' It is that cunning servitor who always stands at the window of your eye and opens and closes the iridescent curtain of the iris so as to let in just so much light as to enable you, in the glare of noon or the shadows of twilight, to see with comfort and pleasure all the beauties of the world around you. It is that faithful warden who stands at the gateway of your stomach and reports instantly to the brain whether you, in your ignorance or stupidity, put into your mouth a delicious fruit or a corrosive poison. It is that cunning mechanic who sees to it always that your blood, as it courses furiously through its channels, is composed of so many white and so many red corpuscles, and that each corpuscle carries with it so much lime, sulphur, phosphorus, carbon, oxygen, hydrogen, and nitrogen, and all of the other primal elements of your body in exact proportions, and sees to it, when they each lay down their burdens at the gateway of life, each atom thus carried into the economy by unerring selection, is built up into frame and wall and member and tissue of your body, always renewing life in the midst of death throughout the citadel of your being. And that same wise warden looks to it that every corpuscle or atom, on its return journey through other channels, is loaded with worn-out and effete materials, to be carried out of the great temple of life, to again mingle with

the clods of the valley. This nerve is the invincible defender of the fortress, who, amid the havoc of shot and shell, of saber stroke and leaden ball, the shock and concussion of collision, the delirium of typhoid and the wreck of insanity, still guards and protects and repairs the breached fortifications of life. Through all the infinite vicissitudes of life the great Sympathetic is still our best earthly friend and benefactor. It is the great clock in the temples tower that calls for every passing change of life, wound up to run a hundred years; and as it ticks your allotted time, it marks the age of speechless, puling infancy, when you can neither understand nor tell your own wants; it measures off your youth and strikes the hour of manhood; it calls you to the mystery and mating time of love; it rings the dinner bell each day of healthy life and calls the hour of sleep and rest; it changes the epoch of gray hairs and slower gait, of waning vision, of shrunken shanks and biceps; it sets your voice in piping tones to prating of the times that were, the deeds of former days, and youthful prowess, and when those deeds are told, you sigh and say, 'Ah, me, I am growing old.' And then, some day, when ripe and ready for the change, it rings the curtain down and closes up your stage from mortal gaze, and as one who quits a tenement long kept, and gives it over to worms and mould and dust, to cobwebs, bats and flies, its wheels turn slowly round, the hammer fails to strike; the hours are tolled, and this same friend goes out from long control to terminate a long career, lies down itself and goes to sleep—that sleep that knows no waking. Then swift decay comes and covers all with mould, and orders with dispatch assimilation with the clods that heap the valley, and leaves you there, with time, the elements and God. Who can comprehend its greatness, its countless capabilities, the vastness of its service, or the infinitude of mind that planned and constructed it?"

The above but feebly outlines the vastness of the functions of the sympathetic part of the nervous system. Opening the avenues a little wider, starting with the first impulse



noticeable in the functions of the cranial nerves, we perceive the sense of smell, then of motion, sight, feeling, tasting, seeing, hearing, all being special senses. These are marvelously wonderful. Then to trace the process of digestion, absorption, assimilation, manufacture of new material, the removal of the old, the chemical changes that are constantly going on in the whole body, opens to us a field that expands as we enter wider and wider, and this subject becomes the more interesting when the causes and the cure of disease are considered. Osteopaths claim that when all of the fluids are freely, normally circulating through their proper channels, all of the muscles are in their normal condition, and all of the nerves are free from pressure, health is the condition experienced.

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#### THE VASO-MOTOR NERVE CENTERS.

It is said that such a thing exists in man, and to have its origin in the medulla. The exact center is supposed to be slightly above the calamus scriptorius. Recent observations concede to this set of nerves the power to control innervation of blood vessels, and that there are in this system afferent as well as efferent fibers. It is also said that the afferent set irritated excite or depress the activity of this center, and in a reflex way cause contraction or dilatation of the blood vessels. We are informed by anatomists on this subject that on irritation or stimulation of these filaments atonic contraction of the walls of the blood vessels occurs, and we are also informed that irritation of any sensory nerve of or in the body results in general contraction of the blood vessels, and that there soon occurs a relaxation of the walls of the vessels in the immediate vicinity of the parts irritated, that this activity is perceptibly decreased when the pneumogastric nerve is irritated.

That two actions occur or are the result of stimulation of the vaso-motor nerves generally is not yet thoroughly settled. The vaso-motor and the vaso-constrictor fibers both occupy-



PLATE XI.—The Divulsion of the Nares.



ing the same sheath may be, but that one set of fibers carry two sorts of influences does not comport with observation. That the sympathetic nerves are all vaso-motor we incline to believe, because they surely control all action in every part of the body. That some points are more vulnerable than others is conceded. That there are certain fibers which terminate around the great openings of the heart and control its action and all of the blood vessels, the circulation therein, is true; but do not other sympathetic nerves end in other important structures and control them? When it is understood that all motion in the body, when controlled at all, is controlled by the sympathetic nervous system, we shall not be greater sticklers for a vaso-motor nerve center than we shall be, or ought to be, for a brachial plexus. The important practical point for consideration by the practitioner is, that we influence action in the blood vessels by stimulating the surface, skin and deeper structures in the neck, in the region of the occiput, and down at the sides of the spinous processes for three or four inches, embracing what we term the cervical plexus, or the ganglia along the sides of the neck. A steady pressure with thumb and fingers influences circulation. The degree of pressure governs results. A slight pressure stimulates, a hard pressure inhibits, slows heart's action, lessens irritation, or it ceases, and fever subsides by pressure in this region for a few moments. That these filaments convey influences to the heart and thence to the muscular walls of all of the blood vessels, seems to be a fairly well established fact. This is another step in advance of the use of a febrifuge in the way of medicine, and is used by the Osteopath successfully in treating fevers of the highest temperature and of the most malignant type. Strange indeed that we should be so slow to learn that the means for our own, as well as that of our neighbor's welfare are always within our grasp, if we only knew it!



## NERVE CENTERS.

In the treatment of diseases osteopathically, it is claimed by many (ignorant, of course, of the fact) that certain nerve centers—for instance, those that control action in a vital organ—are reached or stimulated directly by contact along the spine or back of the neck, and therefore osteopathic treatment “consists in treating nerve centers.” A more erroneous statement could not be made. It is wholly devoid of truth. When it is an established fact that all nerves have their origin in the calvarium, the assertion that we reach nerve centers by manipulations, directly, is too palpably untrue for ordinary intellect to entertain. That certain definite results follow the manipulations of the body in different localities, in the various methods used by Osteopaths, is true, but why? Not on account of the treatment or stimulation of nerve centers. We exercise influences that we have no conceptions of in our manipulations, but that certain results follow certain manipulations is often demonstrated, but how they are brought about in the system is as obscure as the sun at midnight. Anatomy of recent years has taught us that nerves convey influences from a given center to a periphery, and that they in some way control action, sensation and sympathy. Observation confirms this notion or fact. Osteopaths are founding a system of healing on the basis of nerve influence, and investigation becomes interesting along this line, for “our craft is in danger” if it should be proven, and mysterious drug action will be abandoned, and reliance will be no longer had on them.

Starting at the base of the occiput, then, we begin our treatment of all diseases, for the simple reason that disease is the result of disturbed action of the source of vitality—that vitality is “in the blood,” and here, at the base of the brain, in the cervical region, we find terminal nerve filaments that, if stimulated, control the circulation of the vital fluid—the blood. The blood containing all of the inorganic elements from which is drawn the substance that makes organized tissue, it is essential that the unorganized elements be carried to

the various parts of the body needing said elements, and as they are only carried there in the blood, and that through arteries, and that the action of the walls of these vessels wholly depends upon nerve influence, it becomes apparent to the observer that it is essential to know how to influence nerve action.

The sympathetic nervous system superintends and, as we contend, controls every action in the body through the motor nervous system. The union of these two at their terminals constitutes a quorum—the sympathetic directs, the motor executes. Therefore, in order to carry on any process in the body, these two nerve terminals must have connection with each other. A modified or retarded suggestion by the sympathetic, and a sluggish execution of the order by the motor nervous system, produce all of the pathological disturbances known as disease. This will explain to the pathologist much that has heretofore been conjecture. These premises are self-evident. It is said that certain secretions are manufactured in certain glands by the sympathetic nerves; but has any one explained how it is done? It requires two forces in nature to accomplish anything.

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#### THE ROLE THAT THE SPINAL SYSTEM OCCUPIES IN THE TREATMENT.

The spinal cord is not merely a channel to and from the brain, but regionally there are certain endowments that become of primary importance to the Osteopath. After leaving three or four of the cervical vertebrae, as we descend, every portion becomes a source of great importance. There are regions that, being influenced, reflect that influence in such a way as to demonstrate the supreme control of the portions of the body corresponding to the distribution of nerves emerging from the spinal regions. These important starting points in the treatment of disease determine results. Disease in parts supplied by spinal nerves may generally be located by

the presence of tender spots along the spine in the locality of the emergence of the nerves leading to and supplying the parts pathologically concerned; hence become an index thereto. In the distribution of the various filaments therefrom we have another evidence of unvarying uniformity of supreme supervision of the house we live in. Through these filaments, beginning at the foramina in or along the spinal column on either side, and inducing proper stimulation, we have learned, starts up new life in the parts supplied by these nerves, and diseases thought to be incurable by other means disappear.

The thirty-one pair of nerves that emerge from the spinal column exercise influences little understood by the large majority of people, and, we opine, by the medical world. From the three or four upper dorsal and the four lower cervical regions, starts out a force from the brain that invigorates the entire man, starting into activity vital organs, and perpetuating their action beyond human computation or imagination. The various seats of the energies of the whole man seem to, and do, come out of these foramina. For convenience and practicability therapeutically, we prefer to divide the spinal column into six grand divisions, to-wit: The Cervical, Brachial, Dorsal, Lumbar, Sacral, Coccygeal; the Cervical embracing the four upper vertebrae; the Brachial three lower cervical and first dorsal; the Dorsal the first dorsal and including the twelfth; the Lumbar the five lumbar vertebrae; the Sacral all of the sacrum; and the Coccygeal, the last, including the last set of ganglia on the inner side of the coccyx, called the ganglion of impar. With these divisions we have to do in the treatment of diseases of all forms and conditions, and through these various divisions we exercise influences that result in such marvelous cures as astonish the world. To study and to know the distribution and special functions of these spinal nerves qualify us to practice the healing art with a certainty not heretofore reached by any other method.

Whether influences start from the pressure directly ap-

plied near these foramina, or through the terminal filaments terminating in the integument, or through the muscular contraction on the corium of the nerves, or whether directly through the ends of the sympathetic nerves to the brain, starting forces from it we may never know certainly, but that changes do take place through this method, abundance of evidence accumulates.

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#### THE GENERAL OUTLINE OF SPINAL NERVE INFLUENCE.

It is an accepted theory that nerves coming out of the foramina on either side of the spinal canal, through the foramina, are spinal nerves. These claim our attention here. The reader, if he is interested in the treatment of disease by this method, may be assured that surprises will often occur in his application of these treatments. The results of this treatment come through stimulation of nerve filaments which control the circulation of the fluids, the manufacture of organic material out of the inorganic substances held in solution in the blood, the elimination of the waste, and the building up process in every tissue in the body.

These we understand to be the sympathetic nerve filaments—not nerve centers. The learned Prof. E. H. Pratt, of Orificial Surgery fame, of Chicago, Illinois, demonstrated, years ago, that nerve waste resulted from muscular contraction or cicatricial impingement on sympathetic nerve terminals; and has very largely revolutionized the thought of the advanced thinkers and actors in the surgical world, demonstrating his theory by years of successful operations to relieve pressure. And while he recommends the use of other means than ours, the object is the same, and results show the correctness of the conclusion that the sympathetic nervous system controls when not forestalled.

It was long thought that the “dislocation of a rib” was responsible for all the mischief, or a “dislocated hip,” or a “slipped vertebra,” had much to do in producing disease of



all kinds; but the intelligent in the ranks of Osteopathy are ready to concede the causes to other sources, and now it is a pretty well settled fact that dislocation does not play such a rôle in the production of disease as formerly. Some signs begin to indicate a practical, physiological disturbance as the general factor in producing many of the ills that "flesh is heir to," and that a bone does not have to be "set" in every case that comes to us for treatment. The world surely "do move."

Theories about this and that cause of disease have been advanced, adopted; learned intelligencies of all schools have written great volumes to elucidate them, and time has shown their fallacy, and many remain as spectral ghosts to haunt mankind which in time will share a like fate. The masses bear the ills rather than fly to others they know not of. The education of the masses is the hardest work—the most difficult task to do, for it is with the people these new systems have to do, and the proper presentation of plausibility for their rejecting the old and adopting the new, is a herculean task. Solomon said a long time ago that "there is nothing new under the sun," and for fear somebody should rise up and present something new, the people, with one consent, decide not to investigate, for fear Solomon might be found to be mistaken.

The reader need not lose any nerve force on this proposition, for we have nothing new under the sun—for this has always been under the sun. Since Adam first exercised the prerogative of mobility, and demonstrated that locomotion could be made with his shanks and biceps, our system has had a place in the Divine as well as human economy.

It is not a matter of concern with us about reaching nerve centers directly, for these are inside of the brain, and inaccessible by direct contact; but that influence is conveyed from the terminals to centers there can be no doubt. When it is understood that nervous influence is exercised at *the ends* of the nerves, we may readily see that there is reason in *stimu-*



PLATE XII.—Manipulation of Muscles of the Neck.



*lating* nerve terminals. That there is a sudden change of the secretions in certain organs through the stimulation of nerves along the spine there is abundant proof. We reach the stomach, through the splanchnics by stimulating the dorsal region in the neighborhood posterior to the stomach, neutralizing an excessive acidity instantaneously, and relieve colic. We influence the terminals of the sympathetic filaments along the spine in the region of the twelfth dorsal vertebra, and exercise an influence over the secretions of the kidneys. We irritate or stimulate the lumbar region about the second lumbar vertebra, and an influence is exerted in the genital organs. These are some of the examples which fully demonstrate our philosophy of cure. Take, for instance, a case of excessive secretion of urine: we possess the ability to regulate, by simply stimulating certain portions of the lumbar terminal nerves, in a certain locality, beginning at the right place, and following up the stimulation in the proper direction. All other excessive secretions are controlled the same way. Nervous influence is the proper influence to bring to bear in the cure of all diseases. The nerves themselves are controlled by other nerves, and the smallest imaginable molecule of every atomic cell is under the direct influence of the sympathetic nervous system, and when we properly understand how to utilize it, direct it, relieve it of any and all abnormalities—in a word, know when its functions are interfered with, where, and know, too, how to right it, disease is simply under our control. The marvel of marvels is, how does the nervous system perform such wonderful things? To the student of nature who accepts demonstrations as proof, it can be readily shown that intelligence must permeate every tissue in the body in order to look after the building up, repairing the waste, taking care of the worn-out material, and looking after every department as needed, in such wonderful precision; and that this mind must have a perfect system about it or confusion worse confounded would soon end in chaos. It takes just so many elements to constitute the human system, and



these must be in exact proportion, and be held in solution during their passage through the various channels, and must give off exactly so much of this and so much of that particular element at the proper time and place, in order to maintain the weight, constituents and office of the various organs at all times, in all altitudes, countries and climates—and hence mind must be a prime factor in the business; and we insist that these nerve channels are the media through which this mind executes its will. If the communication is free from start to ending, the functions are properly performed; but if interrupted, intercepted, confusion reigns, and the degree is always in proportion to the quantity and quality of the obstacle or obstacles to be overcome. Hence our motto, "Take Off the Pressure."

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#### NERVE FORCE.

There is much said about Nerve Force. What is nerve force? It surely seems to be some inherent power in the nerve that is exercised by the nerve itself. That we have any nerve force is an assertion without proof, or even the semblance of truth. There is an expression equally as meaningless—Nerve Waste. What does that mean, if not the wasting of the nerve itself? There are so many terms used that confuse the mind, meaningless terms, that we are often at a loss to know what is meant by them. The best way to express anything is to state exact facts. What is nerve force? What is nerve waste? When we properly understand that nerves are only the channel through which force is conveyed, and that force is the result of chemical changes, and that chemical changes are the result of mixing chemical elements, we shall begin to imagine what the term "nerve force" signifies. Cut off the supply of the material that constitutes force, and you have a waste. Where does this supply come from? From the food eaten. These forces, then, come from the food eaten, chemically changed during the process of digestion,

assimilation, circulation. The circulation embraces general and special circulation, mixture and admixture, combination and recombination in every department in the physical organism, and organizes and disorganizes, renewing and changing forces constantly. The little tubes we call nerves are only the conductors of the intelligences carried on everywhere in the body at all times. The arterial set of tubes carry the material outward, distributing the material to the remotest confines of the various parts of the body, and the other tubes, called the venous system, carry it back to the great center—the heart, constantly, so that these conditions called waste and supply go on all the time. You may now understand what is meant by nerve force, or nerve waste. Freedom of the circulation means building up, impeded circulation means tearing down—retrograde metamorphosis. There is no force in a nerve any more than there is in a bone. The medium through which a force is conveyed is not the force. To say that we lose nerve force is to say we lose all force in the body, or some force. Does it occur to the reader that the letting down of the system in any degree or the rousing of it in any way is the result of the chemical changes that take place in the elements? If that is not understood, the comprehension of the meaning of disease has not dawned upon the mind of the reader. We assume that this body is a cosmos—a world within itself—of the world chemically, materially, so far as our bodies are concerned, and that our spiritual man is only an inhabitant endowed with personal, entire control of it, and that these tubes called sympathetic nerves are the connecting links that unite every department with the central station, and that through these various tubes is communicated, in a normal state, the intelligence needed everywhere in the body, to all of the material carried there through the arteries, even to the regulating the caliber of them.

The manufacture of the various fluids in the different parts of the body is superintended by the intelligence conveyed through these nerve tubes, and we are wont to call this

intelligence nerve force. These minute tubes, filaments, originate in the brain, are connected with the minutest portions of every tissue in our body. How intelligence reaches the various parts of the body through these tubes we may never comprehend, but that it does is not now questioned by physiologists. How this element called Neurin is manufactured, we can not tell, neither do we know how sulphur is generated in the muscular fiber, yet analysis has demonstrated that to be a fact. That the channels through which we are said to receive intelligence are five is a pretty well understood fact; but how is it deposited in or upon the tablets of the brain, subject to our demand for use, is a mystery to us all. Something from without finds its lodgment through these avenues that we call thought—intelligence; this, we are taught to believe, is thought—knowledge, intelligence. That is what we assume is the power within the physical organism that controls every department we call the body, through these organs we denominate nerves. Cut off the communication anywhere along the lines of their distribution, or abridge their sphere of action by change of structure in their chemical constituency, and you have what is denominated disease. Muscular fiber may be affected in the same way; so may any other tissue in the body be thus changed; and the change in the molecules of any element produces a change in every other part of the system, because the system is a unit—a cosmos. These changes result as a consequence of sluggish or impeded circulation of the fluids of the body anywhere, in any and every structure. The chemical changes resulting from decomposition of blood cells, as they are termed, are in proportion or exact ratio to the tissue involved, parts affected, locality and organ involved. In some instances we have fever as a result, in others a paralysis, in others a constipation, and in some others a diarrhœa, in another insanity. The nomenclature of disease is, and always has been misleading, and the treatment seems to have had reference more to the name than to the real pathological condition. The comprehension of the phil-

osophy and the true state of the case, as taught in this book, according to the real facts involved in the science, reveals causes as they are, and not after some hypothesis, and at the same time states fairly and fully the means whereby the causes may be removed. There are no clear-cut, comprehensive methods to be relied upon in the various systems purported to be remedial, but in most cases a "try potency," and if that doesn't do, try again. There are many remedies that have had their influences, and doubtless oftentimes seemed to satisfy both the doctor and patient—at least something was being done, that no doubt relieving the condition satisfied. We are not trying to disprove the efficacy of other systems, but to show up our own. The superiority of our system is the subject under discussion, and we expect to prove it to the satisfaction of every reasonable minded reader—as a drugless system of healing.

The metabolism and anabolism, as results of chemical changes due to the intelligence conveyed through the sympathetic nerves, are instances of the Divine mind—the omnipotence and omnipresence of an overruling Director that is ever superintending all His works in righteousness everywhere. To think of chemical changes going on everywhere in our body all the time, directed by an unseen, unfelt power, is indeed marvelous to contemplate. The same sort of mysterious change goes on all of the time in all this beautiful world we live in, and in all things in the world—in everything. It is simply an effort, or an action, on the part of the Osteopath to remove whatever obtrudes itself in the way of these agencies which keep up these marvelous and mysterious changes that, in a normal condition, produce results seemingly so opposite, and yet so harmonious that there is harmony everywhere, and yet a constant building up and tearing down of the material that constitutes bone, muscle, ligament, cartilage, hair, nails, skin, nerve, artery, vein, and gland, and all of the other tissues of this body of ours. To assume the prerogative of being able to mend the ways of Deity is surely most presumptuous on



the part of the created. It is not the object of this book to explain the author's theological views, but to show that there is something that we call Deity that we recognize as supreme, and that wisdom manifests itself in the direction of each atomic cell in the body. That this organism, this wonderfully marvelous structure, is a machine, as some would have us believe, does not comport with facts. If we could but lift this science from environments, out of the association of ignorant pretenders, whose sole aim in life is to mystify, to relegate its discovery to some unlettered, ignorant "witch of Endor," or some spiritualistic medium, who claims control of some Dutch-Indian spirit of modern times, or perchance in the Olympiad days of long ago, and that it has come on down the ages, touching and enlightening the minds of an occasional "mediumistic forecaster," and that within a very few years past it was discovered that "dislocation of bones" caused all the pathological discrepancies that flesh is heir to! The principles belonging to this science are physiological, anatomical, easily understood, taught, and rational, and need no mysterious mantle to obscure its meaning or cover up its scientific results. To say that all of it is discovered is to deny science, literature, philosophy, progress in knowledge. To say that it, under its present status of development, can not be improved, or a better manner of applying it improved upon, is unreasonable, untrue.

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#### THE NERVOUS SYSTEM AS A GUIDE TO DIAGNOSIS.

Beginning at the atlas—the junction of the occiput with the neck—we learn that we may start influences by manipulations that determine pathological conditions elsewhere, and that through a proper stimulation of terminal nerves we may control the action of various vital organs almost at will, depending largely on our knowledge of the nervous system. Here we impress the vaso-motor nervous system which seems to exercise such a marvelous influence over the peristalsis of



PLATE XIII.—Raising of the Clavicles on Table.



blood vessels, starting influences at the orifices of the heart, and thence along the muscular fiber of all of the arteries in every part of the body, completely controlling the caliber of the same, their peristalsis, the quantity and flow of all of the fluids in every department of our body; said to exercise two separate and distinct influences—afferent and efferent, conveying these to and from the heart; somehow influencing the whole system in such a manner as to convey intelligences to the brain of the exact status of every part, pain, pleasure, joy or sorrow, rejoicing or grief, health or disease. This is the most marvelous phenomenon imaginable. While it is supposed to be situated in what is called the cervical ganglia, experience has partially demonstrated, at least, that such an influence may be produced or achieved all along the spinal column, clear down to the last ganglia, at the lower end of the coccyx. Recognizing the all-important fact in this system, a complete supervision of the nervous system by this system called the sympathetic, and understanding that the filaments of this set of nerves begin in the calvarium and end everywhere in and on the surface of the body, controlling all action, motion and sensation, we can readily understand in a measure how we effect motion through these filaments (for we do not reach nerve centers directly in our manipulations). At the base of the brain, on the posterior aspect of the upper portion of the cervical region, there are collected together a greater number of sympathetic nerve filaments than in any other locality reachable with the hand or fingers, hence this becomes our vulnerable point, and here we start impressions that seem to control motor influences in every other; and, having learned this, we utilize this salient locality, and begin our treatments here. This division of the spinal nerve is recognized as the Vaso-Motor Nerve Center. It embraces four vertebral spaces—from the base of the skull to the lower margin of the fourth cervical vertebra. The next important division, beginning at the fourth cervical vertebra, and embracing all that part of the cervical region as far down as and



including the first dorsal, is what is commonly recognized as the Brachial Plexus. From this point down the dorsal region, including the twelfth dorsal vertebra, we have the Dorsal Plexus. Continuing from the lower margin of the twelfth along down the column to the upper end of the sacrum is embraced what is termed the Lumbar Plexus. The Sacral Plexus, of course, embraces the whole length of the sacrum to the coccyx. The Coccygeal Plexus, situated on the inside of the coccyx, is called the ganglion of impar. The importance of these divisions will appear in due time, later on.

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#### CONSIDERATIONS EXTRAORDINARY.

The division of the nervous system, especially the spinal, into groups of plexuses, only serves the purpose of locality of distribution, assumed origin and effect of a stimulation in this or that particular locality somewhere else, or at some particular exit of a spinal nerve, or the particular cluster of sympathetic or other filaments. The main consideration that we desire to emphasize above all others is the control exercised by the sympathetic nervous system, whose filaments terminate everywhere in the system, and that influences are exerted at the ends of these nerves, and that these are executed through the motor nervous system and the sensory nervous system. The motor nervous system executes, as it were, the orders of the sympathetic; and the sensory nervous system feels impressions, and these impressions are conveyed to the headquarters through the sympathetic nervous system. Recognizing these principles, we are guided in our conclusions in reference to the condition or conditions of various parts of the body. There are no sensations without impression—pressure or contact at the ends of nerves. Knowing the origin, course and ending of a nerve, and knowing the office of a nerve, our diagnosis of conditions in the parts supplied thereby becomes clear to our vision. The nerves penetrating through muscles have no influence on that muscle, but the influence is exer-

cised by the nerves ending in the muscle. Understanding this fact, our diagnosis should be clear as to the nerves involved in a given pathological condition. And as the nervous system controls the circulation of the fluids, it may be seen that, should interference in the normal action or office of the nerves distributed to certain localities be made, the results could be fairly calculated. If, for instance, cold should contract muscular fibers through which a trunk or bundle of nerve fibers passed, impinging upon it so as to interrupt its normal action, the influence would be felt at the end of its distribution, and if a motor nerve, motion in the part to which it was distributed to a greater or less extent would be disturbed. If a sensory nerve, sensation would share a like effect; and if a sympathetic, there would be impairment of the function of both motor and sensory, for all action, as well as all sensation, is under the control of the sympathetic. If the communication at the ends of the nerves is cut off, failure of the execution of function ensues. To regard the nervous system in any other light, confusion involves our every effort to treat pathological conditions. For instance, suppose we recognize any nerve passing out of the spinal cord as one nerve, then, after it penetrates the muscular tissue a short distance, it divides, one branch terminating in one muscle and another in some other muscle (instance, the Anterior Thoracic). Would it not seem that the same origin is the common sense view to entertain? Our anatomists tell us that one branch arises from the outer cord and another from the inner cord. Suppose, now, that pain is found in the pectoralis major, our manipulations would be directed to the pressure on the branch that supplies the pectoralis muscle. There would be no use or propriety in our treatment of the branch that comes from a different locality, and that supplies another muscle. There is such a world of confusion in the knowledge of the distribution of the nerves, the branch idea, and the supply of tissue through which nerves pass, that no correct conclusion is arrived at as to pathological conditions, under-

standing of causes, or manner of treatment required. When it is understood that every filament, wherever distributed, has its origin in the brain, goes to a certain place, exercises a particular function, and that at the end of that nerve; and that every other nerve does the same thing, being distinct in identity, whether emerging through one foramen with a thousand or a million of other nerves, every one representing a distinct appointment, and filling a place in the animal economy, and there ends—the influence of pressure may be better understood. The nerves that supply one muscle do not supply another—never. If the reader gets this idea into the mind, Osteopathy will have some meaning to it. Otherwise it will present the same jargon to his mind as the medicine theories do. We recognize the fact that nerves originating in the corium may end anywhere along the line of the course pursued, whether it be the side of an artery or in the tissue at the remotest point of the body under or in the skin of the hallux.

There are, it will be understood, twelve places of origin in the brain for nerves, and each and every fiber has its distinct origin and ending—with no branches. We do not regard the nervous system as having branches, nor originating in ganglia, nor anastomosing. Everything in and controlling the physical organism has mind to superintend its every part, and that mind acts in harmony with itself in all other things, and until it is demonstrated that something else than nerves conveys through them the intelligence of a Divine Mind, I shall insist upon the truth of the statement made regarding the origin and distribution of the conductors of this intelligence. Take, for instance, the renal splanchnic nerve: Stimulation of sympathetic nerve filaments, reached at the twelfth dorsal vertebra, increased action of the kidneys ensues. Take the lower lumbar nerves: Stimulation of them upward lessens the irritability of the neck of the bladder. Special nerves control certain tissue, and certain individual localities. Certain filaments of the pneumogastric nerves control certain results



or generate certain secretions in the walls of the stomach, and certain others oversee the elimination of that secretion at particular suggestions or impulses—and so it is everywhere in the system. If this were not the case, pray tell how all of the elements are so perfectly manufactured in all of the glandular systems, and certain chemical constituents are removed from the blood in certain organs and certain others in other glands? In the salivary glands we have alkaline secretions formed, in the liver we have an alkaline, but in the stomach wall we have an acid secretion. These things do not happen. It is an every-moment occurrence from youth to old age.

It should be no trouble for the reader now to comprehend the philosophy of the cause of disease. Recognizing the fact that influences of intelligence are cut off anywhere along the line from beginning to terminus, being the only channel of communication, is it not plain that action beyond the cut-off is nil? The contraction of muscular fiber, direct pressure from without, or an immediate or gradual accumulation of blood or other fluids around the nerve or at the terminal, interferes with the function of the said nerve, and if a bundle of them in the same way, the effect is the same. And now, as it is the province of the sympathetic nervous system to control selection, assimilation, etc., and as this system controls circulation in the capillaries, as the blood passes through these tubes, there is the proper amount of and number of the elements drawn therefrom to supply the demand at that particular place so as to build up waste or worn-out tissue, and at the same time direct the elimination of the material that has served its purpose in the physical economy, through the lymphatic tubes into the venoles or veins beyond the capillaries, thence to be conveyed back to the heart, and from there to the lungs for renovation. This constant round goes on in every part of the body all the time, in a normal condition. This is what we mean by a physiological condition—when there is no obstruction anywhere, undue pressure, contracture of muscular fiber or paralysis of nerve centers so as to arrest nerve



action. The philosophy involved in the circulatory apparatus, the nervous system that controls it, its anatomy and its physiology, make it easy to comprehend how pathological conditions are changed by manipulations, and the necessity of understanding what normal action is, so as to be able to correct abnormal conditions when they occur.

It is a notorious fact that somehow, through nerve influence, there are maintained in the system two antagonizing elements—the Positive and the Negative—and that these are generated in certain parts of the system for special and distinct purposes, and that when the union of these poles takes place, the current established, neutrality occurs, and the excess of the acid or the alkali so changed as to reinstate normal action in the parts disturbed or exercised thereby. Whether the scientific world has observed such a condition in the system or not, we have not seen an account of it, but that it is so our observations in numerous instances have abundantly demonstrated. We have an example in point in the pathological condition called colic. The excessive acid in the stomach contracts the muscular fibers so as to compress the sensitive nerves in the stomach walls, hence pain. This excessive acidity is due to incoordination of the pneumogastric nervous system and the splanchnic nervous system, one generating acid and the other alkaline secretions. Proper pressure—stimulation of the sympathetic filaments on the sides of the spinous processes over the splanchnics—corrects the acidity. Colic is instantaneously relieved by the proper manipulation in the splanchnic region.

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#### THE ORDER OF THE SPINAL NERVES.

The First Cervical supplies the rectus lateralis, rectus capitis, anticus, posticus, sterno-hyoid, sterno-thyroid.

The Second and Third Cervicals supply the sterno-mastoid, trapezius, scaleni and neck, omo-hyoid and diaphragm. The sensations at the back of neck to vertex, occipitalis major,

minor, auricularis magnus, superficialis colli, and supraclavicular.

The Fourth Cervical supplies the diaphragm, deltoid, biceps, coraco-brachialis, supinator longus, rhomboid, supra and infraspinatus. The sensations from the fourth cervical to the second dorsal, reflected to the eye, on irritation of the muscles of the neck, anterior surface of the shoulder, outer arm, supraclavicular, circumflex, external musculo-cutaneous, and cutaneous nerve terminals.

The Fifth Cervical supplies the deltoid, biceps, coraco-brachialis, brachialis anticus, supinator longus, supinator brevis, deep muscles of the shoulder blade, rhomboid, teres minor, clavicular part of the pectoralis, and serratus magnus. The sensations are at back of shoulder and arm, outer side of arm and forearm to the wrist (subclavicular, circumflex, external cutaneous, posterior spinal branches).

The Sixth Cervical supplies the deltoid, biceps, brachialis anticus, subscapular, clavicular portion of the pectoralis, serratus magnus, triceps, pronators, rhomboid and latissimus dorsi. Reflex sensations from the fifth and sixth, that go to the triceps, affect also the elbow, producing extension of the forearm. That portion including the sixth to the eighth cervical supplies the posterior portion of the hand, and causes extension of hand.

The Seventh Cervical supplies the long head of the triceps, extensors of wrist and fingers, pronators of wrist, flexors of the wrist, subscapular, pectoralis (costal part), serratus magnus, latissimus dorsi, and teres major; causes closure of wrist and fingers. It is distributed to the hand, palm of the thumb, index and one-half of the middle finger, through internal cutaneous, radial, median and posterior spinal nerves.

The Eighth Cervical supplies the triceps (long head), flexors of the wrist and fingers, and the intrinsic hand muscles. Through the internal cutaneous and ulnar, the hand, back and palm, and inner border of the forearm.

The First Dorsal supplies the extensors of the thumb,

intrinsic hand muscles, thenar and hypothenar muscles, and the sensations are chiefly on the inner side of forearm to near the axilla, through the internal cutaneous, and lesser internal cutaneous or nerve of Wrisberg.

The Second Dorsal sends sensations to inner side of arm, near and in axilla, through the intercosto-humeral.

The Second to Twelfth Dorsal supplies muscles of the back and abdomen, erector spinae. The Fourth to Seventh Dorsal supplies the epigastric region, and from the seventh to the eleventh the abdominal region. There are vaso-motor centers from the second dorsal to the second lumbar region. The skin of the chest and abdomen, in bands, running around and downward, correspond to spinal nerves. The upper gluteal region is supplied by the intercostals and dorsal posterior nerves—with sensations.

The First Lumbar nerve goes to the cremasteric, with third lumbar supplying the inner side of the thighs, and the Second Lumbar supplies the vastus internus muscle, and with the first, through the ilio-hypogastric and ilio-inguinal, supplies the skin over the groin, and the second supplies the outer, upper and front of the thigh, through the genito-crural and external cutaneous.

The Third Lumbar and the Fourth supply the sartorius flexors of the thigh, extensors of the knee, and abductors of the thigh, and through the gluteal send sensations to the front and side of the thigh (outside), and inner side of the foot and leg through the internal cutaneous and long saphenous, and obturator.

The Fifth Lumbar supplies the outward rotators, flexors of knee and ankle, peronei muscles and extensors of the toes, and through the external popliteal, external saphenous, musculo-cutaneous and plantar exerts an influence in these parts.

The First and Second Sacral supply the calf muscles, glutei, peronei, extensors of the ankle and small muscles of the foot; reflexes to the plantar region come from the fifth lumbar, and second sacral reflex influences to the back of



PLATE XIV.*a*.—Arm Movement, Patient on Table.





buttock, side of leg and ankle, sole of the foot and dorsum of foot.

The Third, Fourth and Fifth Sacral send filaments to the perineal, muscles of the bladder, rectum and external genital, and are supposed to be the genital center, vesical center and anal center, sending to these parts the small sciatic, pudic, inferior hemorrhoidal and inferior pudendal.

The above is all that the anatomies and physiologists teach on this important system, so far as reflexes are concerned, and origin of the nervous system that controls and regulates sensation and reflexion.

The Osteopathic practice includes all these, but has advanced greatly in regard to the controlling influence the nervous system exerts, and does not regard simply the reflexes so much as the controlling influences of the sympathetic nervous system, in superintending and directing repair and waste, and its supreme control over every tissue in our body. What therapeutical benefit are the sensations in the cure of disease? The thing to do is to remove abnormal obstructions and permit normal and uninterrupted action throughout every department, and regard reflexes as simply the influences brought about as suggestions and declarations of the sensory nervous system as to its impingements, etc., in the great economy of nerve influence. Our interest as Osteopaths depends solely upon the knowledge of the sympathetic nerves.

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#### CERVICAL AND DORSAL NERVES.

The first cervical nerve and the second cervical ganglion embrace the spinal, cervical plexus, hypoglossus, and the glosso-pharyngeal.

Between the second and the third cervical vertebrae we have the anastomosis (apparent) of the superior cervical ganglia, with first cervical pair.

Between the second and third cervical vertebrae we have the superior cervical ganglia, connecting with the third, the

pharyngeal and carotid filaments (branches) of the superior cervical ganglion, pharyngeal and inter-carotid plexus.

At the second, embracing the second, third and fourth to the fifth, we have the vaso-motor ganglia, which control the circulation.

At the third cervical begin the phrenic ganglia, embracing the fourth and fifth cervical; and between the third and fourth we have the pharyngeal and inter-carotid plexus and the laryngeal branches, the right pneumogastric and the vagus.

At the fourth cervical we have the phrenic, the superior cardiac nerves, cervical plexus, and communicating fibers (branches) to the superior and middle cervical ganglia. A communicating branch or filament from the fourth cervical unites (apparently in the same sheath) with the fifth to begin the brachial plexus. A set of nerves from the fourth connects the cervical with the brachial, and it is supposed that the vaso-motor takes in the cervical from the second to the seventh.

Between the fifth and sixth cervical we have the cardiac plexus. Between the sixth and seventh we have the inferior cervical ganglia, embracing the sixth and seventh.

At the first dorsal we have the center for the lungs—the thoracic ganglia of the sympathetic nerves.

At the second dorsal we have the cardiac plexus and the nerve center for the ciliary plexus of nerves that control the ciliary muscles.

At the fourth, the ganglia that control the pyloric end of the stomach—and some intercostal nerves and vessels.

Between the fifth and sixth we have the pulmonary veins and the vaso-motor to the arm.

At the fourth and fifth dorsal vertebrae we have the center of abdominal brain (going to it).

The center that controls heat, chills, etc., is at the eighth dorsal, taking in the seventh, eighth and ninth dorsal for chills.

Between the eighth and ninth, the œsophagus, right pneumogastric and vagus nerves.

At the ninth dorsal we control fever. Between the ninth and tenth we control the blood supply to the ovaries.

At the tenth dorsal we treat for pain in ovaries.

At the eleventh and twelfth dorsals we have the renal splanchnics, and treat there for the diaphragm, the kidneys, liver, diarrhea and flux. For these affections treat up from the sacro-lumbar junction. Also for nocturnal enuresis and hydrosis.

At first lumbar we have the renal plexus. At the second the spermatic plexus. From the second lumbar to the fourth lumbar we have the pelvic plexus, and at the second the parturient plexus. At the fourth we have the defecation ganglia, that control the action of the lower bowels. The center of the pelvic brain is at the fifth lumbar. At the fourth is the superior aortic plexus.

The fifth is the hypogastric plexus, and controls the vena cava inferior.

The third sacral controls the sphincter of the bladder (?).

The fourth sacral, the vagina, relaxing it.

The fifth sacral controls the levator ani muscle and external sphincter muscle.

The above is what they teach at the American School of Osteopathy.

On the following pages we reproduce diagrams and classifications of the nervous system, as outlined by S. O. L. Potter, M.D.



## THE SPINAL NERVES, 31 PAIRS.

8 CERVICAL, 12 DORSAL, 5 LUMBAR, 5 SACRAL, 1 COCCYGEAL.

*N. B.—Read from the Black Type outwards to left and right.*

to muscles and { *Ext. Br.* } Post. T. DIV. { Each } ANT. DIVISION, to  
 skin of back. { *Int. Br.* } { **Spinal Nerve** } divides into } Plexuses, etc.

Post. Div. of 2d N. }  
 Post. M. of head, etc. } POST. DIV. { **1st Cervical** } ANT. DIV. { *Brs. (3) to Recti cap. Muscles.*  
 Complexus Musclev. } { **Nerve.** } { *Commun'g* } { 2d Cerv. N.  
 Skin of occiput. } { *Sub-occipital* } { *Brs. to* } { Vagus N.  
 } { } { } { Hypogl. N.  
 } { } { } { Sup. Cerv. Gang.  
 } { } { } { *Br. to Occip-atloid artic'n.*

Splenius. }  
 Cerv. ascendens. } *Ext. Branch* }  
 Transv.-colli. } supplying }  
 Trach-mastoid. } POST. DIV. { **2d** } ANT. DIV. { *Fil. to Sterno-mast. M.*  
 Complexus. } { **Cervical** } { *Asc. Br. to 1st Cerv. N.*  
 } { **Nerve.** } { *Desc. Br. to 3d Cerv. N.*  
 } { } { } { *Fil. to Commun. Noni N.*  
 } { } { } { *Occipitalis Minor Nerve.*  
 } { } { } { }  
 to 1st Cerv. N. }  
 Skin of occiput. } *Int. Br. or* }  
 Auricular. } great *Occip.*

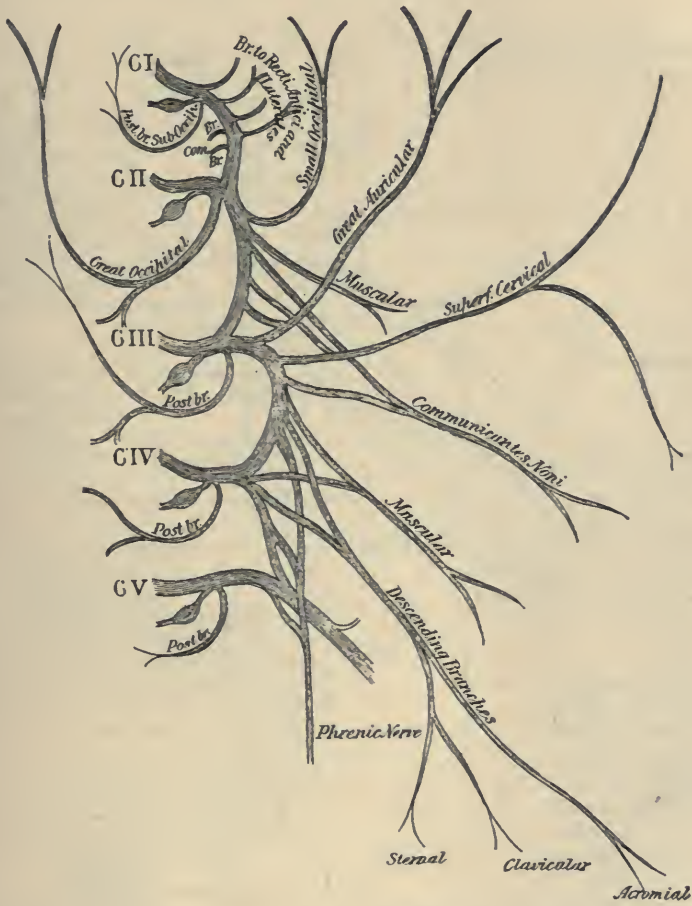
Splenius. }  
 Cerv. ascend. } *Ext. Br.* }  
 Trans. colli. } supplies }  
 Trach-mast. } POST. DIV. { **3d** } ANT. DIV. { *Auric. Magnus.*  
 } { **Cervical** } { *Superf. Cervical.*  
 } { **Nerve.** } { *Br. to 2d Cerv. N.*  
 } { } { } { *Br. to Spinal-ac.*  
 } { } { } { }  
 Integument } *Int. Br.* }  
 of occiput. } to supply }  
 } { } { } { *Fil. to 4th Nerve.*  
 } { } { } { *Fil. to Lev. ang. scap.*  
 } { } { } { *Supra-clavicular.*  
 } { } { } { *Fil. to Com. Noni N.*  
 } { } { } { *Fil. to Phrenic N.*

Muscles of the back. } POST. DIV. { **4th Cervical** } ANT. DIV. { *Fil. to 3d Cerv. Nerve.*  
 } { **Nerve.** } { } { *Fil. to 5th Cerv. N.*  
 } { } { } { *Fil. to Phrenic N.*  
 } { } { } { *Fil. to Scalenus medius.*  
 } { } { } { *Fil. to Supra-clavic. N.*

*Anterior* }  
*Branches* }  
 of }  
 1st Cerv. N. } **Cervical** }  
 2d Cerv. N. } Plexus. }  
 3d Cerv. N. } { *Superficial Br.* } { *Ascending Set (5) to head and shoulder.*  
 4th Cerv. N. } { *Descending Set (3) Sternal, Clavic. Acrom.*  
 } { } { } { }  
 } { *Deep Branches.* } { *Internal Set.* } { *Communi-* } { *Vagus.*  
 } { } { } { *cating to* } { *Hypogl.*  
 } { } { } { } { *Symp.*  
 } { } { } { } { }  
 } { } { } { } { *Muscular.*  
 } { } { } { } { *COMMUNIC. NONI NERVE.*  
 } { } { } { } { *PHRENIC NERVE.*  
 } { } { } { } { *Muscular (4).*  
 } { } { } { } { *Comm'g to Spinal-ac. N.*

## THE SPINAL NERVES.

### Cervical Plexus.

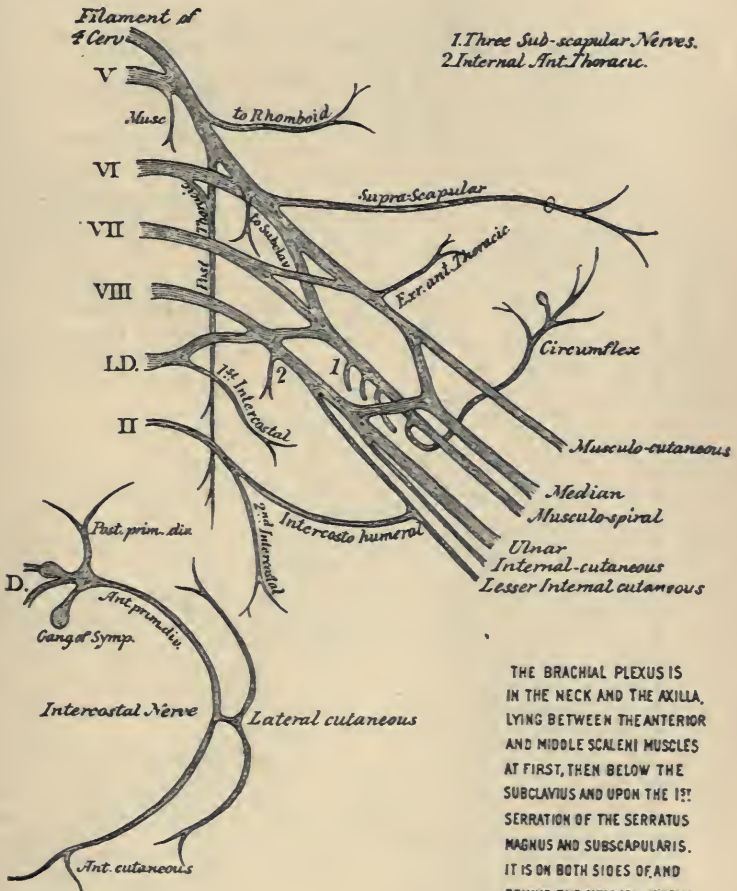


THIS PLEXUS { LIES UPON THE { SCALENUS MEDIUS AND  
 THE CERVICAL { IS COVERED BY THE STERNO-CLEIDO-MASTOID MUSCLE. }  
 { LEVATOR ANGULI SCAPULAE } MUSCLES.



# THE SPINAL NERVES

## Brachial Plexus



THE BRACHIAL PLEXUS IS IN THE NECK AND THE AXILLA, LYING BETWEEN THE ANTERIOR AND MIDDLE SCALENI MUSCLES AT FIRST, THEN BELOW THE SUBCLAVIUS AND UPON THE 1<sup>ST</sup> SERRATION OF THE SERRATUS MAGNUS AND SUBSCAPULARIS. IT IS ON BOTH SIDES OF, AND BEHIND THE AXILLARY ARTERY IN ITS 2<sup>ND</sup> PORTION, EXTERNAL THERETO IN ITS 1<sup>ST</sup> PORTION.



## NERVES OF THE UPPER EXTREMITY.

## TERMINAL BRANCHES OF THE BRACHIAL PLEXUS.

Outer Cord of the Brachial Plexus.

(1) EXTERNAL ANTERIOR THORACIC, to Pectoralis major.

*Muscular*, to

Coraco-brachialis,  
Biceps.  
Brachialis anticus.

*Anterior Br.*

Skin of forearm (front)  
Skin of ball of thumb.  
Joins Radial Nerve.

*Posterior Br.*

Skin of forearm (back).  
Joins Radial Nerve.  
Joins Ext. Cutan. Branch of  
Musculo-spiral. N.

*Articular Br.* to

Elbow joint.

(2) EXTERNAL OF  
MUSCULO-  
CUTANEUS.*Muscular*, to

Pronator radii teres.  
Flex. carpi rad.  
Palm. longus.  
Flex. subl. digit.

*Anterior  
Interosseous*, to

Flex. long. poll.  
Flex. prof. digit. (Ext.  $\frac{1}{2}$ ).  
Pronat. quadrat.

*Palmar  
Cutaneous.*

Skin of palm.  
Skin of ball of thumb.

(3) MEDIAN.

In Forearm.

In the Hand.

*External Br.*

to Abduct. poll.  
to Opponens poll.  
to Flex. brev. poll.  
*Digital*, to thumb.  
*Digital*, to 1st finger.

*Internal Br.*

*Digital*, to contiguous sides  
of index, middle and ring  
fingers.  
Filaments to two outer Lum-  
bricales.

# THE SPINAL NERVES.



Brachial Plexus,  
and Nerves of the Upper Extremity.

Power, del.

Inner Cord of the Brachial Plexus.

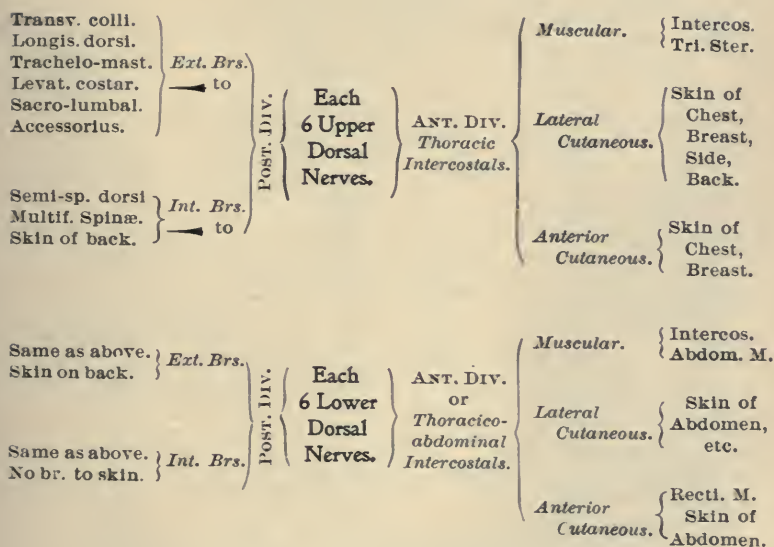
- (4) INTERNAL ANTERIOR THORACIC, to both Pectoral muscles.
- (5) INTERNAL CUTANEOUS. { *Anterior Br.* to skin of forearm, inner side.  
                                  { *Posterior Br.* to skin of forearm, inner side.
- (6) LESSER INTERNAL CUTANEOUS. { Is often wanting, Intercosto-humeral taking its place, to posterior surface of lower third of skin of arm.  
      (*N. of Wrisberg.*)
- (7) ULNAR. {
  - In Forearm. {
    - Articular*, . . . . to Elbow-joint.
    - Muscular*, . . . . to { Flex. carp. ulnaris.  
                                  { Flex. prof. dig. (inner half).
    - Palmar Cutaneous*. { Skin of front of wrist and palm of hand.
    - Dorsal Cutaneous*. { Skin of back of wrist and one and a half fingers.
  - In Hand. {
    - Articular*, . . . . to Wrist-joint.
    - Superficial Brs.* to { Palmaris brevis.  
                                  { Skin of one and a half fingers.
    - Deep Brs.* . . . . to { Muscles of little finger.  
                                  { Interossei.  
                                  { 2 inner Lumbricales.  
                                  { Adduc. pollicis.  
                                  { Flex. brev. poll. (inner head).

Posterior Cord of the Brachial Plexus.

- (8) SUBSCAPULAR. . . { *1st Upper*, to Subscapular muscle.  
                                  { *2d Long*, to Latiss. dorsi.  
                                  { *3d Lower*, to Teres major.
- (9) CIRCUMFLEX. . . {
  - Superior Br.* to { Deltoid.  
                                  { Skin of shoulder.
  - Inferior Br.* . . to { Teres minor.  
                                  { Deltoid (post.).  
                                  { Skin of shoulder.
- (10) MUSCULO-SPIRAL. . . {
  - Muscular*, . . to { Triceps, Anconeus.  
                                  { Brach. anticus.  
                                  { Supin. long.  
                                  { Ext. carpi. rad. long.
  - Cutaneous*, . . to Skin of arm.
  - RADIAL. {
    - External Br.* to Skin of thumb.
    - Internal Br.* to { Skin of three and a half fingers on radial side of dorsum.
  - POSTERIOR INTEROSSEOUS. {
    - to all muscles on back of forearm, except Anconeus, Sup. long. and Ext. carpi. radi- alis long.
    - Filaments to wrist-joints.

THE DORSAL NERVES.

*N. B.—Read from the Black Types outwards to left and right.*





THE LUMBAR AND SACRAL NERVES.

An  
External Branch  
sending filaments  
to the Erector  
spinæ and  
Intertransversales  
muscles, and the  
skin of the gluteal  
region, posteriorly.

An  
Internal Branch,  
sending filaments  
to the Multifid.  
spinæ, and skin  
over vertebræ of  
spinal column.

The Posterior Division of each of these Nerves has

} 1st Lumbar.	{ Ant.	Nos.
		1, 2, 3, Comm. Br. to 2d Lum.
	{ Div.	Nos.
		3, 4, 5, Comm. Br. to 3d Lum.
} 2d Lumbar.	{ Ant.	Part of
		5, 6, 7, Comm. Br. to 4th Lum.
	{ Div.	Part of
		5, 6, 7, Lumbo- Sacral Cord to 5th Lum.
} 3d Lumbar.	{ Ant.	Part of
		5, 6, 7, Lumbo- Sacral Cord to 5th Lum.
	{ Div.	Part of
		5, 6, 7, Lumbo- Sacral Cord to 5th Lum.

Lumbar Plexus.

- (1) Ilio-hypogas-  
tric.
- (2) Ilio-inguinal.
- (3) Genito-crural.
- (4) Ext. Cutaneous.
- (5) Ant. Crural.
- (6) Obturator.
- (7) Accessory  
Obturator  
(when present).

An  
External Branch,  
forming loop on  
sacrum and great  
Sac-Sciat. lig to  
supply skin over  
glutei.

An  
External Branch,  
to Multifidus spinæ  
and back part of  
coccyx  
(the two lower  
nerves).

The Posterior Division of each of these Nerves has

} 5th Lumbar.	{ Ant.	Joins the
		Lumbo- Sacral Cord.
	{ Div.	Joins the
		Lumbo- Sacral Cord and 2d Sacral.
} 1st Sacral.	{ Ant.	Joins with
		1st Sacral.
	{ Div.	Joins with
		2d Sacral and part of the 4th.
} 2d Sacral.	{ Ant.	Br. to Plex- us, Visc. Brs.
		Mus. Brs., Fil. to 5th.
	{ Div.	Br. to Plex- us, Visc. Brs.
		Mus. Brs., Fil. to 5th.

Sacral Plexus.

- (1) Super. Gluteal.
- (2) Muscular Brs.
- (3) Small Sciatic.
- (4) Great Sciatic.
- (5) Pudic.
- (6) Articular.

Are below the  
Multif. spinæ,  
join together  
in loops over  
back of sac-  
rum, sending  
filaments  
to skin.

} Post. Div.	} 5th Sacral.	{ Ant. Div	Br. to skin of coccyx.
			Br. to Coccygeus M. Br. to Coccygeus Nerve.
} Post. Div.	} Coccygeal.	{ Ant. Div.	A delicate filament, going to skin, over coccyx.



## DISTRIBUTION OF THE BRANCHES

FROM THE 7 GREAT TRUNKS OF THE LUMBAR PLEXUS.

- |                            |   |   |   |
|----------------------------|---|---|---|
| (1) ILIO-HYPOGASTRIC . . . | { | <i>Iliac</i> , to skin of gluteal region.   |   |
|                            | } | <i>Hypogastric</i> , to skin of that region.  |   |
| (2) ILIO-INGUINAL . . . .  | { | to Internal Oblique Muscle.   |   |
|                            | } | to skin of upper and inner thigh, scrotum, penis.   |   |
| (3) GENITO-CRURAL . . . .  | { | <i>Genital</i> , to Cremaster, scrotum, round ligament.   |   |
|                            | } | <i>Crural</i> , to skin of upper and front thigh.   |   |
| (4) EXTERNAL CUTANEOUS .   | { | <i>Ant. Br.</i> to skin of anterior and outer thigh, above knee.  |   |
|                            | } | <i>Post. Br.</i> to skin of posterior and outer thigh, above knee.  |   |
| (5) ANTERIOR CRURAL.       | { | <i>Ant. Div.</i>  | <i>Mid. Cutaneous.</i> { to Sartorius, and skin of anterior thigh above knee.   |
|                            |   |   | <i>Int. Cutaneous.</i> { <i>Ext. Br.</i> to skin, lateral or knee.<br><i>Post. Br.</i> to skin of inner thigh and leg.  |
|                            |   | <i>Post. Div.</i>   | <i>Long Saphenous.</i> { to skin of knee and of front and inner leg and foot.   |
|                            |   |   | <i>Muscular Brs.</i> to muscles on front of thigh all but two.<br><i>Articular Brs.</i> (2) to capsules of knee- and hip-joints.                                    |
| (6) OBTURATOR . .          | { | <i>Ant. Br.</i>   | <i>Articular Brs.</i> to hip-joint.<br><i>Muscular Brs.</i> to Adductors, Gracilis and Pectineus.<br><i>Anastomotic Brs.</i> with Inter. Cutan. and Int. Saphenous. |
|                            |   | <i>Post. Br.</i>  | <i>Articular Brs.</i> to knee-joint.<br><i>Muscular Brs.</i> to Adduc. mag. and Obturator externus.   |
| (7) ACCESSORY OBTURATOR .  | { | <i>Muscular Br.</i> to Pectineus.<br><i>Articular Br.</i> to hip-joint.<br><i>Cutaneous Br.</i> to skin of thigh and leg. | } Occasionally present.   |

The Lumbar Plexus lies in the substance of the Psoas muscle, in front of the transverse processes of the lumbar vertebræ.

## DISTRIBUTION OF THE BRANCHES OF THE SACRAL PLEXUS.

- (1) SUPERIOR GLUTEAL, . . .  $\left\{ \begin{array}{l} \text{Sup. Br. to the Gluteus medius and minimus.} \\ \text{Inf. Br. } \left\{ \begin{array}{l} \text{to the Gluteus medius and minimus.} \\ \text{to the Tensor vaginæ femoris.} \end{array} \right. \end{array} \right.$
- (2) MUSCULAR BRANCHES, to  $\left\{ \begin{array}{l} \text{Pyriformis, Obturator internus, the two Gemelli, and the Quadratus femoris muscles.} \end{array} \right.$
- (3) ARTICULAR BRANCHES, to the hip-joint.
- (4) SMALL SCIATIC.  $\left\{ \begin{array}{l} \text{Inf. Gluteal, . } \left\{ \begin{array}{l} \text{Gluteus maximus muscle.} \\ \text{Skin of side of penis, or vulva.} \end{array} \right. \\ \text{Inf. Pudental, } \left\{ \begin{array}{l} \text{Skin of upper and inner thigh, and of} \\ \text{scrotum or labium.} \end{array} \right. \\ \text{Cutaneous, . } \left\{ \begin{array}{l} \text{Ascending, to Skin over Glutei.} \\ \text{Descending, to Skin of posterior thigh.} \end{array} \right. \end{array} \right.$
- (5) GREAT SCIATIC.  $\left\{ \begin{array}{l} \text{Articular, . . . to the hip-joint.} \\ \text{Muscular, to . } \left\{ \begin{array}{l} \text{Adductus magnus, Biceps.} \\ \text{Semi-membranosus, Semi-tendinosus.} \end{array} \right. \\ \text{EXTERNAL POPLITEAL OR PERONEAL. } \left\{ \begin{array}{l} \text{Terminal Branches.} \\ \text{INTERNAL POPLITEAL NERVE. } \left\{ \begin{array}{l} \text{ } \\ \text{(See page 190.)} \end{array} \right. \end{array} \right. \end{array} \right.$
- (6) PUDIC, . . .  $\left\{ \begin{array}{l} \text{Perineal, } \left\{ \begin{array}{l} \text{Superficial Perineal, } \left\{ \begin{array}{l} \text{to Skin of anus, scrotum,} \\ \text{penis and labia, and the} \\ \text{Sphincter ani muscle.} \end{array} \right. \\ \text{Muscular, to perineal muscles.} \end{array} \right. \\ \text{Inferior Hemorrhoidal, } \left\{ \begin{array}{l} \text{to Sphincter ani muscle.} \\ \text{to Skin of anal region.} \end{array} \right. \\ \text{Dorsal of Penis, . . . } \left\{ \begin{array}{l} \text{Skin of dorsum of penis.} \\ \text{Br. to Corpora cavernosa.} \end{array} \right. \end{array} \right.$

The Sacral Plexus lies in the pelvis upon the Pyriformis muscle, and is covered by the Pelvic fascia, and the Sciatic and Pudic arteries.



## THE SYMPATHETIC NERVOUS SYSTEM.

		{ On the Anterior Communicating Artery. In it begins the double chain of gangliated cords enumerated below.	
<b>Ganglion of Ribes.</b>			
<i>External Branches</i> } to join the 1st, 2d, 3d, 4th Cervical Nerves.	<b>Superior Cervical Ganglion.</b>	<i>Sup. Brs.</i> { <ul style="list-style-type: none"> <li><i>Some</i> to Pneumogastric, Glossopharyngeal and Hypoglossal Nerves.</li> <li><i>Ascend. Br.</i> {             <ul style="list-style-type: none"> <li><i>Ext. Br.</i> forms Carotid Plex.</li> <li><i>Int. Br.</i> forms Cavernous Plex. along. Int. Carotid Artery.</li> </ul> </li> </ul>	
		<i>Anterior Branches,</i> to Plexus on Ext. Carotid Artery.	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li><i>Pharyngeal,</i> to Pharyngeal Plexus.</li> <li><i>Superior Cardiac Nerve,</i> to Cardiac Plexus, goes to Deep Pl. on right side, to Superficial Pl. on left side of body.</li> </ul>
<i>Ext. Brs. to</i> { 5th and 6th Cervical Nerves.	<b>Middle Cervical Ganglion.</b>	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li><i>Filaments</i> along Inf. Thyroid Art. to Thyroid body and Larynx.</li> <li><i>Mid. Cardiac Nerve,</i> to Deep Cardiac Plexus.</li> </ul>	
<i>Ext. Brs. to</i> { 7th and 8th Cervical Nerves.	<b>Inferior Cervical Ganglion.</b>	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li><i>Filaments</i> along Vertebral Art. to cranium.</li> <li><i>Inf. Cardiac Nerve,</i> to Deep Cardiac Plexus.</li> </ul>	
<i>Ext. Brs. to</i> { 12th Dorsal Nerve.	<b>12th Thoracic Ganglia.</b>	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li>Upper 5th or 6th to Aorta and Vertebral column.</li> <li>2d, 3d and 4th to Post. Pulmonary Plexus.</li> <li>Lower 6th from the 3d Splanchnic Nerve, thus—</li> <li>6th-10th, <i>Great Splanchnic,</i> to Semi-lunar Gang.</li> <li>10th-11th, <i>Small Splanchnic,</i> to Coeliac Plexus.</li> <li>12th, <i>Smallest Splanchnic,</i> to Renal Plexus.</li> </ul>	
<i>Ext. Brs. to</i> { Lumbar Nerves.	<b>4th Lumbar Ganglia.</b>	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li><i>Some</i> to Aorta Plexus.</li> <li><i>Some</i> to Hypogastric Plexus.</li> </ul>	
<i>Ext. Brs. to</i> { Sacral Nerves.	<b>4th Sacral Ganglia.</b>	<i>Int. Brs.</i> { <ul style="list-style-type: none"> <li>to Pelvic Plexus.</li> <li>to Plexus of Middle Sacral Artery.</li> </ul>	
<b>Coccygeal G., or Ganglion Impar.</b>		{ In which ends the double chain of gangliated cords enumerated above, and called The Sympathetic Nervous System.	

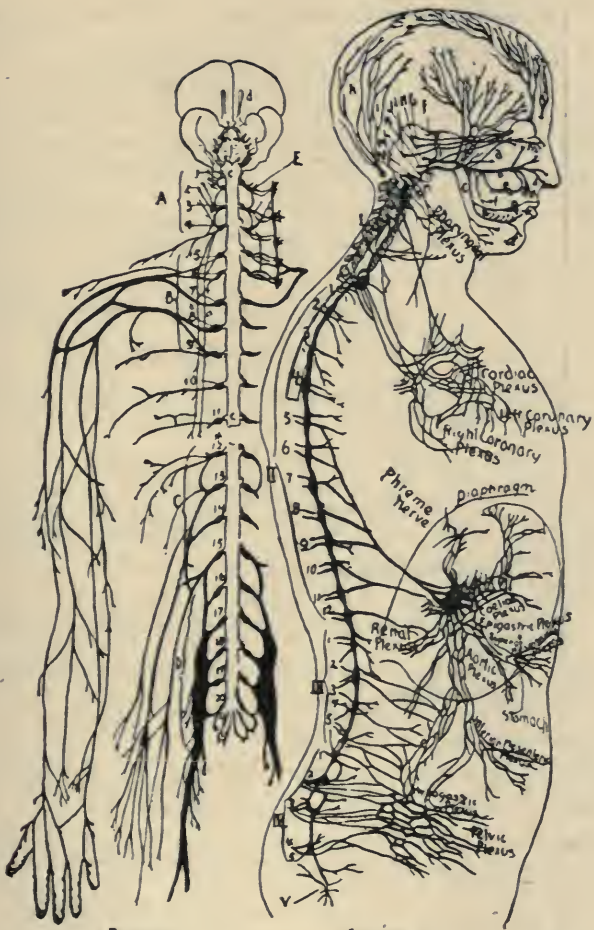


FIGURE 1

FIGURE 2

Cerebro-Spinal and Sympathetic Nervous Systems.

## DISTRIBUTION OF THE NERVES OF THE LEG AND FOOT.

[TERMINAL BRANCHES OF THE GREAT SCIATIC.]

EXTERNAL POPLITEAL OR PERONEAL NERVE.	(1) <i>Articular</i> (3), distributed to the knee-joint.	(2) <i>Cutaneous</i> (2 or 3), to skin of leg, exteriorly and posteriorly.						
						(3) ANTERIOR TIBIAL.	<i>Muscular</i> , to { Front muscles of leg. Peroneus tertius.	<i>External Br.</i> { Extensor brevis digitorum. Tarsal articulations.
	(4) MUSCULO- CUTANEOUS.	<i>Muscular</i> , to { Peroneus longus and brevis.	<i>External Br.</i> { Skin, outer side of foot and ankle. Skin, contiguous sides 3d, 4th and 5th toes.	<i>Internal Br.</i> { Skin, inner side of foot and ankle. Skin, contiguous sides 2d and 3d toes and inner side of great toe.				
					(1) <i>Articular</i> (3), to knee-joint.			
	INTERNAL POPLITEAL NERVE.	<i>Plantar Cutaneous</i> , to skin of heel and sole.	POSTERIOR TIBIAL.	<i>Internal Plantar.</i> { <i>Digital</i> , to skin, 3½ inner toes. <i>Muscular</i> , to flexors, etc. <i>Articular</i> , to tarsus. <i>Cutaneous</i> , to sole of foot.		<i>External Plantar.</i> { <i>Muscular</i> , to Flexor accessorius. <i>Super- ficial</i> , { to 1½ outer toes. Flexor brevis min. dig. 4th Interosseous. <i>Deep Br.</i> { 3d and 4th Lumbric. Rest of Interossei.		

# GENERAL AND SPECIAL TREATMENT

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## GENERAL TREATMENT.

Beginning at the back of the neck, raising the neck up with the hands, fingers meeting near spinous processes on either side of vertebrae, with top of head against operator, springing neck as shown in Plate No. I., then dropping hands on either side of neck, proceed to roll head from side to side, using the fingers alternately against side of neck, moving and manipulating all of the muscles on the posterior aspect of neck up and down the sides of neck for several successive moves; then placing one hand under neck, the ends of fingers reaching across back of neck to under and posterior side of the mastoid process, the other hand gently curved around the chin, pull gently with both hands until there is a perceptible moving of the whole body upwards; then, holding taut the hands in position named, turn head toward fingers of hand under neck, pressing upward with ends of fingers on neck; still holding neck taut, turn head back to former straight position with the body, then let go both hands; change position of hands so as to turn head in other direction same way. Then holding the finger ends all in a bunch near spinous processes, against back of neck, make several vibratory moves with both hands at the same time, jerking up and down with both hands, fingers pressing on sides of neck, well back near spines, moving up and down the neck as moves are made. Then place the ends of one or two fingers in angle of jaws, direct patient to open the mouth widely, and operator pulls fingers upward behind angle of jaws tightly, and as patient closes mouth and jaws lets go. This is not painful, except fingers are held taut while the jaws are being closed, which should not be done. Then, with finger ends closed in a bunch, with pulp ends



placed on temples, vibrate rapidly all around in and on temples for several successive rapid movements, dropping thumbs on forehead at the same time and rapidly rotating over every part of the forehead. That done, drop thumbs on either side of the nose, pull them upward and outward, crossing the supraorbital notch, ending that move on the forehead above superciliary ridge; then place the thumbs at lower outer angles of nostrils on either side, pressing gently, follow angle of malar bones downward and outward two or three times, winding up that movement with vibratory movements on side of face, and on either side of nose, and finally placing thumb on one side and spread-out fingers of hand on side of nose, index finger and the end of the thumb placed deeply in inner canthus of eye, pressing on the papillae, and holding thumb and finger so as not to squeeze together hard, nor to spread apart, with a sudden downward pressure make finger and thumb ends press upon inside of canthus on lachrymal sack, so as to stimulate nerves and blood vessels. This done, place one hand on forehead of patient standing at the side of the table, with the fingers of other hand cupped slightly, ends close to spinous processes, with a pushing of head from and a pulling of fingers toward operator, letting fingers accommodate themselves to the side of neck in such a way as to apparently pull the skin, with the muscles, from their moorings, as the head is pushed in the opposite direction. Manipulate all of one side of the neck thusly, then treat other in the same way.

The clavicles deserve our next attention. They should be raised or pressed outward at every treatment, as the contraction of the various chest muscles—contraction of—draws them downward, so as to unduly press upon important vessels and nerves, prominent of which are the jugular veins, which convey the blood from head and neck to the heart. To raise clavicles and stretch muscular fibers involved is important, and to do so requires a little skill and dexterity on the part of the operator. The easiest and surest method is to

stand at the side of the patient, his arm lying at the side of the body, the operator taking hold of the arm at the elbow with left hand applied on under side of, and at the lower end of humerus, in such a position as to push the whole arm upwards, close to the side of patient, far enough to displace the clavicles upward enough for operator to place fingers of other hand between clavicle and first rib, and with a firm hold, presses the arm outward and upward to a right angle of the body, gently pulling on the fingers, with which hold the clavicle from body. Care should be had as to how much pressure should be used, not to overstretch the attachments at one sitting. Now the patient is to turn on either side; the operator, on side of table facing patient, well up toward and opposite shoulders, takes hold of the wrist with one hand, placing the fingers, gently curved, on the side of dorsal vertebrae (upper side of them, next to operator), then, with arm extended to the side of the head, assuming an easy position along side of the head, a simultaneous move of both arms is to be made, the sudden pressure of the pulp ends of the fingers of the hand against the back is to be made, and at the same instant the arm is to be extended, and the arm and fingers against the back are to be held taut while the extended arm is thrust or brought downwards with a sudden, rapid move over arm of operator; then, drawn back as before, and the fingers moved down the back an inch or two, repeating this move until the spine is treated as far as to tenth or twelfth dorsal. Then the other side is to be treated in like manner. Then the patient is to lie on the back, and the lower limbs manipulated in the following manner: Let the operator, standing at the side of the table, with patient on back, take hold of the leg with one hand, just below the knee, flex the leg on the thigh, place fingers against loin in such a manner as to press firmly, then press the limb toward abdomen, knee pointing toward the chin, and with an upward, outward motion of the leg and knee manage to press the body over on the ends of the fingers, which are placed on the back, as aforesaid; and continue this

move several times, bringing the fingers on the back downward an inch or two each rotary move made by the leg, coming down with the fingers about half way between the ischium and great trochanter, and then go up to same place on lumbar, and repeat the moves. This frees the muscular system in the region of the hips, and is the treatment for sciatica—one of them. The leg should be flexed upon the thigh and the thigh on the abdomen moderately two or more times, so as to stretch the muscles and increase the flow of blood, taking off the pressure from the deeper veins of the thigh. While at this part of the body, and as a continuation of the general treatment, let the operator take hold of the leg at or just below the knee, flexing it toward the abdomen, with the fingers of the other hand placed near the center of the anterior part of the thigh, one or two inches below the angle (Poupart's ligament), holding fingers moderately tight against thigh at that place; with the hand holding the knee push the whole limb upwards, gently rolling it outward, and at the same time pulling the skin and deeper structures outward (in the femoral region), opening the saphenous vein, so as to let the venous blood return to the femoral, thence to the iliac veins. Then, still holding the knee with one hand, place the half-closed fingers of the other hand near the knee, on under side, so as to pull the muscles as the hand on the knee pushes the knee the other way—toward the other leg. The muscles of the inside of the thigh may be moved from the knee to the thigh this way, and all of these muscles should be moved in this, or any other manner best suited to the circumstances and the mood of the operator and the comfort of the patient. The other limb should be treated in the same manner. Now your patient is ready to be placed upon the face, unless the liver needs attention. If so, treatment may be done while on back, as directed elsewhere. The patient lying on the stomach, or face downward, the operator may treat the back in either or all of the following ways: Getting up on the table on one knee and other foot on the table, at the side of the patient,

taking hold of the ankle of opposite limb with one hand, the other hand placed on opposite side of the spinous processes, heel of hand against muscles, raise leg, gently pulling it toward the back, forming a curve, at the same time pressing against the back, beginning about the middle of the back; let each move be made complete, letting the foot down each time, and repeat this move a number of times, moving the hand down the back its width each move until all of the lumbar and sacral regions are treated. The same moves may be made with the finger and thumb embracing each side of the spinous processes, covering same territory or region of the back. This should be repeated on the other side, with other limb as well, being careful not to spring the back too strongly, so as to do harm. The springing or sudden pressure with the fingers on the sides of the spinous processes may now be made along down the spine, from the first to last dorsal and lumbar vertebrae, with sudden, springy motion with both hands, followed up by the rotary movements upward and outward, beginning at the shoulders or the sacrum, depending on results the operator desires. This will be referred to in the body of the book. This constitutes the general treatment while the patient is on the table. The various movements that are to be made while the patient is sitting up may be made at same sitting, if needed.

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#### SPECIAL MOVES FOR SPECIFIC RESULTS.

During the general treatment, regard should be had for special ailments. Many of the various conditions or pathological conditions of various parts of the body may be remedied or treated while the patient is on the table and during the administration of the general treatment; such as the treatment for eye affections, ear and throat, lungs, heart, asthmatic, pleuritic, liver, spleen, diarrhoea, flux, womb and bowel troubles. The choice of positions is not so essential as the correct application of manipulations, the proper pressure in



the various parts of the body, the intensity or non-intensity of the treatment. These should vary according to the condition, stage of disease, susceptibility of patient to the handling the various parts of the body. These things should be largely governed by our knowledge of the condition of the patient, which is a matter of no small consequence to both patient and operator. The treatments should be varied according to circumstances. Some patients should be treated as often as every day, others three times a week, and some twice a week, others only occasionally. Many pathological conditions yield at one treatment; others require longer or shorter courses of treatment. There is a prevailing idea with some that Osteopathic treatment is so marvelous in its results that all diseases succumb thereto at once, because a few conditions are so suddenly relieved thereby. Regarding Osteopathy as a wonderful means of treating the body for the various pathological conditions that we often find in it, there should be the necessary amount of common sense used as to its applicability in any given case, just the same as in every other system of healing, and we should not lose sight of the stubborn fact "that man is born to die" some time, and that some diseases, especially some stages of some diseases, are invulnerable, yield to no sort of treatment. Our means seem the most rational of any that we know, and have a greater range of applicability than any other; and Osteopathy possesses such varied resources that it stands alone as regards versatility, positive effectuality in many instances that almost approaches the miraculous (a little short of the Divine power itself), and being natural, can justly be classed in this category—rightly understood and applied. The opposition to its use is justly attributed to a want of understanding of it on the part of the people, as well as the doctors. It, like every other measure of merit, is working its way along the lines of approval, and growing in interest and favor wherever its benign influence is felt, so that it will be fully

recognized in due time without the acts of public approval through legislative bodies, for the cured will tell it everywhere, and the benefits will not be "hidden under a bushel," but blazoned forth like the genial rays of the great shining orb, the sun, at noonday, gladdening the hearts of the people, sick and well, wherever known. This is no dreamy prognostication, for it is already able to walk alone, and soon to lay aside its swaddling garments and don robes more elaborate and more attractive. All it needs is to be properly understood and rightly applied, and it opens up the flood-gates of life and lets the vital fluids run in their wonted, normal channels—then life flows on as a river.

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#### GENERAL TREATMENT NECESSARY.

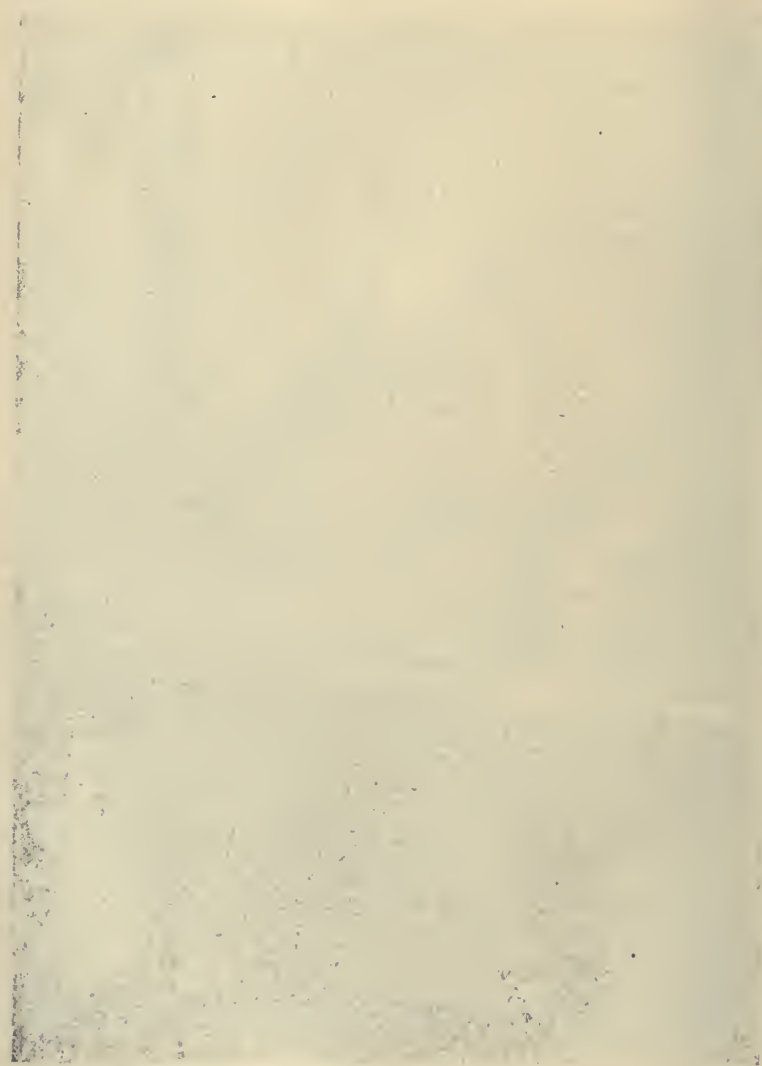
There are some manipulators (Osteopaths) who regard certain moves for local affections sufficient, and hastily make these moves, and move the patient at once, having done but little, if any, good for the patient. Rest assured that when an operator does so, he is either ignorant of the conditions governing the case, or indifferent as regards the consequences of treatment, or both. In order that Osteopathy receive the approval of the people, honest, intelligent manipulators should administer it. The automaton who has only learned a few moves, relieved a few pains, is illy prepared to become a competitor or a rival of medical practitioners in any community, after the people learn the caliber of his intellectuality. The very words of such an individual indicate his ability, his knowledge of the human system, and as was said to one many centuries ago: "Out of thine own mouth will I condemn thee." Any new science must have intelligent expounders and thoroughly posted representatives, honest, upright demonstrators of the truths of the science. The extraordinary superiority of this science can be made to stand out in bold relief when properly presented by the right sort of intelligences, men or women, or both. A knowledge of the medical

sciences is not an essential prerequisite to a knowledge of this science, but the operator should have a fair knowledge of anatomy, physiology and pathology. Knowing these three divisions, including the knowledge of normal or abnormal structure, as well as the offices or functions of the various organs of the body, and being versed in Osteopathy, he or she is prepared to adjust the system to itself much better, more easily, surely, satisfactorily than has been done by other systems, including medical, massage, Swedish movement, *et al.* The reader will not be misled by our assertions into the idea that we ignore surgery or the tissue elements. Our position as regards the tissue elements may be seen elsewhere in this work. We would emphasize our estimate of the necessity of practitioners of this science being honest in understanding it, honest in applying it, and honest in stating what may reasonably be expected of its application in relieving the afflicted. Whilst our object in writing this book is to make plain and comprehensible the science, so that the ordinarily intelligent may thoroughly comprehend its philosophy, we would not be understood as willing to relegate its use wholly to that class of practitioners, for we are satisfied that the medical profession, with ordinary mechanical skill, with their general knowledge of pathology, will be the better able to utilize it to greater and much better advantage, and are further satisfied that persons about to learn this science with anatomy, physiology and pathology before mentioned, will concede our right to that opinion, and go to some school of their choice, where the other sciences are thoroughly taught, and learn them, whether they ever have occasion to use them or not. It pays to know what the other fellow knows, so as, should occasion require it, to know how to use intelligent argument. Be posted!



PLATE XIV.*b*.—Continued Arm Movement.





SPECIAL TREATMENT.

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While the illustrations in the body of this book represent almost all of the manipulations requisite for the treatment of all sorts of ailments, in that they explain how to free the circulation and to take off the pressure, yet we would add a few remarks in reference to special treatments. It will not be necessary to go through with all of the manipulations at one sitting, and the operator must exercise his or her own judgment in regard to what treatment is required in any particular pathological condition. The thorough treatment of the muscles of the neck will be required most generally in all conditions found anywhere, for here we start to free the vital fluid that is often the cause of disease in other parts of the body; for here are the beginnings of cervical influences that, if not free, are exercised in other parts of the body. Here we find the cervical ganglia, which distribute fibrillae to many important organs, and life's forces are modified very largely by the conditions found here. The brachial plexuses are found here, and the office of the nerves coming from this portion of the neck is more frequently interfered with here than at their distributed portions. The pneumogastric and phrenic nerves are reached here, as well as the spinal accessory; and here we have to do in opening the gates of important veins that, being partially or completely closed by muscular contractions, impede the return of blood to the heart, causing catarrh, headache, eye, ear, throat and nasal congestions. The directions for the treatment of the neck will be found to be important in all cases where freedom of circulation is involved, and to stimulate other parts through nerves passing through this part of the body to others, and very frequently a pain or a diseased part may be relieved by simply knowing its nerve supply and lifting the pressure from it in the cervical or brachial region.

If we could write in glittering letters of flame, so as to emphasize the motto, "Take Off the Pressure" everywhere,

the reader would understand the importance of our philosophy being carried out. This is all there is in Osteopathy, and all there is in the treatment and the cure of all curable diseases. To repeat each move to be made under the different names of disease is to presume the operator is incompetent to comprehend a direction once given. We wish it distinctly understood that we reach all parts of the physical man through the organic nervous system, and we do this by the stimulation of terminal nerve filaments. At the same time there is an influence had in the direction of adjustment of the system to itself, in cases of luxations, either from contractions of muscular fibers or direct violence. These must be looked after, and righted, whether at once or repeatedly manipulated, depending on conditions.

There will necessarily have to be frequent references to illustrations of moves, so as to make familiar the means used to accomplish certain results, and familiarize the reader or student with the various manipulations necessary to accomplish his purpose.

After freeing all of the muscles in the cervical and brachial regions, respect is to be had regarding the clavicles. They should be raised so as to take off the pressure of important blood vessels and nerves, and especially the venous system, for here all of the diseases that affect the head and throat most generally originate. All headaches, mouth, throat, chest and arm troubles, as well as heart and lungs, must be influenced by treatment here. Diseases of eyes and ears, in fact, of all above the clavicles, are caused by impediment to the return circulation of blood through the jugulars. The blood and the lymphatic fluids accumulating in the cervical region press upon the terminal filaments of the sympathetic nerves in this locality, preventing their action, their connection with the terminal footlets of the motor nervous system; action ceases, fluids accumulate, chemical changes at once set in, the pent-up poisons increase, and every evil possible ensues; whereas, if these veins had not been unduly pressed upon, and the blood

had been allowed to pursue its normal course undisturbed, no evil would have occurred. The very moment the pressure is removed, amelioration begins. This is the marvel of this science: simply to know how to remove the pressure does the work, if done.

We go on down the spinal column, lifting off the pressure, stimulating terminal nerve filaments, using the bones as our levers and the body as a weight, and our hands, thumbs and fingers as the fulcrums in lifting off the pressure and adjusting the system to itself, seeing to it that every bone, muscle, nerve and tendon are in proper condition and performing their natural function in the whole body. We find contracture of the chest muscles, as well as the intercostals, interfering with venous circulation, and that requires our attention, all along the dorsal region, and as they are especially concerned in the respiration, and respiration is necessary to the purification of the blood as it passes through the lungs, we must keep pressure off here, or take it off when existing here. We begin to understand the use of arms as levers to remove the pressure. Hence our instructions in regard to how to move the arms, where to hold them, when and how to manipulate them in the treatment of all diseases of the chest, embracing heart, lungs, liver, spleen, stomach and viscera.

As we descend into the lumbar region, we find important points which demand our most careful and special attention, for here, right at the junction of the twelfth dorsal and first lumbar, are fibers that, stimulated, reach the kidneys and correct many pathological conditions that other means fail to do. The second lumbar vertebral ganglia are important in that there are nerve fibers reached here that control the genital organs and the muscular tissue on the thighs and legs. Proceeding downward to the next, or third lumbar, we reach filaments that control the gluteal region, and continuing down to the fourth and fifth, we reach regions of vital importance to the patient in the treatment of diseases of the pelvic viscera, and affections of the leg muscles.



Each and every department of our body is supplied with nerve filaments that come from the brain, and we can only influence them through sympathetic filaments, so that it becomes a matter of great interest to the manipulator to regard proper starting points if good is to come of the treatment. A haphazard sort of manipulation may result in benefit, but it is better to know how to do the work intelligently, then we have the satisfaction of commanding the situation. The correct knowledge of how to make these moves we call Osteopathic manipulations becomes vitally interesting when important pathological conditions involving the life or death of the patient are considered. Much depends on the knowledge of the manipulator, and the how he does it, to produce the changes that are imminent in certain stages of some diseases favorably. Our battle ground, then, is the whole man. The freedom from the enthralldom of pressure everywhere is the work of the Osteopath. The hands, fingers and arms execute his will power in every given case, and his knowledge influences his will power correctly or incorrectly, as his understanding is of the conditions and means of relief he possesses.

The effect of manipulations depends largely on how they are done.

The hardness or softness of the muscular tissue has much to do in results, for some are affected easily, requiring light treatments, which would be injurious if more strength were applied, whereas some stand strong, vigorous treatments. Then again, due regard must be had as to time the treatments shall continue, whether for chronic or acute affections, the frequency of, nature of disease, its duration, character, whether it involve one or more organs, vessels, and how conditions of tissue involved are at the time. The demand for the exercise of good judgment is as great in this science as in others, and it is presumable that the manipulator shall have studied anatomy and physiology, and whatever else enters into a knowledge of the human system, ere he goes to work at this science as a manipulator, to be successful. Results may

follow these treatments, done as recommended, and help may be necessary at once, and this would justify any one qualified to render it, but we surely would recommend careful study of the human system before a general practice of this system be entered on by any one. It is not necessary that long years of study of the sciences should precede the practice of this science, but it is essential to know this to successfully practice. This book will teach all that is discovered in Osteopathy up to this date. We are not presumptuous enough to recommend our book as a text-book, but verily believe that in it will be found all that is known of the science in its application to all diseases.

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#### VARIOUS MOVEMENTS IN DIFFERENT PATHOLOGICAL CONDITIONS.

The many manipulations described and shown in plates might be greatly multiplied, but these serve to elucidate the principal ones necessary to the successful treatment of almost every pathological condition known.

The practical common sense of the operator in the application of the manipulations to the end desired, or object to be attained, is an anticipated desideratum that is as essential as the various moves are in the removal of obstructions needed in the treatment of patients diseased with any and all sorts of ailments, and in the different parts of the body.

There are many similar conditions in many named pathological states that should receive similar treatment, and the reader of these pages will often wonder why one or more plates are referred to for treating diseases differently named. This will appear quite plausible when it is considered that obstructions to the circulation cause very different results. It would take volumes to explain why this is so with all of the various pathological conditions with which humanity is afflicted. To make it plain, we would offer the following explanation, which will be sufficient to elucidate the matter

of similar manipulations for different diseases. Sore throat and diphtheria—these are supposed to be different pathological conditions, both involving the same region (the throat), and yet the same throat treatment is used in the one as in the other, varying only in time, pressure used, and vessels to be manipulated, which to the observer seems to be the same treatment. Scarlet fever and erysipelas are other examples seemingly treated alike, resulting differently, because the pathological conditions vary, yet the very same blood vessels are involved in one as in the other. Our treatment is not the treatment of the *name* of a disease, but the *condition* of the part affected.

The Osteopath regards disease as the result of obstruction, and the obstruction removed, removes the cause, whatever the name of the pathological condition may be. Treat John as you would James, if both have the same condition, regardless of their names. The treatment may embrace more of the system in the one case than the other, because other organs may be involved, requiring different manipulations. Obstructions anywhere in the system produce effects according to structure involved, and due regard must be had to this matter, or the Osteopath runs into the same state as most other practitioners do—that of a “Routinist.” Each and every move made starts forces that are effectual for good or ill, depending largely on locality, structures involved, etc. The Osteopath has learned when, where and how to apply these forces to produce such marvelous effects as are often the result of his “magic touch,” as is at times ascribed to him. There are vulnerable points in our systems, which, if attacked or properly influenced, make us ecstatic or lull us to sleep, produce pain or relief.

### TABLE FOR CONVENIENT TREATMENT.

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The table should be solid, heavy enough to hold any weight desirable, made of good, sound timber. It should be thirty inches high at one end, twenty-six at the other, twenty-six to thirty inches wide, and covered with a good three-inch mattress, or upholstered, with an elevated pillow-like prominence at the highest end, for the head of the patient to rest on while being treated. All this should be covered with good oil-cloth or pantasot. Oil-cloth is more satisfactory, as it is easier kept clean and does not mark so easily. The table may be level—twenty-six inches high—provided with a hinge joint about two feet at one end, and provided with a ratchet half-circular (notched brass casting), so as to raise the head to any elevation desirable. (This will cost a couple of dollars more, but it is convenient for use in every way.) As it is necessary in the treatment of some chronic cases to get up on the table, it is proper to have a good, strong, wide table, and we would advise one that is substantial.

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### SPECIAL INSTRUCTIONS AS TO MANIPULATIONS.

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It is said that "there is no excellence without great labor," and that if anything is "worth doing, it is worth well doing," and it is most emphatically so in Osteopathy. The manipulator should be thorough in every treatment for every affection, for the manipulations have to do in starting forces that change the conditions radically in the parts manipulated as well as in the parts to which the nerves are distributed. In nearly all treatments we start to treat the cervical region, for this locality is the nearest the starting point of all of the forces in the body, and here the gateway to every other department in the physical economy opens, and here we have more to do in controlling nerve force, regulating the circula-



tion of the fluids of the body, and removing obstructions that interfere with the return circulation from the brain to the heart. The manipulation of all of the muscles of the neck should be thoroughly done, beginning lightly, and gradually stirring up and moving not only the superficial, but all of the deeper structure on all sides of the neck until all are rendered normal, as nearly as may be at one sitting. This done, properly, the vaso-motor nerves as well in the upper and posterior portion of the cervical region properly stimulated, and the neck and spine stretched and neck adjusted in the act of stretching, and then the clavicles raised, the congestion begins at once to give way, and the life-forces start up, and already the patient begins to improve. It is not necessary to be rash in any of these manipulations, but persistence and patience, with carefulness, bring about results that are almost universally satisfactory. All of the various throat affections yield to this sort of treatment without fail, if properly done, and pent-up fluids that are producing pressure that prevents the nervous system from performing normal functions, pass on through normal channels; the pain, redness and swelling cease and relief is at once secured; whereas, medicating for such conditions fails to give relief, from the fact that relief comes from taking off the pressure. Whatever condition of an abnormal character is found to exist in this region; relief may come readily by the careful, thorough manipulations, as directed for this part of the body.

The whole cause of disease in every part of the body being *obstructed circulation*, the treatment rationally resolves itself into *a restoration of the circulation* to a *normal* condition. Results can not but be satisfactory when this is done. The trouble is, the people have been so used to depending on medication that they *won't see* any other way. It makes no difference how many failures they have seen or experienced, *no other way seems right* to them, and many are so prejudiced against using means different from what they have been accustomed to, they would rather risk its evil consequences



PLATE XV.—Treatment of Back of the Neck.



than resort to means that compromise their prejudices, or turn them from beaten paths, however glowing the promise of better results. Prejudice will be overcome in time to convince some that now live of the truths of the philosophy we now teach.

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### DISLOCATION OF BONE—CAUSE OF.

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There is a great deal said about dislocations of the bones of the human system, and a passing by that subject in this book would be considered osteopathically non-professional and unfair, therefore I would most respectfully call attention to the subject and endeavor to explain what Osteopaths (who know Osteopathy) mean by "dislocation of a bone." When it is considered that all muscular fiber is elastic, to a greater or less extent, and that the bones are held in place by ligamentous structure, and that muscles are generally attached to the ligamentous structure (and that to the bone or bones), it will be readily understood that the contraction of the muscular fibers renders taut the ligamentous structure; and in case a particular portion of the muscular fiber attached to the side or the end of a small bone, a rib or a flimsy joint, or even one of the strong muscles, contracting, draw a large joint out of, or partly out of place, and the end of the bone press unduly on a nerve or blood vessel, the results may be imagined—pain, paralysis, or pressure on a vein, artery or a lymphatic, or numerous fibers of either, the morbid results may be easily conjectured. This condition is often seen when the facts become apparent to the physician that such a state of affairs is possible. But the profession are wont to ridicule the idea of a dislocation of a bone, unless it is clear out on the side of the body or lifted entirely from its fellow, and becomes prominently apparent to even a distant observer! The prejudiced do not see anything only in their "own way." We respect-



fully ask a careful consideration of this subject, without favor or affection. Let facts be the ruling element in this discussion and results will be satisfactory. Those who assert that dislocations can not occur gradually, will please account for spinal curvature on any other principle. That a gradual shrinking of muscular fiber causes most all spinal curvatures, the observations of experts demonstrate to be true. If a back bone can be drawn sidewise, why can not a delicate, fibrous, surface articulation (as, for instance, a rib) undergo that sort of a transformation? These are so palpable that no one need be misled in the matter. Every bone in the body may be distorted, and its normal relationship distorted. This being the case, there is truth in the assertion that "A partial or complete dislocation of a bone or muscle is largely responsible for many of the pathological conditions that flesh is heir to," and "becomes a prominent factor in their production." It will yet be acknowledged that muscular contracture is largely responsible for the numerous interferences of circulation of blood and other fluids of the body, and the large majority of the pains that humanity endures. We feel assured that right here is the starting point of pathological conditions that demand our most serious and careful consideration. It not infrequently happens in the experience of Osteopathic practice that simply on the adjustment of a rib, and that, too, of one that has escaped the notice of eminent surgeons, by a slight movement, all pain at once ceases. This is most strikingly seen in functional affections of the heart, in the raising of the clavicle, stopping the whole trouble instantaneously!

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## EXAMINATIONS.

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When it is desirable to make a thorough examination, a state of nudity will be the condition most suitable, although that is not absolutely necessary; a thin garment worn is admis-

sible, and will not interfere with manual examinations. Begin with the neck, and examine whether all the cervical vertebrae are in line, whether one or more bones are distorted, whether one or more muscles are drawn or contracted, producing pain, drawing across important bloodvessels, nerves or lymphatics, or whether unnatural mobility is perceptible; whether the clavicles are drawn down by the contracture of the subclavicular muscles; whether the ends of clavicles are properly articulated; whether the arms are equally poised, and whether the spinous processes are in line; whether the ribs are smooth and regularly arranged, at equal distances from each other, and not drawn together on intercostal veins, that empty their blood into the vena azigos veins; or whether the ribs are not unduly pressing upon the pleura or lungs, liver, spleen or stomach. Look to the condition of the diaphragm, whether the lower portions of the chest walls are normal, or whether they are contracted. See to it that each muscle and bone is in proper order and relationship with every other one. Examine the joints of the lower limbs from the hips down to the last phalanx of the halluxes. Find out the true state of your case if you would satisfy fully the demands and render the assistance required in all cases. This sort of an examination would convince many a skeptic of the truths of this science, and that many distortions exist that have not been seen by the ordinary doctors of the day. "There are many things true, Horatio, that have not been dreamed of."

The physical diagnosis of the whole man should be known—and not simply the organs. It will be understood that many of the so-called pathological conditions attributed to disturbance of the intestinal viscera—liver, lungs, heart, stomach, spleen, intestines—have their origin in some remote part of the body, due to partial or complete luxation of bone, the contracture of muscular fiber, that has not been noticed at all by the attending physician, so that, when corrected by the Osteopath, all of the trouble ceases. To properly adjust the system to itself is essential in all pathological conditions.

We urgently recommend a careful examination of all the possible probabilities of luxations, ere a conclusion is reached or determined. These things observed may save much unnecessary suffering and delay in bringing about the necessary relief to save life. These points are important to understand, and after a little experience it will be found that there is much more to consider than at first it would seem possible to find, and a proper adjustment of the system to itself, occasionally, prevents many an ache, and cures many a pathological affection that has resisted the efforts of other doctors persistently. Hence this knowledge will be found useful and fill a niche not otherwise filled.

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### DIETETICS.

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While it is said that "what is meat for one is another's poison," it would seem that a book would be deficient without something being said about diet; therefore, we are constrained to say that a very large per cent. of the ills of the flesh are due to the manner and time of eating, rather than what is eaten. The "stuffing process" every few hours, or the "piece-meal" habits of adults and children, and the manner of preparing food, are all subjects deserving careful consideration; then, the manner of eating is of the greatest importance of all. The food should always be thoroughly cooked. It should be thoroughly masticated, and the stomach should be duly rested before it becomes the receptacle for food. No food should be eaten between meals. Eating should be considered a means of regenerating exhausted nerve and tissue waste, rather than simply a gratification of the taste. To get pleasure out of eating, it must be done leisurely, for it is the taste that affords enjoyment, not the idea of how much can be crowded down the throat into the stomach; then eat slowly, to enjoy the food while it is passing through the gate-way to the regions beyond. It is always better to leave off one

meal from the regular habit of most people, preferably breakfast, then dinner will be relished, digested, for the recuperative powers of the secretions will have been rested, food will be assimilated, appropriated, and the nervous system restored to normal activity, and vigor will take the place of exhaustion and sluggishness. The mental faculties will be clearer, and nature will reassert itself throughout all of its domain in the whole body, including every tissue therein, and many a disease pronounced hopeless will begin to wane and finally fade away into buoyant health. The "fad" advertisements for "anti-fat treatments" will find no place for those who are wont to take on "adipose," but every man and woman will be natural. Then, in the case of acute illness, as long as the tongue is coated, the taste is unnatural, foul, do not allow a morsel of food into the stomach until natural appetite demands it, which will be when the tongue cleans off, and then disease will have ceased, and food will be relished, assimilated, appropriated.

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#### REGARDING FOOD DURING SICKNESS.

To suggest a change in the programme of diet from what has been the custom during illness at once excites criticism. To properly appreciate the importance of food, we should first know the condition of the system as regards ability to assimilate it. To introduce food into a stomach that is sick, unable to digest it, seems insulting to the digestive apparatus, even to a common observer; but to one pretending to know the conditions necessary to its digestion, assimilation, would seem superfluous. That patients have been fed to death in an effort on the part of their friends, and often at the suggestions of the physician, abundant evidence could be furnished; hence to arrest or checkmate the sin of "over-feeding" hereafter, we write the following: Do not feed your patient until the disease is cured, in all acute affections; and in all chronic affections be sure to give the digestive organs rest at least fourteen to eighteen hours during the twenty-four, if you would



cure them of their diseases. A rest of a day or two by your chronics will be fraught with wonderful results in favor of recovery. To do without breakfast, drinking plenty of water, either hot or cold, will produce a favorable change for the good of the patient in restoring energy to the digestive organs. The patient will not starve by any means as long as the tongue is coated, and when that cleans off, there will be a natural demand for food that will be the most satisfying, perhaps, that the patient ever experienced. The mouth will fairly "water for what the system needs." Remember that "nature makes no mistakes." To crowd the stomach or impose labor upon or in it when unable to perform it, would be called cruel in us if applied to any other tired, run-down, worn-out laborer, wouldn't it?

In cases of acute disease, the system goes on a strike, as it were, and the laborers at rest; no "designs on the Trestle Board," and all is confusion—it's "high twelve," and the sun is at meridian height; the confusion reigns supreme, and to interfere results at times in death. If we did but know that the digestive organs were powerless to do duty when disease has sway, we would surely act in accordance with reason, let them be until they recuperate their lost power. The whole system is a unit, and when one part is out of gear, all is disturbance. Settle the commotion first, then it can eat its meat "with gladness, and with singleness of purpose," to build up more vital fluid.

Remember that acute as well as chronic diseases lose their grip when the digestive organs are let alone until there are demanded in the system more rations to replenish the waste. Let nature assert herself in her own way. The tongue will clean off and the mouth will become moist, and the stomach will receive the food with a relish, long before the period of starvation sets in. Give the patient plenty of water, suited to the conditions. One glass of water for every ten or twelve pounds of flesh (or weight) every day, will satisfy the de-

mands, whether in summer's heat or winter's cold. This quantity is sufficient to hold in solution the inorganic material and wash away the debris.

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### SUGGESTIVE THERAPEUTICS.

While it is not my province to enter into the subject fully, but only to give it passing notice, yet we would wish to emphasize the fact in the mind of the reader with an earnest desire to give relief to his patients in every way indicated, that as there are many conditions of the mind culminating in real pathological affections, to know how to lead the mind out of the channel or channels that generate as well as perpetuate disease, it behooves the practitioner to study how to most successfully accomplish that object, with credit to himself and justly to his patient. We urgently request the reader to perfectly familiarize himself with the fundamental laws of psychic phenomena and suggestive therapeutics, by reading and studying such authors as Hudson, Bernheim, Moll, Tuke, Tukey, Cocke, Sextus, Colville, Notzing, Kraft-Ebing, Wetterstrand, and last, but not least, "Suggestion," by Dr. George C. Pitzer, 3955 Belle Place, St. Louis, Missouri. No man is thoroughly qualified to treat disease without a fair knowledge of this subject. It makes a completely rounded-up whole of the healer. Study the subject. Remember that suggestion moves the busy world we live in; it moves the complicated cosmos called man. It is the prime mover of all things, and to know mind is to "know thyself," to know how to direct others in the right way. The magnitude of Suggestion may be compared to a boundless ocean of unfathomable depth, unsearchable in entirety; but brought *en rapport* with healthy thoughts, right ideas presented from proper motives, it produces marvelous results, satisfactory and healing in their influence, creating within the body every change for good or ill, "For as a man thinketh, so is he."

# ORIFICIAL SURGERY.

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## THE ORIFICIAL PHILOSOPHY.

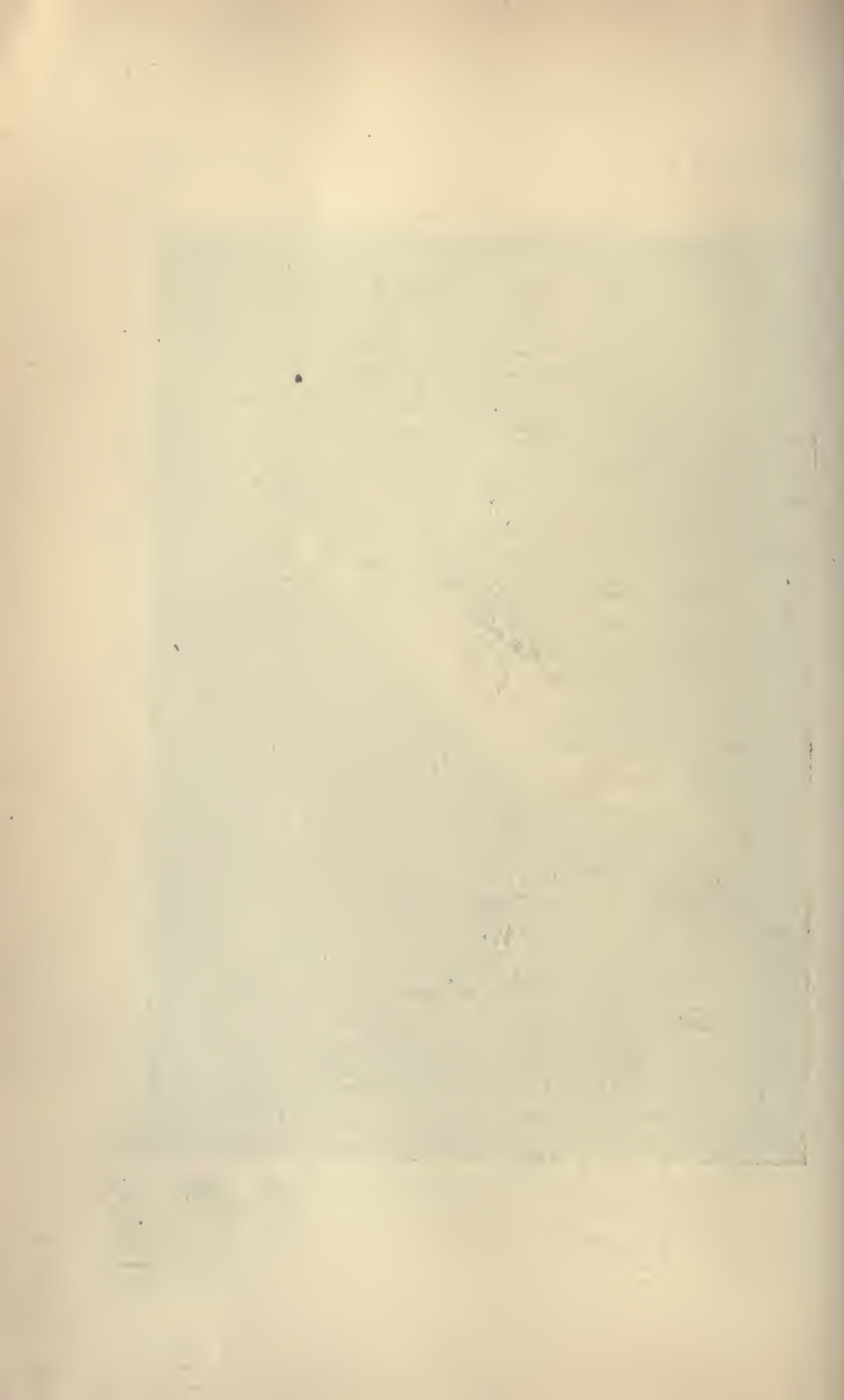
Osteopathy is greatly aided in many instances by the use of the orificial work. Whether instruments are used to divulse the sphincters or not, the necessity of such work is often essential. To expect to cure diseases of long standing without flushing the capillaries is oftentimes futile, and while this may be done by repeated manipulations, it is not known generally by the Osteopath that taking off the pressure of the terminal filaments in the sphincter muscles is paramount to everything else, when needed. That this work is marvelously successful at times, the accumulated experiences of hundreds of the best orificialists in the country have abundantly demonstrated.

That there are those who would presume to assume that all there is in the healing art centers in Osteopathy, it would not require the straining of a point to establish. Narrow-minded people, those who know only a little of what they pretend to, and nothing of some things that others know, will necessarily be self-conceited, circumscribed, and ready to rise up and oppose everything that does not seemingly come under the purview of their restricted horizon; but the experienced investigator, the philanthropist, who feels an interest in the advancement and welfare of the race, willingly goes to work to "sort out the good, and throw the bad away." If orificial work were merely an experiment, it might be plausibly rejected, but it is not that now, but the rich fruitage of a sound, philosophic, proven principle, whose adoption and practice by the greatest minds of this age demonstrate it to be the most effectual means of relief, and the only thing to do in many conditions to afford relief. No rational investigator



PLATE XVI.—The Flux and Diarrhea—Movement for.





who desires to benefit mankind is willing to drop one arrow from his quiver of accumulated, proven facts; but whatever of good he sees anywhere, is willing to give it a place in his armamentarium, for use when needed.

There are cases which will not recover with Osteopathic treatment alone in its present developed state; hence to ignore adjuvants which, if used, carry out the same principle of "taking off the pressure," relieving bound-down nerve filaments, and removing excrescences, constrictions, overcoming undue contractions, would be to refuse aid when in need. The medical profession opposed the orificial philosophy for a time, and even men of the "same craft" fought the promulgator (Professor Pratt) until the demonstrations of the truth of the philosophy were apparent everywhere, and in almost every instance where used forced its use into their practice, until now, the scientific, "up-to-date" practitioner of every school recognizes the utility of the philosophy. It is not a struggle for some theoretical hypothesis, but a welling-up of a great truth that stands out in letters written with a pen of fire, forcibly inviting recognition. It is the *sine qua non* in many cases; instance, phymosis, cicatricial formations, especially in cervix uteri; bound-down clitoris, papillae, pockets, fissure and fistula, and the best possible means of divulsion of sphincters, and flushing the capillaries, relieving constipation; of taking off the pressure of all terminal filaments involved in reflexes from sphincter muscles, and removing sources of irritation.

When it is known that "all diseases of a chronic character manifest themselves at the mouths of organs," the philosophy of orificial surgery will become interesting.

Professor E. H. Pratt, of Chicago, Illinois, lays down a few principles in reference to this science, or the philosophy of this science, that have stood the test without refutation for a decade and a half, which ought to be proof of its merit. We here quote what he says after four years of experiment, and after hearing the successful results of over one

thousand well attested cases in a great variety of chronic ailments that had stood the fire of a great many sorts of treatment, medication, etc., to no benefit, and these results show a percentage of recoveries that is truly astonishing (81 per cent.), and it will be remembered, cases abandoned as incurables at that. Here is what Professor Pratt enunciates: "The work of orificial surgery involves the removal of all sources of irritation and the securing of normal tension for all sphincters. It would take a volume to properly describe this work in detail, and do the subject justice. The work can have no rival, as it is only recommended in cases in which other measures have failed, and instead of being frowned down without proper investigation, deserves a fair trial. It discloses many things which before were not understood, or at least appreciated. For instance: First—The irritation of an organ starts at its mouth. Enlarge the proposition, and you have the thought that bodily nerve waste in general begins at the openings of the body. Second—The smoothing of rough orifices, and the securing of proper dilatation of all sphincters, guarding them, immediately and permanently (so far as material things can be permanent), improve capillary circulation in general, and hence in particular. Third—That in consequence of the increased reactive powers, in cases where the work, unaided, is sufficient to restore perfect health, the properly prescribed remedial measures will now produce their hoped-for results, and recovery will be possible. (This is said in reference to medication.) Fourth—The reaction from orificial work is usually immediate, but may be delayed in certain conditions, for several weeks. Fifth—The patient's sensations are not a safe guide to the existence of these irritations. Sixth—The work on the sexual organs (sexual system) is ineffective, and oftentimes harmful, if rectal irritation be not first corrected. Seventh—That complete orificial work is essential to success; *i. e.*, must include all the orifices, and be prosecuted at intervals, until each and all of them are in a normal state. Eighth—That by this work

as a basis, fully four-fifths of the cases that are now abandoned as incurable are found to be easily, surely and permanently relieved. Ninth—That the condition of the sympathetic nerve power has more to do with the health and happiness of the human body than is usually supposed. Tenth—That the amount of local trouble present furnishes no index to the nerve waste involved, or to the necessity for the work, or to the beneficial effects to be expected from it. Eleventh—That the central principle (of orificial irritation as a predisposing factor in chronic diseases generally) has stood well a continuous and active test, public and private, in hundreds of cases, and by hundreds of doctors, for the last three years (this, it will be remembered, was written in 1888 or '89), and no protest has ever been uttered against it, and that the improvement, as experience multiplies, has been confined to methods of carrying it out, and not to any change in the principle itself.

“Such, in brief, is a condensed presentation of this vast subject of the philosophy and its scope. Its successes are marvelously brilliant and numerous; its failures are many times due to incompetent, incomplete work and its unfortunate use in cases too desperate to be saved by anything short of a resurrection day. It is not a foe to any other measure of healing, but is a help to all of them. As is usual in all human endeavors, those who have opposed its investigation most violently are those who know the least about it, and were least fitted to speak on the subject.” We further quote him, reporting some important facts worth knowing:

“Bring me an individual with clean lips and nostrils; a palate of proper length and tonsils unobtruding; a rectum that presents neither piles, prolapsus, papillae, pockets, fissure nor fistula; an individual whose sexual orifices are smooth and free from all irritation; if a man, his foreskin must be free, the frenum of proper length, the urethral passage normal in size, especially in its prostatic portion; if a woman, her hymen must be pale and atrophied, her urethra void of caruncula and



ulceration, her internal and external ores uteri reasonably patulous, and without undue sensitiveness: bring me such an individual, and I will point to the same individual and show you a human being whose digestion is good, whose sleep is sweet and restful, whose capillary circulation is superb, whose very existence is a source of uninterrupted delight. Such men and women maintain a steady poise of mind and body; they live to the fullness of time, and, unless removed by accident, their dissolution takes place on the principle of the 'one-hoss shay.' They settle down peacefully and slowly into their last sleep, because their time-piece is run down."

"On the other hand, introduce to me a mortal suffering with passive congestion in various parts, whose blood finds its lazy way back to the heart by slow stages, because the peristaltic action of the arteries has tired out, a person whose vitality is low, and whose poor, enfeebled body begins to be a prey of inherited or acquired derangements, consumption, scrofula, or organic derangements of whatever form they may have; show me such an individual (and they are as numerous as withered leaves in autumn), and I will stake the reputation of this idea that I shall be able, without straining a point, to find legitimate fault with the condition of some one or more of the orifices of the body."

"In all pathological conditions, surgical or medical, which linger persistently in spite of all efforts at removal, from the delicate derangements of the brain substance that induce insanity and the various forms of neurasthenia, to the great variety of morbid changes repeatedly found in coarser structures of the body, there will invariably be found more or less irritation of the rectum, or the orifices of the sexual system, or both."

All truth has had to fight its way through crucifixion and resurrection before it became immortal. When the profession, or the laity, learn what orificial philosophy means, the opposition will cease. Osteopaths will resort to it when needed (which is oftener than some are willing to admit); and

more use will be made of it. There are a few of the minor measures that the Osteopath is of right entitled to; such as the divulsion of the sphincters, the reduction of enlarged prostates, straightening the coccyx, and irritation of the clitoris, to produce reflexes in parturition.

The surgical part of carrying out the orificial philosophy will only demand his attention as a matter of curiosity, until he shall have donned the role of surgeon, or becomes a general practitioner in the common acceptation of the term "physician."

It will be necessarily a matter of interest to him when, in some cases, he sees a hanging fire of the disease of his patient for long months of laborious effort to relieve, succumb kindly to a very simple orificial interference. Then his eyes will be widely opened to the necessities of the uses of this marvelous philosophy.

These two sciences seem necessarily inseparably related to each other in practice, and the one is incomplete without the other. Those who do not yet understand or know of Orificial Surgery, we would respectfully refer to Prof. E. H. Pratt, M.D., LL.D., the first to propound to the world the philosophy of Orificial Surgery, its necessities, uses, application, etc. Osteopathy and Orificial Surgery are complementary sciences, and should be used, one to aid the other. The practitioner will learn the former from this book and the latter through its founder, Professor Pratt. Knowing the principles involved in each gives double assurance of competency to cope with pathological disturbances of all kinds.

It will be of vital importance to the Osteopath to know that, in the use of the Bivalve (an instrument used to divulse the sphincters) the capillaries are flushed. Universal warmth ensues at once, all over the body, a regulation of the circulation is at once discoverable, the veins become filled, are more active, the lymph has entered the veins, the circulation increases, and new life is started everywhere in the system. This means of starting up dormant forces can not be

too highly extolled. Resort to the use of this wonderful capillary flusher should be had when indicated, and intelligently applied, it will invariably be followed by beneficial results.

It is not the province of this volume to enter into all of the official philosophy, but what has already been said ought to be enough to excite the reader's interest.

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### THE GARMENTS TO BE WORN DURING OSTEOPATHIC TREATMENT.

To give thorough, satisfactory treatment, the patient should have on a single garment and that large enough to be loose-fitting, something like the pajamas, and the ladies might have an additional loose gown. It is not necessary that exposure be made of either sex in the application of Osteopathy, but the comfort of the patient is desired as well as that of the operator. This advice especially applies to patients who receive a number of treatments in order. In all cases the fewer the garments, the more effectual the treatment.

The object is to have all the muscles free, and the limbs perfectly movable. While the various plates shown in this book are taken with most of the clothing on, yet we would insist, for satisfactory results, that the patient use a separate garment while being treated.

## REDUCING DISLOCATIONS.

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We do not desire to enter into a long dissertation on this subject. We simply call attention to the more common dislocations that will demand the attention of the Osteopath in his practice, and he should know how to treat them intelligently.

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### DISLOCATIONS OF THE ELBOW JOINT.

This joint may be dislocated in five directions:

First—Both bones backward, marked strongly by alterations in the form of the joint and loss of motion; and there is considerable projection posteriorly by the ulna and the radius; on each side of the olecranon there is a hollow; the hand and arm are in a state of supination, and can not be turned prone.

Second—Lateral dislocation of both bones of the forearm; ulna thrown on either the internal or external condyle. There is increased width and great distortion of joint, and the forearm is flexed and pronated. In the dislocations outward, the radius forms a prominent swelling, and in dislocations inward there is marked and elongated projection on the inner side of the joint.

Third—The third dislocation is where the ulna is thrown backward. The deformity is very great; the forearm and arm are twisted inward, and the olecranon projects considerably. The forearm can not be extended, nor bent to more than a right angle.

Fourth—The radius is thrown forward into the hollow above the external condyle of the humerus. The forearm in this dislocation is slightly bent, but can not be brought to a



right angle. The hand is between pronation and supination.

Fifth—The radius may be thrown backward. This is seldom or rarely ever seen.

#### THE TREATMENT.

The first, second and third dislocations may be reduced in the following manner: Seat the patient on a chair; then take hold of the wrist; put the knee on inner side of the elbow joint, bend the arm, and at the same time make pressure upon dislocated bones, so as to separate the coracoid process of the ulna from the posterior fossa of the humerus. And while the pressure is forcibly kept up by the knee, the arm is gradually bent, and the bones will slip into their places.

In the fourth dislocation the hand should be turned supine, the forearm bent, extension made from the hand, not including the ulna in the hold.

In the fifth dislocation gentle pressure and extension will succeed in reducing it.

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### DISLOCATIONS OF THE SHOULDER JOINT.

The humerus may be dislocated in four directions: Downward into the axilla—most common of all dislocations of this joint; the symptoms being, lengthening of arm, a hollow is felt under the acromion, the shoulder flattened externally, the elbow sticks out from the side and can not be made to touch the ribs, the head can be felt in the axilla, and the hand can not be placed on the opposite shoulder, as in a normal condition. The second dislocation is forward and beneath the clavicle, upon the second rib, the coracoid process being felt on the outside of head of humerus. The symptoms of this dislocation are: The arm is slightly shortened, elbow projects backward, the acromion seems pointed, the depression of the deltoid is more considerable than in the preceding dislocation. The third dislocation is backward on dorsum of scapula, beneath spine, where the head of the bone is easily



PLATE XVII.—Showing Flexion of Lower Limb.



felt, and will be discovered to follow the movement of the elbow when located, in the movement of arm. The fourth dislocation is only partial, usually that of a pressing forward against the coracoid process. The symptoms are a projection of the acromion and hollow under it, while the head of the bone is prominent in front, and may be felt to move on rotating the elbow. If the hand of the injured side is placed upon the sound shoulder, the patient will be unable to bring his elbow to his side, and if the elbow is brought to the side, his hand can not remain on the shoulder.

#### THE TREATMENT.

There are many methods of reducing these luxations, such as extension, heel in axilla, knee in axilla, the use of a towel, what is termed the perpendicular method, Kocher's method, etc. The following are sufficient for all practical purposes to operator.

The simple extension method is made as follows: Pass a towel around the chest, under the arm and across above the shoulder, so as to firmly fix the scapula; another towel is fastened in a loop around the arm of patient above the elbow; extension is then made by an assistant, the operator manipulating joint. This is done while patient is sitting erect on a chair or stool. When the extension is made for a short time the operator may easily reduce the dislocation with but little if any pain to patient. The reduction is best made while the knee is used as a fulcrum, as more steadiness may be secured thereby.

The second or heel in axilla process is generally preferable. Place the patient on a table, or the floor, on a cushion or mattress, soft pad in axilla, a strong towel looped around arm above elbow, long enough to slip over shoulder of operator, the heel in axilla, using counter extension with the towel until the head of humerus is in place to slip in, then use arm as a lever, pushing the head into place, upward and outward, and at the same time pulling the limb downward and a little forward by means of the towel that is secured



around the arm above the elbow; extension being best made this way.

**Knee in axilla method:** The patient is seated in a chair, and the operator places one knee in the axilla, resting foot on a chair or stool, puts his hand on the shoulder so as to steady the scapula and shoulder joint, with the other depresses the elbow over the knee, and presses head of bone into place with hand.

**Reduction by the perpendicular method:** Place the patient on a low chair or a couch, and then raise the arm perpendicularly by the side of the body, or head more properly, at the same time fixing the acromion, and make gentle traction, replacing head of bone by turning arm in a semi-turn either way, so as to place the head of bone in socket or junction with head of scapula. If but little force is required, the arm may be taken in one hand, gently stretching it upward, and steady the acromion with the other. Should more force be required, an assistant may steady the shoulder, and the operator may use his foot against acromion. When the bone is felt to slip into its place, the arm must be brought down to the side, while the head of the bone is held outward by the hand in the axilla.

**Kocher's method:** The forearm is flexed on the arm, then turned outward as far away from the chest as possible; the elbow is then carried well forward and upward. Rotate the arm inward and lower the elbow, when the head of the bone will probably fall into place. This may be done without using an anesthetic.

The extension used in any dislocation forward must be made downward and backward at the same time. For dislocation backward, the extension must be made forward. After reduction, a small pad may be placed in the axilla, and the arm and the shoulder held in a sling until all soreness subsides; the roller held by a bandage, and the joint held quietly.

## DISLOCATIONS OF THE HIP JOINT.

Of these there are four: Upward on the dorsum of ilium, downward into the thyroid foramen, backward and upward into the ischiatic notch, and forward and upward on the body of the pubes.

The first (upward on dorsum of ilium) happens more frequently than any others of the hip joint. The symptoms are: There is at once perceived a difference in the length of the limb, change from a normal position, toes turned inward, diminished motion and a flattening of hip. The toes rest on the tarsus of opposite foot; the knee and foot are turned inward; the knee slightly advanced to front and resting on other leg (thigh), above the knee of its fellow; the limb one or two inches shorter than the other, and legs inseparable.

The second dislocation—into the thyroid foramen: The dislocated limb is two inches longer than the other one, and in those thin in flesh the head of the bone may be felt on pressure. There is usually flattening on side of hip, and the body is bent forward. The toes point to the ground, and the foot may be turned either outward or inward.

In the third dislocation—backward into the sciatic notch: The head of the bone is resting on the pyriformis muscle. The limb is from one-half to one inch shorter than the other one. The toe rests on the ball of the great toe on the other foot. The knee and foot are turned inward; the toe touches the ground, not the heel, when standing. Not much flexion or rotation of the limb can be made.

The fourth dislocation—on the pubes: The limb is shorter than the other; knee and foot are turned outward, and can not be rotated inward; the head of the thigh bone is readily felt on the pubes.

## THE TREATMENT.

These dislocations may be reduced by manipulations. They may not be easily done, except in recent luxations, and usually require several attempts to do. The muscular con-

tractures due to putting them on an undue strain are difficult to overcome after a time elapses after dislocation.

1. Dislocation upward on dorsum of ilium.—To reduce this dislocation we use the limbs as levers, the trochanters as fulcrums, by which the head of the femur may be slipped into place. The knee must be bent on the thigh and the thigh on the abdomen or pelvis; the operator, grasping the ankle with one hand and the knee with the other, causes the thigh to perform circumduction movements toward abduction, finishing with a rotary movement of the femoral axis, when the head of the femur will probably slip into place. The limb may be reduced frequently and more easily by placing the ankle of the dislocated limb across the knee of the other limb, the patient sitting on a stool or chair, knee flexed, placing one hand at the hip joint, putting the breast on the knee, pressing it down to a right angle, and with the hand holding the ankle, patient relaxing as much as possible, operator suddenly jerks the leg off the knee against his side, and the joint goes in place. Professor Bigelow recommends that the thigh be flexed with a little inward rotation, producing inversion of the toes, and then the thigh should be abducted; circumducted, and at the same time rotated outward. This has been described in the directions—"lift up, bend out, roll out."

2. For the Dislocation Downward.—Rotation inward of the flexed and slightly abducted thigh upon the fulcrum of the Y-shaped ligament.

3. The Dislocation Backward.—Dr. Bigelow reduces this dislocation by circumduction of the flexed thigh inward, so as to unlock the head of the femur, and then abducts and everts the limb with an outward jerk.

4. Dislocation on the Pubes.—Flexion, combined with abduction, may be tried. If not successful, abduct thigh backward and downward, placing hand against head of femur, pressing it downward under rami of pubes, then abduct with flexion, suddenly jerking limb downward and outward.

These luxations should be thoroughly studied before

beginning to operate on them. Frequent and oft-repeated attempts at reduction may result in inflammation, and the proper diagnosis of conditions, location, muscles involved, should be duly considered before undertaking to manipulate.

It may be objectionable to some to use pulleys, but in some instances it will be found easier on patient and operator to do so. The luxation on pubes is one of the most difficult to reduce, and the operator will find that the pulley will be of immense service in its reduction. Extension and counter-extension may be made so gradually as to produce but little if any pain, and the reduction may be made by simply a slight pressure on head of bone. If the pulley is used, care should be taken to use well-padded bands in the groin and around the limb, and the pulley should be manipulated with a crank, so as to completely govern its action, being particular to use only enough force to let the head of the femur pass the edge of the acetabulum—not to increase the existing laceration of the capsular ligament around head of joint.

With the proper care, nearly all of these dislocations may be reduced, making many a lame person leap for joy. There is no propriety in letting these dislocations go on for years, for they may all be set, if taken in time. Osteopathy has gained most of its laurels in setting "hip joints." Many a case that has gone to an Osteopath with lameness, limping and using crutches, has gone away without them, leaping and clapping his hands and vociferating with all the thankfulness imaginable. Study your cases, and manipulate the parts until sufficient relaxation of the muscular structure warrants any attempt to set, then try it. Keep trying until it is accomplished.

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### DISLOCATIONS OF THE KNEE.

The knee is often dislocated, and there are four ways it may be out of place, to-wit: First, Inward—The tibia projecting on the inner side of the joint, and the condyle of the femur resting on the external semilunar cartilage. The sec-



ond dislocation is where the tibia is thrown on the outer side of the joint, the condyle of the femur being placed on the inner semilunar cartilage. The third dislocation—the tibia is dislocated forward. The fourth dislocation is when the tibia is luxated backward. Symptoms obvious, and easily recognized.

#### THE TREATMENT.

Each of these dislocations may be quite easily reduced by extension and counter-extension. The great tendency in the injuries of the knee is to take on inflammation, and it will be important to enjoin absolute rest after injuries to the knee (of any character whatever) until all soreness has subsided.

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In the adjustment of the toes and fingers, gentle extension and pressure are all that is necessary to be done. The same may be said of the wrist.

Bunions are caused by dislocation of the third joint of the great toe, and cured by setting the joint and keeping it in place by cotton pressed between it and second toe. Repetition of the setting will be required to keep it in place in some cases.

For further information regarding luxations consult the large works on surgery.

# FEVERS AND THEIR TREATMENT.

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## FEVERS.

The phenomena in the body characterized by a rise of temperature, increased circulation of the blood, marked tissue change to a greater or less degree, disturbance in the secretions, mental excitement or depression.

The causes of fever are a mooted question. Many theories are advocated, but the most plausible seems to be that of central disturbance near the corpus striatum, due to blood pressure. The cause of the blood pressure is as much a mooted question as the cause of fever.

As all heat is due to molecular change or friction, or chemical changes, it is very reasonable to attribute the cause of fever to bi-chemical changes, causing increased molecular action. It is not our purpose to argue this question, but submit the above for consideration.

It is a fairly well settled fact that certain stimuli to the vaso-motor filaments along the sides of the upper cervix ordinarily modify the circulation and regulate it, and reduce fever. Inasmuch as the vaso-motor nerves control the peristalsis of the muscles surrounding the arteries, regulating the size of the caliber, and these nerves are the end filaments that we stimulate, it follows that the regulation of the circulation of the blood is through the said filaments, but necessarily starting from the center or starting place of said filaments. Some have supposed that the heat disturbing or regulating center is near the corpus striatum. Be that as it may, impeded circulation may be rationally responsible for the increase of temperature we denominate fever, the disturbance originating from pressure due to contraction of muscular fiber, which was due to excessive or undue irritation of

terminal nerve filaments; cold, contracting down on end nerves, or poisons introduced into the system, irritating nerve centers or paralyzing them. The normal temperature is said to be  $98\frac{1}{2}$  degrees. In fevers it may rise to 106-7 degrees, or even higher, and the tissue waste is in proportion to the temperature and the duration. The disordered secretions are usually manifest by the deficiency in quantity, the dryness of the tongue, clamminess of mucous membrane, thirst, high-colored urine and constipation.

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#### GENERAL TREATMENT OF FEVERS.

The first indication would seem to be the reduction of the temperature. The reader will please to bear in mind that fever is not a disease—only a symptom. Inasmuch as the Osteopath uses no medicine, it becomes a matter of great interest to know how he is going to reduce the fever. Time-honored and long-cherished habits demand a plausible reason for discarding medicines in this instance. Doctors have had recourse to aconite, veratrum, antifebrin, antipyrine, spiritus nitri dulcis, etc., for long years, and for any one to pretend to say that fever could be reduced without the use of some one or all of these agencies elicits intense criticism. To appear on the arena as a physician without medicine or prescription blank, and pretend to possess power and knowledge sufficient to control the temperature of the one possessed of a fever, seems the height of presumption by the medical fraternity, and they are ready to denounce such a pretender as a fit subject for an insane asylum. Notwithstanding the announcement by them of the fact of fever being caused by a disturbance of the nervous system, they are unwilling to acknowledge that a regulation of the action of the nervous system will cure fever—unless, perchance, it comes as a result of medication. What singular beings we are!

These are the means the Osteopath uses to reduce fever. It matters not what name the fever is dubbed with, whether

PLATE XVIII.—Manipulation of Sciatic Nerve.







typhoid, typhus, scarlet, dengue, yellow, cerebro-spinal, enteric, intermittent or erysipelatous, the Osteopath has but one remedy—that is, Take Off the Pressure. This cures all manner of disease. The general treatment to restore the general circulation over the whole body is to be remembered, and the proper pressure on the sides of the cervical vertebrae (from the base of the skull), the occiput, down the neck for a space of three or four vertebrae on the terminal filaments of the vaso-motor nerves in that region, from two to five minutes, regulates the action of the peristalsis of the arteries perfectly, satisfactorily. The pressure should be made lightly at first, gradually increasing the pressure to a sense of a little uneasiness, and holding the fingers steadily there for a longer or a shorter time. This results in a remarkable lowering of the temperature, and starts the perspiration in every pore in the body. It does it, too, without injury to the patient. This is the universal treatment for all fevers. Care should be exercised that too much pressure be avoided, for in some diseases there is a liability of a return of fever, and if the former pressure has produced soreness in that region, it makes it painful and unpleasant for subsequent manipulations; hence due care should be exercised.

The Osteopath has recourse also to the natural fluid of the body, to-wit: Water. As water constitutes about seventy per cent. of the human body, it is essential that it be kept supplied. Water is the most complete solvent of the elements of the body components known, hence should not be lost sight of. A disturbance in the system, remember, is caused by molecular changes, and these changes are largely due to precipitation, coagulation of the albuminoids for lack of the solvent, water. The necessity of this fluid becomes a matter of eminent importance, hence it should be furnished. The fever patient then, should have this supplied at short intervals in quantities varying according to demands, thirst, etc. The warm bath is also at times essential. Directions for bathing should be followed as described elsewhere.

In all fevers the friction is caused by decomposition of the elements. Decomposition may ensue from two causes: The one being due to disturbance of nerve centers, producing paralysis of nerve filaments all along the line to their terminals, and the other from pressure somewhere along the course of the nerve—in or on its surface, or at its terminal. Either of these causes produces a like result. The stimulus at the center may be due to direct pressure on the center, or by reflex influences from pressure, or from poisons introduced into the system and absorbed, more than the system has power to eliminate. Here is a clincher and a hard nut to crack, for the medicine man to solve and dispose of satisfactorily. The use of water, as the reader may now understand, becomes a matter of urgent necessity in all cases of fever. The temperature of the bath should be about 80 degrees at the start, and after being in it for a few moments, cold water should be gradually added, and the effects upon the patient carefully observed. When the surface begins to turn moderately turgid, blue, the effect is produced that is needed for the time. Take the patient out of the bath now and remove the cloths or sheet used, wrap in a dry sheet or blanket, place in bed and exclude the air from the body until reaction ensues, or the patient has had a refreshing sleep. The fever is now measurably lessened by this process. The body should be dried, after due allowance of time has elapsed, from all accumulations of perspiration, and the clothing changed to clean, dry, well aired spreads; the patient instructed to take deep, long inhalations of air (through the nostrils), retaining air as long as is comfortably possible, and go through a half a dozen or more of such exercises at once—or at one sitting, as it is termed. This should be done every bath, and the bath should be repeated from every three or four hours to once or twice a day until the fever is cured. All this time let the patient have no victuals, fruits, nor any food of any sort until the tongue cleans off, and food is called for. The patient will do that. Don't be uneasy about the patient

starving. You sit by and wait until nature asserts herself. Then it is time for you to move in that direction. What would you think of the sense or the judgment of a man driving a horse, tired, worn down by a heavy draft, up a steep hill, pulling all his exhausted strength would allow, and strained to do that, and the driver (the doctor or nurse in this case) were to add more weight, and lash the beast to make him increase the effort to pull the weight? Would you tolerate such a manifestation of abuse—of downright cruelty? You say no. Then make the application! Take Off the Pressure if you would cure anything in the form of disease. See?

The above principles embrace the treatment of all fevers, and to be successful you should lay aside your prejudices (if you have any) and treat every case on similar principles, and something like the course marked out.

It is said by one author, in treating fever, "Don't starve a fever"—and after giving the pathology showing that the system could not assimilate food, demonstrated his utter incompetency to decide the matter physiologically. If the system is not capable of assimilating food, why tax the digestive organs with work it can not do? And if it manages to automatically go through the process, without the proper mixtures of the secretions necessary to be taken up and converted into assimilable material, where is the reason for it? We then lay this maxim down as universally applicable: Do not feed any fever. When the tongue is coated, every tissue in the body is deficient of power to work—run down and closed up all of the workshops, lain down to rest—what sense is there in shoveling in more debris? Wait until nature calls for help (food); then, and not till then, is it proper to feed a fevered patient. That will then be when the system no longer has fever. Your patient will not starve! The whole nervous force has turned its attention to renovating the system of its poisons, and you need not, under any circumstances, undertake to change the order of things. The already accumulated



nerve substance will not decrease in its effort to clean up the house that has not a comfortable apartment in it. You stand off, hands off. Remember that nature is now master of the situation; she is asserting her prerogative, and she will perform her labor, if left alone, perfectly; and if you will sit by and watch her wisdom in sweeping and garnishing her apartments, you will learn a lesson you never knew before.

"Well," one says, "what are you going to do for your patient? Are you going to sit and let your patient starve?" "Who ever heard of such a cruel wretch?" "Won't let his patient have anything to eat, eh?" "Here waste is reducing the flesh every day, and not a mouthful of food has that poor, sick boy had for six or eight hours." "Poor thing! He is almost starved! Why, since I come to think about it, he hasn't had a mouthful of food for twenty-four hours! Ain't that awful? Starve! Doesn't that look like it?" This is about the sort of expressions that will confront the sensible physician while he is watching his patient. But we opine that if our directions are followed, medicines all thrown to the cess-pool, all food withheld, and the proper nursing afforded, your patient will come out of his sickness in a much shorter time, stronger, recuperate in half the time, and be better every way, less mentally beclouded, brighter intellect, and sooner fit for doing duties devolving upon him or her! Don't feed your fever patient!

The fever is only a symptom, and not a disease. Where is the trouble? What produces the fever? We regard fever as a result of chemical changes in the elements—friction of the molecules, due, in many instances, to capillary disturbance, resulting in congestion, or hyperæmia (which means too much blood in parts). Decomposition (tissue metamorphoses of a degenerative character) takes place, friction ensues, heat is the result.

It is pretty fairly well settled now, that the circulation of the blood in the arteries is controlled by stimulation of the cervical vertebrae at the upper and back portions, as well as

other vulnerable spinal localities, and that when this is effected we become masters of the situation. All treatment for all sorts of increased temperature should be wisely directed to these localities—never lost sight of. For any and all degrees of temperature, for all of the so-called fevers, whether from a slight cold to a burning scarlet or a raging typhoid, the neck is the first place to look to and to begin to treat the patient. Gentleness can not be too urgently enjoined at first. Here is the throttle-valve that controls the moving of “the world,” the cosmos, and it is important that the degree of pressure on the lever be cautiously heeded!

The patient should have a comfortable resting place, provided with pleasant surroundings, plenty of light, pure air, and of the proper temperature (ranging from 65 degrees to 70 degrees). The body should have its quota of pure water, and at short intervals, and of a temperature suitable to the condition or desire of the patient. If there ever is a time to use water for “salvation,” not of the spiritual man, but of the physical, now is the auspicious time, the use of which is the essential thing—internally, externally, and I might reasonably insist eternally, so far as the fever term continues. The temperature of the water is a matter to be duly looked to—to be considered. It is a strange peculiarity in nature that she selects the things suitable in all instances, if allowed to dictate for herself. The motto should be: According to condition of the patient. The bathing in water of the whole body is a question that requires much judgment on the part of the nurse, as regards the time to remain in it, the temperature of the bath, and the intervals that should elapse between baths. The temperature of the body, the stage of the malady, the strength of the patient, and the effects of the bath on the temperature, should be the suggesting factors in this matter. It should be remembered that the reduction of the temperature depends upon the removal of the sources of friction that causes the fever. During the bath there is absorbed into the system a considerable quantity of water; this, being the most

diffusible stimulant, nature accepts with delight as a solvent—a harmless solvent of all of the elements in the body. The indications in cases of fever become apparent to the physician as well as to all other practically common-sense individuals (pardon the expression and the applicability). At any rate, use water. Give the patient water—pure water—a little at a time, but give it often. Do you know that water puts out fire, and that it contains two parts of oxygen?—the very thing that purifies blood; and a demand for this element is loud and persistent as long as heat continues? Use water, then, in all fevers. The evaporation of the water is causing the fever. Supply it, and the fever is cured. This is the way to feed the patient—starve the fever—drown it.

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### TYPHUS FEVER.

Synonyms: Jail fever, ship fever, and contagious.

This is an acute, infectious, epidemic, febrile state; comes on suddenly, producing great depression of the vital forces, characterized by a peculiarly sickening odor, eruption of a measly character all over the body, except on the face, and presenting a deep, dusky flush, and a glazed appearance of the skin; pupils contracted and eyes flushed. There is extreme tenderness of the shin bones, muscular soreness, extreme prostration, vertigo, tremors and subsultus, and most generally attended with constipation (this is the peculiar characteristic), with the eruption like measles, except on the face.

The symptoms of this fever simulate cerebro-spinal fever very closely, only that the rigidity of the muscles of the neck are more pronounced in cerebro-spinal fevers. The complications may be pneumonia, swollen parotid glands. The mortality ranges from five to thirty per cent.

#### THE TREATMENT.

The neck muscles should receive our special attention.

The evidences of capillary congestion are marked in the mottled skin and eruption. Manipulate the neck and spinal muscles thoroughly, profoundly; lift the clavicle, stretch the neck, and rotate it; elevate the chest and stimulate spinal muscles by rotary vibrations upwards and outward; also treat in like manner (the rotary manipulations of the hand) over liver, stomach and bowels. In fact, the whole system needs a general treatment, being careful not to use too strong force. The vaso-motor region will demand attention to reduce the fever.

The moderately warm bath will be indicated as often as once a day, stimulating the skin by dashing cold water on the body after coming out of the bath. Use water clysters daily, and give pure water to drink every half to one hour in moderate quantities. Use nothing in the way of food until the system is in a condition to assimilate it.

Notwithstanding the extreme prostration, food is not indicated. Get rid of the poison, relieve the congestion, start up the circulation, arouse the nerve forces, wash out the debris, and then the system will call for what it needs. To break the spell that holds the mind enchained—the craze to feed the sick—is what we desire to emphasize.

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### RELAPSING FEVER.

This is a sort of a bilious typhoid famine, febris recurrens, spirillum fever, self-limited disease, lasting about six days, and said to be contagious and epidemic.

After it has lasted about that time it suddenly or gradually subsides into a remission, to be again followed by another attack similar in character, but associated with an alteration of the structure in the viscera (which is said to contain micro-organisms—the spirilli of Obermeyer. (Wonder why he turned them loose in that particular fever?)

It is said that the cause of this particular affection is contagion. Specific! It is also stated that “it acquires its



greater activity from filthy, crowded and unhealthy populations, amid which it prevails." The beast that causes this disease is a regular "corker," but he is only seen in the minutest form (and that in the blood) after the fever has set in. During the "fever" he is a minute screw-shaped beast, spiral in form; hence the appellation we dub him with, "a regular corker." It is said also that the spleen is covered with a fresh fibrinous exudation—that the corpuscles present a mottled appearance; that its pulp is more or less softened, swollen, and malpighian bodies are perceptibly enlarged; and the liver and kidneys are swollen, enlarged, congested.

The characteristic symptoms: There are no premonitions. This fever comes on suddenly, and the fever will rise to 102 degrees to 104 degrees, and continue high for several days, with rather a weak pulse, headache, sick or nausea, vomiting, and lancinating pains in the limbs and muscles, especially the calves of the legs, followed by fullness, pressure and more or less pain in right hypochondrium. This may be due to swelling of the liver and spleen. Jaundice is a frequent accompaniment and of frequent occurrence. The seventh day the crisis comes—the fever ends; and about the fourteenth day the symptoms return, but generally in a milder form, and continues about four or five days, when slow convalescence begins. Emaciation considerable, and relapses may be repeated several times.

The medicine doctors give quinine, although they acknowledge that it has no power to prevent the relapses. Their treatment is largely expectant! The use of morphine takes precedence here (for pain), and the carbolic acid, cerii oxalas, ferrum, and quinia. They acknowledge that they do no good in this disease, yet the patient must take his medicine! Having had much experience with this fever, we readily understand why medicine does no good. I did not understand why the medicines failed to cure it when I formerly treated so many cases in the southern, hot climate; but do now, and this is the very reason that I am writing out a



PLATE XIX.—Vibratory Movement of Knee and Hip Joint.



rational system of treatment that will cure, or be the means, if practiced, of taking off the pressure and letting nature right herself. Remember our text: Take off the obstruction that produces the lesion, and disease no longer exists. Pathology means pain. Pressure produces pain; therefore take it off, if you would cure your pathological conditions at all times and everywhere.

#### THE TREATMENT.

It will be remembered that fever is only a symptom, and not a disease, and the question arises, always, What is to treat? The cause or the symptoms? If the bug is the cause of this fever, as asserted by pathologists (or at least supposed to be the cause), why make so much delay in arresting his ravages? Then why give quinine? Why give carbolic acid, or why give anything? We protest against the whole bug theory of disease, and regard no such harmless creature as productive of results attributed to him, hypothetically, or really, or probably. The *materies morbi* causing infectious disease results from the capillary or venous obstruction or obstructions somewhere in the body. All pain has its origin in blood stasis, causing pressure on terminal nerve filaments, severing the connecting terminals. Tissue degenerative metamorphoses result; *materies morbi* manifests itself; a nidus is formed; catalysis contaminates; decomposition ensues; infections come in as a result of chemical changes; the blood becomes contaminated, and whatever the elementary constituents of the secretions be in the particular part where the stasis occurs, in its transition from one chemical to another, the results are accordingly.

This organism of ours is the most complicated chemical laboratory that divine thought ever created, and even receives impressions from the thought of the individual which at once produce chemical changes that restore the possessor to life and health, or send their wailing and depressing influences through every tissue in the body, changing them to morbidity, which results in death itself. The delicacy of this



human structure is inconceivably delicate and impressionable. A change of the whole career of man is often the result of a whisper, because the thought therein turns the whole tide of life. Then how important it is to know how to start the proper forces in the system to control the movements of the fluids that contain the life of man! Osteopathy understood is a leverage that moves the world, and its benign influence will spread from sea to sea, and the far-off isles will clap their hands for very joy when its marvelous possibilities are fully comprehended. The medical profession, with its combined wisdom, should possess such a leverage as this to combat with the arch enemy, disease. The simple truth along any line of thought seems to be the last, the slowest and most difficult to comprehend and accept of all things. Every conceivable excuse that the heart of man can devise seems to be called forth as a justification of their opposition and rejection! We need not repeat this proposition, for it has floated on the very surface of history adown the ages, and is constantly verified; and I opine the Psalmist uttered truth when he said, "All men are liars"—the legitimate fruit of the seed sown. The truth, however, is mighty, and will eventually prevail.

The Osteopathic treatment for relapsing fever, then, is the same as for typhoid fever.

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#### CEREBRO-SPINAL MENINGITIS.

This is regarded as a malignant, epidemic affection, characterized by suddenness of attack, severe headache, vomiting, severe and painful contraction of the muscles of the back of the neck and spine, delirium, disorders of the special senses, coma, stupor, and a spotted purpuric eruption under the skin, showing symptoms of decided congestion. These lesions are found along the meninges of the spinal cord in post-mortems.

The cause seems to be unknown. The micro-organism

seems to exercise considerable influence in its production, so said by some authors. The bacillus theorists have not discovered the means of entrance of the "critter" as yet, and they are in doubt whether he is going to produce spotted fever, erysipelas or pneumonia in his peregrinations through the system. To make such ado about a bug seems altogether out of proportion to the facts in the case. It is also strange that this "bug" should have a peculiar predilection for the young. The attacks come on suddenly, even while the little one is in the height of glee, and on the street, suddenly prostrated, without any premonitions whatever. Strange bug that!

The causes of this pathological condition seem to be wholly wrapped in mystery. The unfruitful search for outside causes and influences leaves the profession halting and guessing what might be, and failing to find what is the cause. To give remedies under such circumstances seems the height of folly. To "beat the air" seems to hold out the idea that enemies infest the very air we breathe, and call forth our whole man in physical array to fight effects—and the profession claim to be the arbiters of the health of the people! While there are many circumstances in the environments that tend to contribute to the production of diseases, yet these should not center in some peculiar "bug," and then assume that it has produced the changes in the system that manifest the various symptoms found in pathological conditions, and then theoretically assume that the treatment of symptoms is the proper guide to govern practice. Where is the trouble in this affection? This is the thing to settle. Remove that, and health comes back and resumes its throne. Take Off the Pressure. This is the universal remedy!

Capillary congestion is the sole cause of this affection. Arrest of circulation of the blood and other fluids of the body—decomposition—change of chemical elementary constituents—the materies morbi resulting from these decomposing elements, caused by the inhalation of the poisoned atmos-

phere, from telluric and atmospheric changes. The lesion is in the meninges of the brain and the spinal cord. Remove the obstruction and the effects cease at once! Do not wait on the uncertainties of presumptive medication.

The drug that the profession relies the most on, opium, arrests all tissue change, and only tends to increase the speed of the patient to the realms of "kingdom come." This blunts all sensibilities, and the doctor rejoices in the idea that this is the salutary remedy. To the Osteopath this seems the height of stupidity and ignorance of the proper method of relieving the afflicted of the cause of the trouble—congestion.

It is said that there are three groups—the common, the fulminant and the abortive. The common begins with a chill, severe headache, nausea, vomiting, vertigo, and a sense of extreme weakness, and within a short time the muscles of the back become rigid, painful on moving the head or neck, retraction to the extent of oposthonos ensues, extreme restlessness, hyperesthesia, cramps in the muscles (especially of the legs); spasmodic twitchings occur, and frequently spasms and delirium. Added to these symptoms there are intolerance of light, blindness (sometimes sudden), more or less deafness, loss of smell and taste. The temperature and pulse are irregular. Much else might be said of this form of the disease. There is another form that is called the fulminant form, ushered in by a severe chill, great depression, followed soon by a collapse, into which the patient sinks and never reacts therefrom. The abortive form is not so severe, and may not be pronounced only in some respects during the course of an epidemic; that is, different in type only and point of severity. The prescribed remedies of the Regular School of medicine are opium, quinine, ergota and iodide of potassium, tar plasters and cold compresses.

#### THE TREATMENT.

The Osteopathic treatment is similar to that of typhus fever, with special attention to the vaso-motor area and all

along down the spine—taking off the pressure all along the line, and everywhere. Reflexes are prominent characteristics in this disease, and special regard to the sphincter muscles must be had. The pressure must be taken off the sympathetic nerve filaments; arouse the secretions, unite the forces at once, or disintegration soon sets in, and the lesions become sources of materies morbi of a malignant type. Use plenty of water, internally and externally. No food to depress the already exhausted digestive organs. Let the patient have rest of body and mind, and only treat enough to take off the pressure, then let patient rest. A crowding of the stomach, or the administration of opium, is surely uncalled for. To relieve the excessive pains, take off the pressure, start the forces to moving out the debris. Do not wait until special symptoms develop. Remove the cause (the obstructed circulation of the fluids of the body), and you cure your disease, or it gets well itself.

Fortunately for the people, this disease is not a frequent visitor; but when it does appear, it leaves a trace behind—not only carries off many, but leaves the balance in a condition that death would better have occurred to its victims—crippled, blind, deaf, or demented! Horrible state to contemplate! When Osteopathy is properly applied, such results will cease. The cure should be as readily effected as that for diphtheria or scarlet fever, typhus or typhoid fevers, and this is true of many other affections thought to be incurable.

The re-establishment of nerve force takes place when the pressure is removed. The almost universal pressure will be found in the jugulars and cervical muscles.

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### LA GRIPPE—INFLUENZA.

Synonym: Epidemic catarrhal fever.

This is an acute, infectious, sporadic, epidemic fever, usually accompanied with more or less inflammation of the lungs, and always affects the nervous system intensely, pro-



ducing extreme prostration, out of all proportion to the seeming severity of the fever.

The causes are said to be various. A specific bacillus is thought to be the cause by some. Others suppose it is induced by soil, climate, atmospheric changes. We are not going to stop here to argue the bug theory of disease.

The symptoms of the affection are as varied as the causes assigned by pathologists, as regards variations and intensity, from the slightest illness to the most grave, often ending fatally. The onset is usually sudden, beginning with a chill, lasting a longer or a shorter time, then fever sets in, reaching as high as 103 degrees, with a rapid, soft pulse, shooting pains in the muscles, over the eyes, frontal sinuses, chilliness down the spine, hoarseness, with more or less pain, deafness, running at the nose (thin watery secretion at first), eyes watery, a dry, irritative cough, affecting the bronchial mucous membrane; the tongue has a brownish, nasty fur on it; loss of appetite, pains in the bowels, especially in the epigastric region; nausea, vomiting, and often a diarrhea. There is more or less melancholia, extreme debility, tenderness of the skin; dullness of intellect is common.

The duration ordinarily is about four days to seven days. Relapses frequently occur. One attack seems to render the subject extremely susceptible to other attacks, and it is a good deal as the Irishman said of his case, when he had La Grippe: "He was sick six weeks after he got well."

The complications are usually those of a bronchial or pneumonic character, leaving the patient with a severe, hoarse, harsh cough. Headache is a common sequela; neuralgia, enlargement of the glandular system, especially the lymphatic glands. Many cases of consumption date their origin to an attack of La Grippe. The prognosis depends to a great degree upon the strength of the person attacked, and the kind of treatment. The extreme prostration of the patient is the prominent characteristic symptom. Its sudden onset is likewise a source of differentiation from a bad cold.

## THE TREATMENT.

All of the symptoms of this disease point to a cerebro-spinal nervous affection. The excessive disturbance of the whole intestinal tract and the severe muscular pain indicate a disturbance of the sensory and the sympathetic nerves. The equilibrium of these forces (or conductors of forces) is disturbed. Atmospheric influences, cold, have produced capillary congestion in the posterior terminal filaments; hyperesthesia ensues; capillary congestion results from stenosis of the capillaries; decomposition of the blood ensues, and the absorbed poisonous *materies morbi*, mistaken for the bacillus, produces extreme prostration, vomiting, diarrhea, etc. Now what is the indication?

In this affection the spine must receive our special attention, pressing steadily for two to five minutes on the upper cervical and then the brachial, dorsal, lumbar and sacral regions once or twice a day. The neck should be thoroughly treated, and a general and thorough manipulation should be given, but more especially the spine and chest should receive attention. The chest and heart treatment, raising the clavicles, stretching the cervical vertebrae, and the whole spine, takes off the pressure, and the treatment of the spine strikes at the root of the whole difficulty. If properly treated, the pain is at once relieved, and no bad consequences follow. To free circulation is the prime object in this affection. Watch complications and meet them promptly by appropriate treatment. Let the patient use plenty of water, bathing, drinking it, and ablute the spine once or twice a day at least. Keep special watch of the glandular system, the heart and lungs, free the circulation; treat the twelfth dorsal to energize the kidneys. Elimination must be looked to especially in this, and all poisonous infections—an exchange of excesses for normal commodities should be surely made.

The proper stimulation of the spine relieves the prostrating symptoms as well as the congestion. Restoration should be rapid, if no food is allowed until the secretions are

restored to a healthy condition. The thing the Osteopath will have to contend with will be the prejudice of the masses. The old way is so thoroughly fixed in the mind that no other way seems to them the right thing to do. The idea of curing such an affection with manipulations seems to be the height of ridiculousness and absurdity. It is our experience that these manipulations act like magic in this affection, frequently aborting the whole process at once, and if not, so modifying it that the patient is free from pain, weakness and lung or bowel complications, which in other treatment is not satisfactory. If a fever is allowed to run its course, what is the use of medication? The fever should be cured by removing the congestion, which is done by the manipulations indicated. The treatment should not be automatic, nor should the practitioner of this science become an automaton if he wishes to succeed.

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### CONTINUED FEVERS.

All fevers that continue with a steady progress, increasing gradually or persistently, without either a too decided rise or fall, are called continued fevers. Simple continued fever may be of short duration, and may be mild in character, and present no marked malignancy or perceptible lesions, and yet be fatal. So continued fevers should receive special attention during their prodromal or forming stage, for lesions may lurk somewhere in the system without pain.

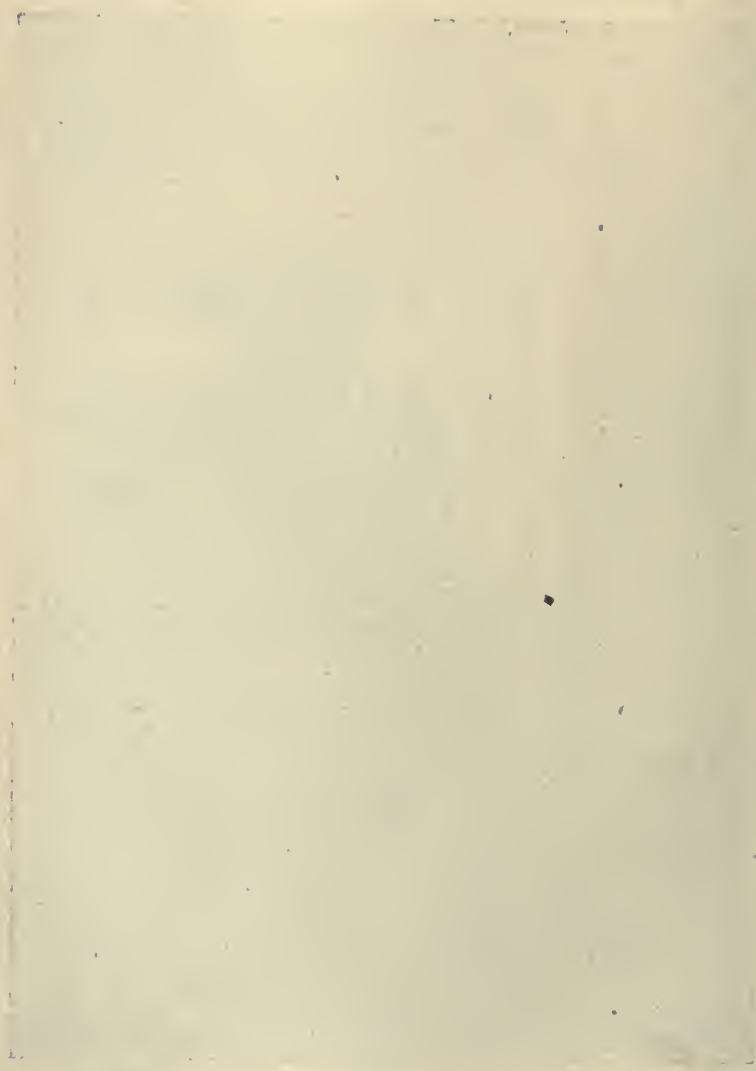
The causes of fever: It is said by pathologists that fevers are caused by fatigue, exposure, atmospheric or sudden changes of temperature, excesses in eating, excitement, violent exercise, miasmatic influences, etc.

The symptoms: In the continued fever, the onset is usually abrupt, with a feeling of lassitude; then a chilliness or a decided chill; then a rise of the temperature of the body, pulse rapid and tense, headache, skin dry and hot, thirst, coated tongue, costiveness, scanty, high-colored urine, some-



PLATE XX.—Showing Adduction of Thigh.





times nausea, vomiting, and in children there may be convulsions.

The duration varies from a few hours to several days. The temperature within a short time will reach as high as 103 degrees, or even higher. This may continue for a day or two, and then there appears a condition called "a crisis." This is an abrupt termination, usually with some critical discharge, and it may continue without any special change, only a gradual falling, and terminate in a normal condition. There appears usually, as the fever subsides, herpes on the lips and around the nostrils. This is recognized as a termination of the fever.

#### THE TREATMENT.

An important thing is rest in bed. Relieve the contents of the colon of any accumulated feces by non-irritating clysters, such as warm water, followed by the constipation treatment, if necessary. Bathe the body all over (in a bath is the preferable way) every three hours to every twenty-four hours, as directed for general treatment of fevers. Frequent sponging of the body is admissible at any time. Warm water is preferable usually. If there are pains in the abdominal viscera, use cloths or towels wrung out of warm or as hot water as the patient can bear, applied to the abdomen, covering the whole of the bowels; then cover all with a dry towel, and repeat this process as often as the cloth becomes a little cool or too dry, until all pain and fever subside. Give no food of any kind. Let the patient have water at short intervals, say every half hour, either hot or cold. Stimulate the vasomotor region gently from five to ten minutes, as often as desirable to regulate the action of the circulation, stimulating down the spine gently on either side of the spinous process every four to six hours, and see to it that all obstructions to the circulation of the blood in the neck are looked after.

## TYPHOID FEVER.

This affection goes by several names, and on account of its affecting the whole system, it is hard to miscall it. The common appellations it goes by are: Enteric fever, gastric, nervous, mesenteric, autumnal, typhus. It is said to be acute, self-limited, due to specific poison, and comes on gradually, usually with nose-bleed, dull headache, stupor, mild to raving delirium, red tongue, gradually turning brown, cracked sordes on the teeth and gums, abdominal tenderness, diarrhea being also an early symptom, tympanitis, soreness and gurgling in right iliac region, rapid prostration; patient inclines to want to lie on the back, with knees drawn up. The lesions are always present in this fever, and they are found in Peyer's patches and the solitary glands. The various stages of this inflammatory process are: First, the infiltration, hardening, ulcerative, cicatrization. The spleen enlarges, and every gland and tissue in the body become involved and share in the effects of the lesions. The symptoms of the different stages need not be enumerated, for the variations only consist of increased and intense persistence of what have been enumerated, on up to the end of the fourth week, in severe cases; varying in mild cases, and simulating a mild attack of intermittent fever. The temperature varies from 101 degrees to 104 degrees during the twenty-four hours, assuming a regularity peculiar to that fever, and simulating remittent fever. The prostration increases as the fever varies, the perspiration is profuse, stupor persistent, especially during the fever; the tongue is intensely dry, hard and cracked, frequently bleeding; the brown sordes is thick, tenacious; pulse rapid, feeble; respirations shallow, quick; the secretions scanty and retained, and contain albumen; the stools are voided involuntarily; bedsores develop, and at this stage the patient usually succumbs—dies.

The medical profession has paid particular attention to this fever, and the almost universal verdict is: "You can't do anything to mitigate it; only good nursing." It seems that

their whole interest is centered in watching its ravages, and portraying its symptomatology, rather than to remove the cause that keeps up the lesion. To assume that this affection is caused by a bacillus, and sit by and watch that bug perform its destructive ravages without endeavoring to arrest him, try him, condemn him and execute him, is to be favoring a neutrality that is unwarrantable. It certainly does seem that something ought to be done to arrest the ravages of this disease, whether caused by a bug or resulting from the poisonous effects of the decomposed products of animal and vegetable matter combined.

This is another of the nervous prostration effects, and our attention should be directed to a restoration of the nerve power by removing the accumulated debris that feeds this virus—that enervates nerve power. All lesions anywhere in the body are the result of pressure somewhere, either at the origin, along the line, or at the end of nerves where they exercise their influence on the capillaries, preventing that influence in full or partially. Congestion at once results. The pent-up blood not passing on into the veins, or the waste material prevented from entering the lymphatics, on account of inability or deficient nerve force (and especially the motor filaments), results in lesion, and decomposition begins. The consequent effects of this poisonous product being resorbed into the tissues, thence carried to and entering into the blood, manifest themselves in every tissue. During the prodromic stage is the time to arrest the whole trouble. Take Off the Pressure before the mischief ensues. This can not always be done, nor is an opportunity always afforded, because the patient does not always know what is producing the indisposition that culminates later in the typhoid state, so that the physician is not called in until the ravages have become prominent and the lesion is doing its destructive work.

At this place we take the liberty of presenting the workings of the two forces that constantly play a part in the wel-



fare of the human body. These understood, will aid us greatly in our treatment of all diseases of an inflammatory or destructive character, resulting from lesions. The Positive and the Negative forces are manifest through certain nerves, and these properly stimulated produce effects in the parts of the body where terminal fibers are distributed. We demonstrate our position and verify results almost positively in the Osteopathic treatment for pains in the stomach. It is certainly proven that the Positive Pole of a galvanic battery, exercised through a needle introduced into the flesh, produces contraction of tissue, and that the Negative Pole of the same battery breaks down or destroys tissue. These facts lead us to the conclusion that the same sort of influence is exerted in the human body, and our experiments and application of the science of Osteopathy have abundantly demonstrated these facts. That the Spinal Nervous System exercises Negative influences, and the Pneumogastric Nerves produce the Positive influences, results fully corroborate. These facts constantly held in mind, our treatments result as we deem best, provided intelligence is the chief factor exercised—(and not automatism).

The pains anywhere in the body are due to "pressure." Whether this pressure be due to irritation of the nerves that supply muscular fiber, causing contraction upon nerves, or to partial paralysis of end nerve fiber by the accumulation of blood or waste material pressing on surrounding parts, the results are the same—decomposition ensues. If simply enough irritation is made to produce contraction on sensory end filaments, pain is the result. This force is conducted usually through sensory nerves, directed to the parts, because of the separation of the motor filaments from the sympathetic end filaments. Coordination of the nervous system must be had everywhere to produce harmony. If pressure is taken off, this state of affairs exists, and health results. If the accumulated precipitant, due to stagnation, and arresting peristalsis, remains in the tissue in the immediate vicinity of

the capillaries and paralyzed nerve filaments, is not removed, decomposition ensues, friction takes place, fever is the result. The fever (heat) evaporates the watery portions of the blood, the carbonic oxide increases, and deoxygenation of the blood becomes responsible for the results. To be healthy, the blood must be regularly oxygenated; to receive oxygen, it must circulate to the lungs and skin. We recognize the locality of the lesion generally by the pain in typhoid fever, it being a prominent symptom, especially in the right iliac fossa. This condition is an early indication of its presence. The whole intestinal tract becomes involved, from the foul tongue to the fecal discharges from the bowels. The upper portion of the alimentary tract seems to be directly under the Positive influence down as far as the stomach, and the balance of the course is under the Negative influence. The one produces contraction of the muscular system, therefore a sense of tightness, contracture, impediment in the circulation of the blood, stupor as a result, headache, feebleness and soreness of muscles, a drawn expression, secretions lessened, tongue dry and cracked; and in the lower half of the body the reverse—especially in the lumen of the intestines; a relaxed state, secondarily at least; discharges from bowels, a breaking-down of the mucous membrane of the ilium, and in fatal cases, perforation. It seems to present a condition of disconnection of the two poles, and as both of these forces are controlled by the organic nerves, it becomes apparent that there is a failure of connection of the end filaments of these, one set being separated from the others, and disparagement is the consequence. Therefore, to right the trouble, a proper union must take place. Our means of bringing about this desirable consummation, that harmony shall once more reign, and order come out of confusion, are at hand. The connection is established through the spinal nerves—the splanchnics very largely. But to reach a condition that these nerves may exercise their wonted influence, the pressure must be removed—the debris must be removed.

—then connection can be established. The supply of water should be furnished, ingesta should cease until the accumulated rubbish is removed, and the receptacles prepared for taking care of it; and this is done satisfactorily with the supply of water furnished to the system in the right manner, remembering that about 70 per cent. of the whole body is water, and that that commodity has been evaporated by the heat (the fever), and the elementary substances held in solution by the water have precipitated, become incompatible, non-assimilable, and must be resolved and the waste tissue washed out, so that connection to end nerve filaments can be re-established; then the forces are normal, action begins—normal action—which is nature's own method of surmounting the difficulties resulting from congestion.

#### THE TREATMENT.

The manipulations should begin at the vaso-motor center, or at least as near to it as possible (and that is at the back and upper portion of the neck), holding the fingers firmly there from two to five minutes, and then stretching the neck by placing one of the hands on back of neck and the other under the chin; make gentle traction, then a rotary movement each way from a normal position; then move all of the muscles of the neck carefully, deeply and effectually, lifting them from their moorings; then raise the clavicles, stretching all of the chest and intercostal muscles, using vibratory movements over the abdomen, stomach, liver, spleen and pancreas. Turn patient on the side, raise the arm, pressing fingers of other hand against the sides of spinous processes, and while extending the arm, use pressure upwards and outward along the spine, on down as far as the twelfth on either side. Manipulate lumbar region, using vibrations freely. This should be done daily, or perhaps twice each day, provided care be taken to treat mildly. The tympanitis should be relieved by warm water injections into the bowels, and by hot applications in the form of towels or cloths wrung

out in hot water and placed on abdomen. Water should be administered to the patient (to drink) in small quantities, every half to one hour. Frequent sponge bathing should be used. The whole body should be bathed in water of a temperature of 80 degrees from ten to fifteen minutes, every three to twenty-four hours, and the head wrapped in a wet towel while bathing; the patient should then be wrapped in a dry sheet or thin blanket, placed in bed, and allowed to rest and sleep. These measures should be repeated daily as long as there is any fever. Give *no* food nor fruits of any kind until the tongue *cleans off* and becomes normal, and the patient calls for food. Then is time enough. Do not be uneasy about starving your patient. This is the proper course. If there is too much action of the bowels, press the knuckles against the left side of the twelfth dorsal vertebra for five minutes, steadily, firmly, bending shoulders backward, or stretching the leg backward, with thumb on left side of the vertebra named. This course of treatment will be eminently satisfactory in its results, and the mortality need not be anything, if treatment is begun in any reasonable time.

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### YELLOW FEVER.

Synonyms: Yellow Jack, bilious malignant fever, black vomit.

This is an acute, infectious disease, paroxysmal, and usually divided into three stages: The Febrile, the Remission and the Relapse (or the collapse), characterized by violent fever and yellowness of the skin of the whole surface, and "black coffee-ground vomit." It seems to be a specific poison, raging in the Southern States, at high temperatures. It is not due to malarial poison, usually prevalent during the summer months. In some places in the South it is never absent, and in other localities it comes periodically. Neither age, sex, race, nor social conditions show any preference to the disease. The peculiarities of the disease may not



be uninteresting to know, therefore we here present some of the pathological symptoms: The skin assumes a yellowish, lemon-colored appearance; the blood seems to be dissolved to a greater or less degree; heart seems to be softened, the stomach veins deeply engorged; mucous membrane seems to peel off, and the excreta present the appearance of coffee grounds, consisting really of blood and mucus, epithelial cells and debris. The intestines take on a similar condition. The liver is yellow, and fatty degeneration of the cells is a frequent accompaniment. The kidneys assume a granular degeneration, but there do not seem to be any morbid or pathological changes in the spleen. The pulse runs high, and the temperature rises from 104 to 106 degrees in a few hours. Severe neuralgic pains in the head, limbs, stomach, back and joints; the patient is extremely restless, delirious; urine scanty, acid, high colored, and contains albumen, and has a peculiar odor (as well as the whole body), never to be mistaken after once inhaling it.

The Regular School of medicine regards the disease as "self-limited," and the only way to arrest its progress is in one or all of the three following ways: "Isolation, disinfection and depopulation." The Homeopaths have not said so much, but regard it as a curable affection. The question is, What has the Osteopath got to say about the treatment for this disease? To retire from the conflict and acknowledge defeat before a fight is the characteristic of cowardice. To even pretend to acknowledge that "there is no cure in Osteopathy for it," is a concession unworthy a great science. What is the matter that Osteopathy is not applicable to it, as well as to any other known condition due to capillary congestion? Think of a physician in the conflict with an enemy of mankind, and pleading inability to help because he has no knowledge of what to use, or how to use it if he had it, then to say: "No remedy in Osteopathy for it." What is Osteopathy for? What is disease? What produces disease? What is the matter in yellow fever that Osteopathy, properly



PLATE XXI.—Conclusion of Movement Shown on Plate XX.



and intelligently applied, will not relieve it? We say it will cure it, therefore we earnestly recommend it. The depopulation measure seems to be the most probable measure contemplated, judging from the Regular way of treating it. They utterly fail to adapt means to ends, or this writer is most egregiously ignorant of natural cause and effect—purgation, vomiting, diaphoretics and diuretics!

#### THE TREATMENT.

In the treatment of yellow fever it will be noticed that there is a diffusion of bile through the whole system, producing extreme yellowness of the skin. This state exists everywhere in every tissue in the body where blood can flow. The shortness of breath indicates chest contracture and diaphragmatic irritation—capillary congestion everywhere in the body—a congestion of the portal system and liver, as well as the breathing apparatus. The first thing to be done in the case is to relieve the capillary congestion. Begin with the vaso-motor nervous system, holding fingers on either side of spinous processes from three to five minutes, then gently stretch the neck, and manipulate all of the muscles of the neck; raise the arms, treating along down the back on both sides of the spines, clear down to the sacro-lumbar junction; springing the back by pulling the limbs backward, one at a time, patient lying on the side, manipulate the lower limbs; and then, with patient lying on the back, raise clavicles, stretch the arms up strongly, and at the same time press the fingers along the sides of the spines from first dorsum to the tenth (general treatment process). Now, with patient lying on the back, manipulate in a gentle manner the liver, stomach and all of the abdomen in a vibratory manner for a few moments. The treatment should occupy at least twenty minutes, and should be done gently, yet thoroughly, twice each day. The patient should receive frequent ablutions and baths, together with plenty of water to drink at short intervals, and supplied with the ferric phosphate and sodium phosphate, these two elements being deficient in cases with this



affection. The one supplies homoglobin and the other regulates the eliminative process. As in all fevers, do not feed your patient until the organs of digestion are ready to digest and assimilate and the tongue cleans off. Treat the spine in the splanchnic region at least twice daily; in fact, from the third to the tenth surely. The spine will be necessary to look after at frequent intervals, for the sickness of stomach, vomiting and diarrhea will require special treatment occasionally. With these general suggestions to the intelligent Osteopath there ought to be no difficulty in relieving any case of yellow fever. The vaso-motor area should be mildly treated when indicated from a too rapid or a too slow or any irregularity of the heart's action, and the vibratory movements along the dorsum and region of the liver. If you do not feed your patient, with the above directions followed, you will restore him to health by the treatment suggested. We have been thus particular and specific on account of there going forth from an Osteopathic writer the annunciation, "There is no cure for it in Osteopathy." Rest assured there is. Osteopathy is applicable to all pathological conditions, and that, too, with more certainty of relief than any other treatment—properly and intelligently applied. The more you know of it, the more confidence you will have.

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### INTERMITTENT FEVER.

This is regarded as ague, chills and fever, swamp fever, or malarial fever.

It is characterized by a cold, a hot, and a sweating stage, the phenomena observing a successive regularity, according to the type, and having a complete intermission, varying in the length of time from a daily paroxysm to several varieties of characteristics. The tertian, or every day; the quartan, occurring the first and fourth days; the octan, or that occurring every week or eighth day; the duplicated quotidian, two paroxysms every second day; the double tertian, daily par-

oxysm, but more severe every second day; the dumb or masked ague, an irregularity, and presenting peculiar phenomena. All ages and sexes are liable to this affection.

The causes are attributed to a peculiar bacillus malaria from the low-lying atmosphere in swamp and marshy districts. There are numerous varieties of these bacilli! The period of incubation of this disease varies from a few days to several weeks. This is another fruitless search for a bug! It is strange that this malarial bug—the ague producer—vanishes into thin air at the presence of an Osteopath! A slight move of the spine in a certain direction, in a particular manner, scatters this beast, and he leaves his lurking place as completely as if he were a soldier under marching orders. All is quiet and serene as a May morning at the presence of the manipulator. Singular, isn't it?

Symptoms: Each paroxysm has three stages—the cold, hot and sweating. The cold stage begins with prodromes, lassitude, yawning, headache, nausea, followed by the chill; the teeth chatter, skin turns pale, nails and lips blue, and the surface rough; the appearance of goose flesh is a prominent peculiarity, and great thirst (in some cases), with a rise of temperature to 104 degrees. The chill may last from a few moments to one or more hours, and the hot stage is gradually ushered in as the shivering ceases, which is usually accompanied with a continued rise in temperature, reaching as high as 106 degrees in some cases, and with children to 107 degrees, and accompanied with spasms. The pulse now becomes full, headache and nausea increase, intense thirst, dry, flushed skin, scanty urine, sleepy, indifferent drowsiness settles down over the whole person, and this stage continues from one to three or four hours, when the sweating stage is ushered in gradually, beginning at the forehead and spreading over the entire body. The fever lessens, coming down to a normal temperature, and a general feeling of comfort returns until the next paroxysm. This paroxysm may come on the next day, but the tertian type is the most common; and there

may be an intermission of one day, when the patient will feel comfortable and revel in the hope that he will not have a return; but all at once he begins to yawn and stretch, cold, chilly sensations creep up his spine, the feet and hands and nose get cold, the lips turn blue, ears and face pale, eyes become somewhat glassy looking, and he soon settles down to a season of "shaking," characteristic of this kind of fever.

It is useless to state that the almost universal remedy for this affection is quinine. The resort to quinine is the almost universal custom; and yet it often fails to do what is desired. It seems to be the most successful in those forms characterized by the three distinct stages. Given in two- to four-grain doses, every two hours, until as much as twenty grains are taken, beginning long enough before the next expected chill to have taken the last dose of the quinine one or two hours before the expected chill. The quinine is to be repeated the fourth, seventh, fourteenth, twenty-first and twenty-eighth days, from two to four doses each day, as mentioned. Months are sometimes passed before the victim has immunity from this affection under the use of the very best selected remedy, or remedies.

The Osteopath neither gives the quinine nor protracts his case. The cure is effected at once, generally in one treatment. This silences all objection to this science with the suffering victim of chills (and the long dosing with quinine).

Sometimes this fever assumes a pernicious type; when the whole system becomes purple, the lungs become congested; in fact, the whole body becomes so, accompanied with severe pains in the lumbar region and abdomen, with delirium, severe headache, stupor, drowsiness, and sinking prostration coming on rapidly, when it is known as a "sinking chill." These are extremely dangerous types of the malarial fevers, and are regarded with fear. The intermittent fever is the bane of some districts, and about the only sickness. It seems to come on after all of the summer's work is over, and the farmer has begun his period of rest from his sum-

mer's labors. About two weeks elapse, and the chills set in, and frequently the whole fall months are passed with chills, then merge into some other type, such as typhoid or pneumonia, due to general exhaustion from long sickness.

#### THE TREATMENT.

This should embrace the whole person, beginning at the cervical region, moving the muscles thereof thoroughly, strongly, deeply; stretching the neck with rotation, and raising clavicles; raising arms; manipulating spine all the way down, pressing hard and for some time, from the fourth dorsal to the ninth, raising arms and pushing back the chest therewith strongly, requiring deep, full inspirations at the same time; treating the liver, spleen and abdomen thoroughly by vibrations and manipulations, stirring them up thoroughly; then, lastly, holding the fingers on the vaso-motor region from two to five minutes; then pulling the arms backward, with the knee against the back, two to four times, ending with the pressure at the eighth dorsal. This treatment, begun half an hour before a paroxysm, usually arrests it at once. Two or three treatments cure the worst cases.

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#### REMITTENT FEVER.

Synonyms: Bilious fever, bilious remittent, marsh fever, typho-malaria.

This is a paroxysmal fever, with exacerbations and remissions, in which the temperature is constantly above normal. It has a moderately cold and an intensely hot stage, but the cold stage does not recur at each recurrence of the hot stage. There is usually an intense hot stage, with violent headache, gastric trouble, irritability, often vomiting. There is scarcely observed any sweating stage.

The cause is attributed to the presence of micro-vegetable organism, the generic species of which seems to be a little in doubt.



The symptoms: During the cold stage there is a moderate chill, the temperature rising one or two degrees, the tongue slightly coated, headache, pains through the body, and sick, oppressed feeling in the epigastrium. During the hot stage there is persistent vomiting; thickly furred tongue, pulse full, rapid, flushed face, injected eyes, severe headache, pains in limbs, loins, hurried respirations, temperature rising to 104 degrees, or even to 106 degrees; the bowels costive, stools tarry and very offensive, the urine scanty and highly colored, with uric acid present; the skin becomes yellow, and delirium is a common accompaniment. The sweating stage comes on in from six to twenty-four hours, when all of the above symptoms somewhat abate, or greatly modify, and slight sweating occurs, and the temperature may go down to 100 degrees, or as low as 99 degrees. This state may last a longer or a shorter period, called the stage of remission. After from two to eight hours the symptoms recur, generally minus the chill. This in turn is followed by a remission. These paroxysms go on for a period of from seven to fourteen days, but sometimes the fever ceases to remit; then it becomes continuous, simulating typhoid fever; then it is called typho-malarial fever.

It is said that this fever can be positively diagnosed by an examination of the blood, finding therein the bacillus malaria, and that as soon as this is gotten rid of, or eliminated, the fever subsides. As is the usual custom, quinine is the sheet-anchor in this fever. If some process could be discovered to open the gate and drive the bug out, what a saving of suffering to the patient!

#### THE TREATMENT.

This should consist of stimulating the vaso-motor area, the manipulations of neck muscles, freeing the chest muscles, and a thorough spinal treatment, and especially the splanchnic region. The bath and sponging the whole body at frequent and indicated periods may be done, and clysters of warm water and hot applications over abdomen and around loins

will be found soothing to the patient. Drinking water at frequent intervals should be particularly observed, remembering that in all fevers the per cent. of water in the blood is lessened by evaporation, and it must be supplied to hold in solution the poisons. Then the freedom of the circulation of the fluids restores the equilibrium.

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### PERNICIOUS FEVER.

Synonym: Malignant intermittent fever.

This is a malignant, destructive malarial fever, which may be intermittent or remittent in form, characterized by intense congestion of one or more internal organs, together with interference of the functions of innervation.

There are several varieties of this fever: The Gastroenteric, producing intense nausea, vomiting, purging, tenesmus, burning in stomach, intense thirst, cold feet, cold extremities, shrunken features, and a general and intense depression of all of the vital forces. This condition may last from a half an hour to several hours, when an intermission or a remission occurs. There is also a Thoracic variety, characterized by intense congestion of the lungs, with violent dyspnoea, gasping for breath, fifty or sixty respirations per minute, oppressed cough, frequent, weak pulse, cold surface, and distressed-looking features. Then there is a Cerebral variety, characterized by intense congestion of the brain, effusion sometimes of serum into the ventricles, violent delirium, followed by stupor, coma, slow, full pulse; flushed or livid surface of the whole body. There is also a Hemorrhagic variety, called the yellow disease. It is followed by nausea, vomiting, dyspnoea, severe pains in the region of the liver and kidneys, bloody urine, yellow surface of whole body. There is also what is termed an Algid form, characterized by intense coldness of surface of the whole body, with a temperature internally of 104 degrees to 107 degrees, with a cold and clammy perspiration, cold breath, voice feeble, indistinct;

pulse slow, feeble, almost imperceptible at the wrist; and yet, with all these symptoms the mind remains clear and distinct, while the countenance looks death-like in appearance. This fever may last from a few hours to a few days. It is intensely malignant, and the subject rarely survives a third attack. It is a lamentable fact that all varieties are unfavorable, unless it can be controlled before the second paroxysm. The mortality is about 15 per cent. This fever is the most dreaded of all except the "Yellow Jack," and is equally as fatal.

#### THE TREATMENT.

The treatment usually instituted is of a character that seems more like an attempt to obscure still further the inner workings of the malignancy of the affection. When it is manifest that important organs are paralyzed from congestion, to give opiates that still further arrest tissue change and impede circulation, seems altogether wrong, destructive, and uncalled for. The perniciousness is wholly due to the impediment to the circulation. This is due to overstimulation of nerve centers from poisonous malarial influences. The restoration of the circulation is the all-important thing, and the thing that must be effected before recovery can possibly be expected. When it is understood that the splanchnics are intercepted from performing their functions, thus causing the congestion of the internal vital organs, the indications for treatment will become apparent. The spinal nerves control motion—the lack of motion causes the whole trouble; this can only be brought about through the spinal nerves. Then, beginning at the vaso-motor area, hold the fingers here until a regularity of the pulse ensues. After the vaso-motor area has been duly attended to, manipulate the neck muscles thoroughly, and attend to the elevation of the chest muscles, clavicle, arms, and the opening of the gateways from the brain—the jugulars; then pay special attention to the spine, all the way down, in the usual manner, giving special attention to the kidneys area. The thorough manipulations of the liver, spleen, and abdominal viscera should receive

PLATE XXII.—Showing Abduction of the Thigh.







a good share of vibratory, regularly-applied attention, and a general treatment instituted as often as circumstances indicate and the patient is able to endure, remembering that in this condition, more than in any other form of fever, circulation is important, and without it recovery can not take place. The free use of water enemata should be one part of the programme, and water should be given the patient frequently as a drink. The sickness at the stomach may be overcome by treatment at the fourth to the eighth dorsal vertebra, stretching the right arm upward strongly at the time, lowering fingers each time the arm is raised and lowered, uniting the positive and negative forces. All of the rubbing should be from extremities toward the heart. Hemaspasia of lower limbs should not be lost sight of in this condition, and should not be neglected when a condition presents demanding its application. The sickness at the stomach should be overcome by the stimulation of the splanchnics. The vagi terminals may be reached about the fourth to the eighth dorsal, and more easily and effectually on the left side, as the left are more active and respond easier. The nerve influence obtained here controls Auerbach's Ganglion, a set of fibrillae in both the circular and longitudinal muscular fibers of the stomach, as well as intestines. The splanchnics uniting with the pneumogastric, forming the posterior portion of the solar plexus, control the action, sensation and motion, as well as reflexion of the intestinal viscera, and being reached through sympathetic filaments along the sides of the dorsal vertebrae, the peristalses that arise through irritation of the vagi, anywhere along the line, from the fauces to the ends of their remotest terminals, are controllable by stimulation of the dorsal region named.

To obtain the results at once, take hold of the left arm, stretch it out, pulling it up strongly above the head with one hand, and with the fingers of the other placed along the sides of the spinous processes, pressing moderately hard with ends of fingers, push the arm gently backward, pressing at the

same time with the fingers on the back as aforesaid, and let the arm be pushed downward over the arm of operator suddenly. This may be repeated one or more times, but usually once accomplishes the purpose. This treatment is applicable in all cases of vomiting from irritation of the fauces or along down the alimentary canal. The pressure with finger ends, raising body gently, at the same time without the raising of the hand, will frequently do the work.

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### ERUPTIVE FEVERS.

These all have a period of incubation, characterized by more or less fever preceding their eruptive stage, each with its own peculiarity. The period of childhood is most common for these fevers to occur in. They usually occur but once in the same subject. Their origin seems to be still wrapped in mystery—undetermined.

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### SCARLET FEVER—SCARLATINA.

This is an acute, self-limited, contagious, infectious disease, usually of childhood. High temperature, rapid pulse, diffused scarlet eruption, terminating in desquamation of the skin, mouth and throat, and affecting, more or less, the nervous system. It is an inflammatory condition of the skin—a dermatitis. The cause is supposed to be a specific poison, highly contagious. There are three varieties of the affection: Simplex, Anginosa and Maligna. In the mild cases the fever is trifling.

The onset is decidedly sudden, ushered in with a chill, pain in the throat, and followed by high fever, running up to 105 degrees, with rapid pulse (110 to 140 per minute), and at the end of twenty-four hours a scarlet rash appears on the neck and chest, spreading over the entire body rapidly, and in a few hours the eruption presents a spotted appearance, with normal skin between the scarlet spots. When the erup-

tion occurs there is a burning sensation of heat on the surface, the throat becomes painful, a catarrhal exudation ensues, and a difficulty of deglutition supervenes; the tongue is furred and later dry and red, with prominent papillae, of a "strawberry hue"; headache, great restlessness, and in some cases delirium and spasms; diarrhea is quite common. On the fourth or fifth day the fever declines, and the sixth to the eighth day desquamation begins, continuing for two or three weeks. Convalescence is nearly always slow, emaciation marked, and the sequelæ dreaded, as it affects the whole system, leaving in some cases a sore throat, otorrhea, chronic diarrhea, subacute rheumatism, chorea, endocarditis, pleuritis, acute Bright's disease, and cutaneous dropsy, as well as general anasarca.

The treatment of this affection and the success following Osteopathic treatment has been the most satisfactory of any ever known, and if it would not cure anything else, it deserves to be crowned with a golden wreath, filled with costly jewels of the most precious kind. It has surely demonstrated itself as the most efficacious measure ever tried for this affection.

#### THE TREATMENT.

The manipulations should be made carefully, thoroughly. Begin with the vaso-motor nervous system, holding the fingers there firmly from two to five minutes. This regulates the arterial circulation of the blood. Now begin at the sides of the neck, manipulate all of the muscles gently, deeply, thoroughly, raising the clavicles so as to free the neck veins, that all of the lymphatics may empty themselves into the jugulars; raise the arms successively, treating the spine on either side of the processes, as low as the lumbar vertebrae; then hold the hands on either side of the spines of the lumbar vertebrae, fingers pressing close to spines; raise gently the loins, letting the head and feet barely touch the bed, holding the body thus suspended for a moment. This corrects the bowel trouble at once. The vaso-motor area is to be looked



to and fever subdued by gentle pressure here occasionally. Manipulate all of the muscles of the neck thoroughly, beginning up close under the chin and angle of the jaws, occasionally stretching the neck, but being careful about rotation often, remembering that children should not have too much stretching and rotating of the neck. The outward movement of the spinal muscles should be made, and the rotary vibration movements used on the back from the region of the scapula all along down the back, and on the chest and abdomen. Frequent bathing in warm water, afterward wrapping patient in dry blanket or sheet, and anointing the whole body with olive oil, rubbing the body in a rotary vibratory motion, with the hand moistened with the oil, answers a double purpose. In this, as in all fevers, do not be anxious about feeding your patient. Nature will assert itself when the tongue cleans off and the glandular system has recuperated from the nervous shock; then, and not till then, is it proper to indulge in food of any sort whatever. Use water internally and externally, as suggested in other fevers.

This treatment is applicable in all of the eruptive fevers and throat affections. The philosophy of all Osteopathic treatment is to remove the pressure, and the means to accomplish this depends upon the indications in each individual case, and should not have to be suggested to the intelligent Osteopath in every form of disease, but should suggest itself to him in all cases and under all circumstances, as presented. The object to accomplish in all cases is to take off the pressure. No trouble exists or can possibly ensue where this is done. Remember that stagnation or stasis of blood produces chemical changes that result in pathological conditions that we denominate disease. Disease is the very thing we are called upon to cure. "How is it cured?" should be constantly thought, and the "how to do so" is to take off the pressure, wherever it is, and in the best manner, and as rapidly as the nature of the case will permit. Do not stand by, like the Frenchman, for an introduction, or a suggestion to do the

work. Go at it with a determination to accomplish it, intelligently, and do it. If you do not know what to do, when, or how to do it, step down and out, and send for somebody who does. Don't let your patient die on account of your impudence, stupidity and ignorance. Osteopathy means something. It means relief to the afflicted in the hands of sensible and intelligent manipulators. None others should tamper with disease that demands an intelligent familiarity of the science. This book will enlighten very one who studies it on all the means and measures necessary to successfully combat all manner of diseases, whether acute or chronic. We right conditions, but do not treat disease. Take off the pressure everywhere under all circumstances. That is enough.

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## MEASLES, SMALLPOX,

### VACCINATION, VARICELLA, ERYSIPELAS, DENGUE.

These should receive almost the identical treatment, with the addition in smallpox of the sulphate of soda and the bitartrate of potassium. The excessive action of the Negative element calls for the use of the additional acid, and should be supplied because of a disturbance of the molecules of the sodium sulphates, hence the breaking-down of the skin. Give the patient an acidulous drink all of the time in smallpox, and do a large portion of the treatment along the dorsal region, especially in the region of the splanchnics, to normally combine the Positive and Negative forces, neutralize the excessive alkalinity of the blood that is breaking down the integumentary tissues. The application constantly of castor oil to the surfaces exposed to the air, should be strictly attended to, to prevent pitting, from the suppurative stage on. Acidulous baths are strongly indicated in suppurative diseases of the skin. When it is known that the two poles of the human battery control the acid and alkaline substances of the tissues, and that the one contracts tissue and the other dissolves it.

their uses and the manner of controlling them will become apparent in the restoration of these diseases, as well as all others. We reach these poles, or regulate their action, through the organic nervous system, producing the conditions desired at will.

# ACUTE GENERAL DISEASES.

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## PAROTIDITIS.

**SYNONYMS.** Parotitis; mumps.

**DEFINITION.** An acute specific infectious inflammation of one or both parotid and other salivary glands and the surrounding connective tissue, with a very strong tendency to migrate into the mammæ or testes; characterized by pain, swelling, and disordered function of the glands.

**CAUSES.** A specific poison. Contagious. Occurs in epidemics, although isolated cases are seen. Males more liable than females. The most common ages between five years and puberty. As a rule, it occurs but once in the same individual.

The period of incubation is from two to three weeks.

**PATHOLOGICAL ANATOMY.** There is inflammation of one or both parotid glands, and in severe epidemics the cellular tissue pervading the gland is involved.

The catarrhal inflammation begins in the gland ducts and rapidly extends to the gland proper. There are congestion, swelling, and an infiltration of serous fluid, with more or less infiltration of the adjacent tissues. The swelling may suddenly reach an enormous size and as suddenly decline, the gland returning to its normal condition, or, rarely, an abscess results, with partial or complete destruction of the gland. Occasionally the submaxillary gland is involved, also the mammæ and testes.

Metastatic parotiditis occurs secondary to severe blood-poisoning, as in pyæmia, typhoid or typhus fevers, or diphtheria. The usual termination of secondary parotiditis is by supuration and destruction of gland structure.

**SYMPTOMS.** The onset is rather sudden, by malaise,



chill, fever, 101-103 deg. F., quick pulse, headache, dry skin, scanty urine, followed within a day or two by stiffness at the jaw, swelling of the parotid and other salivary glands, pain increased by moving the jaws, with general œdema of the affected side of the face, at times the skin being reddened. Salivation is frequent, and occasionally deafness occurs.

The swelling and other glandular symptoms subside about the sixth or seventh day, to be followed by restoration to health, or, what is more common, the involvement of the opposite gland.

At any time during the disease metastasis to the mammæ, ovaries, or testes is apt to occur, when the symptoms peculiar to such affections will be added. It has been noted that a continuance of the temperature after the decline of the parotid symptoms has begun, usually is significant of metastasis. It is claimed that the involvement of other organs during the course of mumps is not an example of metastasis, but is a true transfer of the disease.

DIAGNOSIS. An error seems impossible.

PROGNOSIS. Simple mumps, favorable; the chief danger being from the altered function of the mammæ, ovary, or testes after metastasis.

#### THE TREATMENT.

It seems singular that Osteopathy should come into requisition when pathologists inform us that this is a self-limited disease; but, like all other pathological conditions, capillary congestion here results in disease. The removal of the obstructions cures the disease. The proper method of treatment, then, is to manipulate close up under the angle of the jaw, and relieve all contracture in muscles in that region; then stretch the neck, as directed elsewhere, twisting it at the same time, and then manipulate all of the muscles of the neck, raise the clavicles, arms, chest; stimulate the vaso-motor area. The glands are easily relieved of their contents, and will be rapidly disengorged by manipulating them as directed for a



PLATE XXIII.—Conclusion of Abduction of Thigh.



few moments; removing soreness gradually by the beginning of manipulations at the outer edge of the soreness. In this affection, general treatment should be had every day, and the disease may be reduced to a minimum, and by avoiding exposure to cold, no danger of metastasis. Should that occur, follow up treatment. Gentle treatment daily, or twice a day, relieves and shortens the disease and mitigates the suffering greatly.

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### DIPHTHERIA.

**SYNONYMS.** Putrid sore throat; malignant ulcerous sore throat; malignant quinsy; membranous angina.

**DEFINITION.** An acute, specific, constitutional disease, both epidemic and contagious, beginning by an affection of the throat, characterized by a local exudation and glandular enlargements; attended with fever, great prostration of the vital powers, and albuminuria, and having for its sequelæ various paralyses.

**CAUSES.** A specific germ, the Klebs-Loeffler bacillus. It is pre-eminently a disease of childhood. It is apt to recur in those who have once been affected. All conditions of bad hygiene increase its virulence and diffusion, although the chief cause of its spread is contagion.

The poison exists in the exudation and secretions of the fauces and saliva, but not in the breath, and floats in the atmosphere at a considerable distance from the patient. The virus adheres to the clothing, the bedding, the furniture, and the room which the patient occupied.

The period of incubation is from three to five days.

**PATHOLOGICAL ANATOMY.** The diphtheritic inflammation differs from either the croupous or catarrhal form, in that the exudation is not only upon, but also within, the substance of the mucous membrane.

At first there is redness, which may begin in any part of the throat, associated with swelling and an increased secretion



of viscid mucus. The redness spreads over the entire mucous surface, when the exudation makes its appearance. The deposit may commence from one or several points, such as one tonsil, the soft palate, or the back of the fauces, which, however, speedily extend and coalesce, forming extensive patches, or cover uniformly the entire surface.

The patches are of variable thickness, which is increased by successive layers being formed underneath.

The color is usually gray, white, or slightly yellow, but may be brownish or blackish, the consistence ranging from "cream to wash leather."

On removing the membrane, which is accomplished with more or less difficulty, a raw, bleeding surface is exposed, and at times an ulcer, which is speedily covered with a fresh deposit.

If the exudation separate itself, it is either not renewed at all or only in thinner films.

The exudation or membrane, examined by the microscope, is composed of fibrin, pus corpuscles, epithelial granular cells, and the Klebs-Loeffler bacillus and other pathogenic bacteria.

If the larynx, trachea, or nasal mucous membranes participate in the disease, the croupous and not the diphtheritic form of inflammation occurs.

The lymphatic glands of the neck, whose vessels originate in the faucial tissues, are enlarged and inflamed, and contain large numbers of bacteria, probably originating as the result of decomposition.

The muscular tissue of the heart becomes soft, is easily torn, and its fibrillæ are far advanced in granular degeneration. Ulcerative endocarditis has been frequently observed.

The kidneys undergo a granular degeneration in severe attacks.

The blood undergoes alteration, being black and fluid.

**SYMPTOMS.** Following the law of contagious diseases, the symptoms vary in intensity in different cases, the promi-

nent symptoms being often disproportionate to the gravity of the attack.

The invasion may be mild, with rigors succeeded by moderate fever, headache, languor, loss of appetite, stiffness of the neck, tenderness about the angles of the jaw, or slight soreness of the throat.

In other cases the invasion is more abrupt and severe, with chilliness followed by great febrile reaction, 103 deg. to 105 deg. F., pain in the ear, aching of the limbs, loss of strength, painful deglutition, and swelling of the neck, compelling the patient to take to bed from the onset.

The appetite is poor, the tongue slightly coated, sometimes more or less exudation appearing upon it, the bowels being either regular or slightly relaxed. The pulse, at first full and strong, soon becomes either rapid or slow, but compressible. The urine is scanty, high-colored, and contains albumen.

The local symptoms in the majority of cases are associated with the throat. The patient complains of a frequent and persistent desire to hawk, in order to clear the throat. On inspection, the fauces are seen red and swollen, and more or less covered with the diphtheritic exudation; sometimes the tonsils and uvula are greatly swollen and spotted with exudation. In severe cases, more or less ulceration or sloughing may be observed. Not infrequently fragments of exudation, the false membrane, are expectorated, with particles of the ulcerated tissues, having an offensive odor, which is transmitted to the breath. The lymphatic glands of the neck are enlarged and tender, and in severe cases the tissues of the neck are greatly tumefied.

Extension to the nasal cavities causes a sanious and offensive discharge from the nose, with attacks of epistaxis.

Extension to the larynx is indicated by hoarseness or complete loss of voice, croupy cough, and obstructive dyspnoea, which often becomes urgent, the breathing being noisy and stridulous, and subject to paroxysmal exacerbations. If

the inflammation extend to the bronchi, the breathing becomes still more embarrassed.

**DURATION.** Ranges from two to fourteen days, an average being about nine days, although complications and sequelæ may prolong its course.

Relapses are not uncommon.

**SEQUELÆ.** Those who recover from a severe attack remain often for weeks with a pale and cachectic appearance, due to profound blood alteration.

Paralysis is a common sequela, following the mild as often as the severe attacks. Usually not occurring until the patient seems fully convalescent.

Pharyngeal paralysis is most common, causing difficulty or inability of deglutition, fluids regurgitating through the nose.

Cardiac paralysis, bradycardia, is not infrequent, the pulsations descending to 60, 50, 40, and even to 20 per minute. Heart failure and fatal syncope may occur at any time during the disease.

Diphtheritic paralysis may affect the motor muscles of the eye, causing strabismus; the muscles of one side, hemiplegia; of the legs, paraplegia; and of the bladder, leading to retention of urine or difficulty in voiding it.

Multiple neuritis, with the attending loss of power, is a rare sequela.

Sensation is also diminished in the paralyzed parts.

**DIAGNOSIS.** From follicular ulceration of the tonsils, which is frequently termed diphtheria, by the slight or absent systemic symptoms, the ulcerated condition being limited to the tonsils, but often one, and the absence of glandular enlargement, and following palsies.

From pharyngitis, by the absence of exudation and loss of faucial tissue and constitutional symptoms.

From scarlatina, by the presence of the eruption and the absence of membrane in the fauces. The association of scarlatina and diphtheria must not be forgotten.

From membranous croup, by the difference in the constitutional symptoms; croup appears sporadically and is not contagious, diphtheria being highly contagious, and frequently occurs in epidemics; in diphtheria of the larynx, the depression is clearly that of blood-poisoning, while in croup the depression is in proportion to the mechanical obstruction of the respiration by the membranous exudation. The pathology of croup is simple and easy of investigation; diphtheria is obscure in its etiology and progress. The temperature record of croup is a high one until carbonic acid poisoning is imminent from the mechanical obstruction to respiration, while in diphtheria, the tendency to a decline in the temperature after the fourth day is nearly characteristic, regardless of the amount of laryngeal obstruction. In croup the pharynx contains no membrane, and is but slightly, if at all, inflamed, and associated trouble in the nose is of the rarest occurrence, the very reverse obtaining in diphtheria. In croup the laryngeal symptoms are from the onset, while in laryngeal diphtheria the pharyngeal symptoms almost always precede. In croup glandular involvement is a clinical novelty, as are subsequent palsies, while glandular involvement and various palsies are the rule in diphtheria. Albuminuria is the rule in diphtheria, seldom occurring in croup.

**PROGNOSIS.** Always grave, but more so in children than in adults. Its gravity, in the majority of cases, is proportionate to the local symptoms. The average mortality is about ten per cent.

Favorable indications are, moderate fever, strength slightly impaired, a good constitution, and moderate exudation.

Unfavorable indications are, high fever, great depression, spreading exudation, great swelling of the cervical glands, large amount of albumen, extension to the larynx and nasal mucous membranes, hemorrhages from the fauces and nose, and an epidemic character.



## THE TREATMENT.

The neck should be thoroughly treated in this affection, beginning the treatment by stretching the neck. With one hand under the chin, the other on the occiput, pull gently till the body is seen to move, then rotate from side to side while elongated, then stretch without rotation, then go right on with the general treatment, treating thoroughly close up under the chin; then place finger in the mouth, press gently all around the inside of the mouth on the fauces, the palm of finger toward and on the mucous membrane, and remove the membrane, if loose. Raise the clavicles, chest muscles and arms; and general manipulations should be given to equalize circulation. Treat the vaso-motor area by pressure several moments. This regulates the arterial circulation of the blood, lessens the fever, promotes ease, rest. Treatment should be given every six to eight hours, and the disease yields, even the most malignant type, in a very few days' treatment. The nerves that control the action of the mucous membrane of the throat and the glandular system on either side of the neck, demand special attention, from the back and sides of the neck, and high up and close around under the jaw. Careful, gentle, easy manipulations result most satisfactorily, and do not produce pain in patient. If Osteopathy relieved nothing else, its worth in this affection can not be estimated. It is magical. The judgment of the manipulator should be exercised in regard to the length of time and how often treatments should be made. Also use the tissue elements Potas, chlor. and Sodium chlor.

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RHEUMATISM.

Notwithstanding all that has been said, written and experienced and heard of noted cures, baths, springs, climates, altitudes, and localities, about causes and cures of this affection, it remains for an Osteopath to present to the world the cause of it—Impeded Capillary Blood Circulation.

At first thought it would seem improbable, but there is no possible argument against it. When the blood circulates in the capillaries properly, the normal functions of all of the blood-making material are properly performed, and a due proportion of all of the elements is kept up in every part, normal blood is manufactured. That condition keeps up in regular order from year to year through the whole round of years from the age of puling infancy to that of distorted shanks and biceps. A reference to the article on the Tissue Elements elsewhere in this book will inform the reader that these are the constituents of our physical organism; that these are largely the results of combination and manufacture from the food, after its introduction into the system, as the process of digestion is going on; that if there is a deficiency of material in the food, so that these normal elements can not be manufactured, confusion results; for to be healthy, these elements must be in the blood, for the blood is the fluid from which all of the tissues of the body are directly manufactured or nourished, and by means of the material therein the metabolism of the tissues that, no longer necessary, are to be eliminated or removed from the body. The specific gravity of normal blood is from 1.055 to 1.062, so say our physiologists, and from this fluid every tissue in the body draws its nourishment. Without certain elements in the blood, elimination of the waste material can not take place, so that we at once perceive the necessity of their presence in the blood. If these waste materials can not be, or are not eliminated, they must accumulate. If that waste be unconverted into fluid, precipitation ensues. That precipitant produces effects according to the nature of its constituents and according to the tissue in which the precipitant exists. The precipitation only ensues as a result of impeded circulation. It will be remembered that circulation is the principal manifestation of life, and is as essential as life itself, for without it life ceases to be manifest in the physical organism. It will be remembered that every tissue in the body has its special and exact proportion of

chemical elements, and that these are renewed and changed and exchanged for new material every moment of time throughout the whole of life, and that mind (divine mind) through the nervous system directs every change that is made in every department; that mind created the body out of the material it had made; gathered up such material from the great world, and placed every atomic cell in line; made it in such a way as that it would renew its forces in regular order out of the same material from age to age; placed in the most elevated realm of that body a watch that sees to it that every department shall perform its allotted labor, and that, as each department exchanges commodities, every other shall share in the profit or loss, the pleasure or pain, the good or the evil.

It is a known fact that precipitation only takes place in a state of rest—quietude. All acids precipitate into their peculiarly shaped crystals while the fluid from which they are formed is in a state of absolute rest. This rest, when applied to the circulation of the fluids of our body, results from arrest of onward flow of the fluids through their normal channels. The precipitate is also dependent upon the presence or absence of some one or more of the chemical elements in the solution—the fluid. All chemical changes take place in consequence of the added or diminished equivalent of the other material. Results are always proportioned to causes and circumstances controlling them. The variety of chemical changes that take place in the system may be imagined when we consider the number of molecules and their atomic composition. Remember that heat and cold effect chemical results, as well as the presence or absence of chemical constituents or equivalents.

Now, in rheumatism we have a disturbance caused by the precipitation of acid crystals of lactic acid, due largely to lack of sodium phosphate. The role that this salt exercises in the human economy is well described by Moleschott and Schusler. They state that it “largely consists of the catalysis of lactic acid in the blood, thus purifying that fluid from its



PLATE XXIV.—The Method of Treating the Saphenous Vein.





effete product of muscular function, which transforms stored glycogen into the acid. The liver is the prime and master laboratory of the animal body. It is essential to both the nitrogenous and the hydro-carbonaceous transformations, to the renewal and the depuration of the blood, to the production of glycogen and grape sugar from the starchy and saccharine food, and to the higher oxidation of uric acid, and other effete tissue principles, into urea, ready for elimination by the kidney, and by bile-formation contributes to the intestinal work. When inert this organ fails of this extensive function; when overactive, it exceeds it, and overproduction appears, with symptomatic effects. These functions are principally due to cell-action. There are two classes of functional or parenchymatous cells: the biliary, spread out as epithelium in the capillary branches of the ducts, in intimate relation with the vessels of the liver; and likewise with the remaining set of functional cells, viz., those of the hepatic acini, also lying in intimate relation to the blood vessels and to the biliary capillaries, with their glandular epithelium. This double duty belongs to the large cells of the acini, viz., the formation of glycogen and the formation of uric acid. In addition, the old red blood corpuscles are here in the liver, but in the portal system of veins now become capillary in the acini, are finally disintegrated, and the new-formed globules perfected. All of these varied functions, separate as they are, undoubtedly assist each other, furnishing necessary chemical changes, etc. The glycogen is believed to be mainly carried away in the blood current, to be stored in the muscular tissues, furnishing the motor energy thereto, and being chemically split into two parts of lactic acid. This acid aids in later vital functions of the body, and is at last transformed into carbonic acid and water, while circulating in the blood. This transformation takes place through the presence in the blood of the soda phosphate, and by a catalytic action of this salt. Any deficiency in this prevents this chemical change, and the lactic acid remains as such. An acid

state of the system now prevails; rheumatism, dyspepsia, intestinal troubles, etc., ensue. This acid state ceases and the consequences subside when the sodium phosphate is present or introduced into the system in proper quantities."

#### THE TREATMENT.

Our treatment, then, for rheumatism should be directed to the promotion of the circulation of the fluids of the body—onward. Then natural chemical changes take place. The sympathetic nerves control normal changes when not interfered with; when the communication from origin to termination of fibrilla is not intercepted. This obstruction is usually the result of lowering temperature on the surface (on the skin), causing contraction, thus mechanically squeezing terminal nerve filaments, modifying their functions, producing sluggish capillary peristalsis. Precipitation of acid crystals ensues; these pierce the sensory, terminal footlets; pain ensues, an intimation that interruption of circulation exists there, and calls for aid, or announces thereby that something is wrong. Now this is the simplest of the simple things to understand: Obstructed Circulation causes Rheumatism. The obstruction removed, the normal circulation continued, brings about a normal state—cures rheumatism. Whenever the proper elements are supplied, and the obstructions removed, disease of every form ceases. Health is the normal state when every organ is performing its natural function, and it will do that when the conditions are favorable. We have stated them.

Our general treatment, applied from once to three times a week for chronic ailments, is fraught with satisfactory results in the large majority of cases. To undertake to cure rheumatism without the circulation of the blood, or without the normal elements of the blood, would be the very height of nonsense; and to introduce a medicine into the body to promote absorption of deposits without a possibility of it being carried there through the blood, would be equivalent to trying to live without air, or breathe without lungs.

## ACUTE ARTICULAR RHEUMATISM.

**SYNONYMS.** Rheumatic fever; inflammatory rheumatism.

**DEFINITION.** A constitutional disease, characterized by fever, inflammation in and around the joints, occurring in succession, and a great tendency to inflammation of either the endocardium or pericardium.

**CAUSES.** The predisposing causes are inherited tendency, scarlatina, and the puerperal state.

The exciting causes are exposure to cold and chilling of the body. Rheumatism rarely occurs before seven or after fifty years. The liability to the disease is increased by having had an attack.

**PATHOLOGICAL ANATOMY.** The blood contains an excess of lactic acid. The joints bear the brunt of the attack; the synovial membrane is reddened, the vascularity of the synovial fringes is increased; so with the synovial fluid, which is thinner, of a reddish color, containing some gelatinous coagula of fibrin, and under the microscope, nucleated cells, ordinary pus cells being rarely seen.

The swelling visible from the affected part depends mostly on inflammatory œdema of the connective tissue around the joint.

The pain is probably due, in all cases, to stretching of and pressure on the elements of the tissues by the dilated capillaries and the inflammatory œdema. For the changes which ensue when the endo- and pericardium are attacked, the reader is referred to the sections on those diseases.

**SYMPTOMS.** Begins suddenly, generally at night, with a chill or chilliness, pain and stiffness in the joints, loss of appetite, at times nausea and vomiting, followed by fever, the temperature soon reaching 102 degrees F. to 104 degrees, in rare cases 108 degrees to 110 degrees (the hyperpyrexia), the pulse seldom exceeding 95, great thirst, profuse acid sweats, scanty, high-colored, acid urine, at times showing traces of albumen, the bowels constipated. The fever con-



tinues throughout the attack, showing marked remissions. Delirium is absent, except the hyperpyrexia occur. Sleep is prevented by the pain and the profuse perspirations. The strength is moderately well preserved.

The skin is often covered with an eruption of miliaria rubra, red papules, and miliaria alba, the result of irritation at the orifices of the sweat glands, from the excessive perspiration.

The local phenomena are pain, tenderness, increased heat, swelling, and redness of one or more joints; if but one joint, it is termed monoarthritis; if more than one, polyarthritis. Pain is aggravated by motion and pressure. Swelling is most apparent in those joints not covered with muscle, to-wit: knee, wrist, elbow, ankle, and the hands and feet, and is proportionate to the acuteness of the attack. The inflammation may abruptly cease at one or more joints, and as suddenly attack others.

The disease is extremely irregular as regards the number of joints affected, although the local manifestations are controlled by an important pathological law, to-wit: the law of parallelism. Corresponding joints are often affected together, and when not, the different affected joints are either on one side of the body, or those on both sides which are analogous, as the knee, elbow, wrist, ankle, hip, and shoulder, are attacked together.

COMPLICATIONS. Pericarditis, endocarditis, myocarditis, cerebral endarteritis, bronchitis, pneumonitis, pleuritis.

DURATION. The duration of acute rheumatism is governed entirely by the presence or absence of complications. Uncomplicated cases recover in from thirteen to twenty-one days, although they may be prolonged to five or six weeks. Relapses are frequent.

DIAGNOSIS. A typical case can not be mistaken for any other disease, but cases running a subacute course may be mistaken for acute rheumatoid arthritis, gonorrhœal rheumatism, or pyæmia.

Acute rheumatoid arthritis attacks one joint at a time and becomes permanent, has slight, if any, fever, no sweats or cardiac lesions.

Gonorrhœal rheumatism is associated with a gleet discharge, or follows the sudden cessation of an acute or sub-acute gonorrhœal discharge, attacks either the ankle or wrist only, is slowly influenced by treatment, and lacks the febrile phenomena.

Pyæmia is usually manifested at a single joint at the time, and is followed by suppuration, and all the symptoms of hectic fever.

PROGNOSIS. Recovery is the rule in uncomplicated cases, the mortality being about three per cent. When death occurs it usually depends upon hyperpyrexia, cardiac complication, or cerebral endarteritis.

#### THE TREATMENT.

The general treatment, as far as possible, should be instituted, approaching the manipulation of the particular joint or joints affected cautiously. The neck, spine, shoulders, clavicles, chest muscles, and vaso-motor area should not be lost sight of. The kneading of the parts mostly complained of is essential, but the soreness is frequently so great that even the approach of the doctor toward patient is resisted with intensified horror by patient. Begin where there is no or but slight soreness. Go slow, deal gently, approach cautiously, and if you are a good coaxer, you will have your patient easy in half an hour—up, walking about; but if you are a “rough” manipulator, that patient will turn you off and go to gulping down medicine, or have it injected hypodermically to get ease, and your cake is dough. Remember that venous obstructions cause the lymph to remain in the tissues, and pressure upon the sensory terminal nerve filaments produces the pain; hence a sensible regard for these end filaments may be had by lifting off the pressure. And this can be done by beginning around the edges of the painful spot. Remove contraction of muscles by opening the veins

at their junction with larger veins, and cause a *vis-a-fronte* force to pump the venous blood back, and drain the lymph channels, emptying them into the veins. Treatment should be made daily.

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### MUSCULAR RHEUMATISM.

**SYNONYMS.** According to location, to-wit: cephalodynia; lumbago; torticollis; pleurodynia.

**DEFINITION.** An affection of the voluntary muscles, inflammatory in character, either acute or chronic; characterized by pain, tenderness, and stiffness of the affected muscles. It is never complicated with cardiac disease.

**CAUSES.** A disease of adult life. One attack predisposes to another. Almost always due to cold or damp, or direct draught of cold air. Gout increases the tendency to attacks.

**PATHOLOGICAL ANATOMY.** The true nature of muscular rheumatism is not yet determined. Virchow suggests a "hyperæmia of, and scanty serous exudation between, the muscular striæ, and in chronic cases inflammatory proliferation of the connective tissue."

**SYMPTOMS.** The first attack is generally acute. Onset rather sudden, with pain in the affected muscles, with slight tenderness, and considerable stiffness and difficulty of movement, by which also the pain is increased.

The suffering may be severe and constant, or only on motion. Spasm of the affected muscles may occur. Objective symptoms are wanting, except it is evident that the patient keeps the affected muscles as quiet as possible. Fever is absent. The pain may prevent sleep.

Duration, acute form, about one week. Chronic returns frequently, and finally becomes constant and aggravated when the weather is damp.

**VARIETIES.** It may affect any or all of the voluntary muscles, but its most frequent and important varieties are:—

1. Cephalodynia. Situated in the occipito-frontal muscles. Distinguished from neuralgia of the trifacial, or occipital nerve, by pain on both sides of the head, excited or aggravated by the movements of the muscle and by absence of disseminated points of tenderness.

The muscles of the eye may be affected, and movements of that organ excite pain. If the temporal and masseter muscles are attacked, mastication excites pain.

2. Torticollis. Wry neck, or stiff neck. Situated in the sterno-mastoid muscles. Generally limited to one side of the neck, toward which side the head is twisted, great pain being excited on attempting to turn to the opposite side. Rheumatism of the muscles of the back of the neck, cervicodynia, may be mistaken for occipital neuralgia.

3. Pleurodynia. Situated in the thoracic muscles, and may be mistaken for pleuritis, or intercostal neuralgia, from which it is differentiated by the absence of the diagnostic features of each. Pain is excited by forced breathing, coughing and sneezing.

4. Lumbodynia or lumbago. Situated in the mass of muscles and fasciæ which occupy the lumbar region. Most common variety. Usually affects both sides. It may set in rapidly and become very severe. Motion of any kind aggravates the pain, often becoming very sharp or stabbing in character. It is sometimes complicated with acute sciatica, when the suffering is agonizing.

DIAGNOSIS. The different varieties may be mistaken for any of the following ailments, to-wit: trifacial, occipital, or intercostal neuralgia, pains of progressive muscular atrophy, neuritis, syphilis, metallic poisons, or painful affections of the loins, arising from calculi or gravel in the kidney.

A careful examination of the history is usually sufficient to arrive at a correct diagnosis.

PROGNOSIS. Difficult to eradicate, and in chronic cases to ameliorate, but is not dangerous to life. Death never results.



## THE TREATMENT.

The same as for acute articular rheumatism. The principle is the same, the cause is the same—why not treat the same way?

The treatment for the wry neck consists in so manipulating the muscles of the neck that the capillaries shall be emptied. That is done by first stimulating the vaso-motor area, then put the muscles of the neck and spine on a stretch in the usual way; then manipulate the muscles, especially the sterno-cleido-mastoidei muscle, thoroughly, and lift the chin, with elbow under it (curved around the chin as shown in plate), pressing the head backward on the fingers of the other hand at the back of the neck, lifting and rotating and pressing at the same time. Go over all of the muscles involved in the affection at one sitting, occupying from twenty to thirty minutes. Treat slowly, thoroughly, and repeat the treatment every twelve to forty-eight hours. Have patient avoid sudden changes of temperature, for this is the cause of contraction of muscular fiber, and obstruction of venous circulation, and nerve pressure. This course of treatment cures in a month or two the worst cases, often relieving them at once.

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RHEUMATOID ARTHRITIS.

**SYNONYMS.** Arthritis deformans; rheumatic gout.

**DEFINITION.** An inflammation of the joints, accompanied with but slight fever, without suppuration; progressive in character, causing nearly symmetrical enlargement and deformity of various articulations.

**CAUSES.** More common in females than in males, and in the weak and anæmic. Among the causes are bad hygiene, exposure, prolonged lactation, frequent pregnancies, menopause, grief, tubercular diathesis, and following attacks of articular rheumatism.

**PATHOLOGICAL ANATOMY.** It is not rheumatism, as the



PLATE XXV.—The Manipulation of the Adductors.



blood contains no lactic acid. It is not gout, as uric acid is not found in the blood, nor urate of sodium in the joints.

At first rheumatoid arthritis is attended with hyperæmia of the affected synovial membrane, and increase of the synovial fluid. Soon the capsular ligament becomes irregularly thickened, the synovial fluid decreasing. If the process continue, the internal ligament is destroyed, thus allowing dislocation to occur. The inter-articular fibro-cartilages ulcerate and disappear, as do the cartilages covering the ends of the bone, the ends of the bones becoming smooth and eburnated, and often greatly enlarged.

**SYMPTOMS.** Either acute or chronic, the latter most common.

Acute form involves several joints at the same time, and is attended with slight pyrexia.

Chronic form slowly involves one joint, which seemingly soon recovers, and is attacked again, and may never recover, but grows progressively worse.

The joint slowly enlarges, is painful, movement exciting neuralgic pains along the limb. Soon the articulation becomes rigid or slightly movable after prolonged attempts. Redness and tenderness are wanting. Crepitation is distinct after ulceration has destroyed the cartilage.

The hands are first involved, the disease spreading symmetrically from articulation to articulation, until in severe cases every joint is deformed.

**DIAGNOSIS.** Chronic articular rheumatism is often confounded with rheumatoid arthritis; but the former lacks the marked structural changes and the progressive involvement of joint after joint.

Gout differs from rheumatoid arthritis by the presence of deposits of urate of sodium in the joints, the ears, tips of fingers, and the bursæ over the olecranon process of the elbow, the presence of uric acid in the blood, and the decided history of acute paroxysms.

Gonorrhœal rheumatism, so-called, has symptoms akin



to rheumatoid arthritis, but the history of urethral suppuration clears up the diagnosis.

Paralysis agitans, when pronounced, might be confounded with rheumatoid arthritis, if the examination were limited to the joints; but the whole history, such as the tremor, the gait, etc., should prevent error.

PROGNOSIS. If early treatment be instituted, the disease may be held in abeyance for several years. After pronounced structural changes have begun, the malady is incurable, although it may remain stationary for a long time.

#### THE TREATMENT.

General treatment must be given as in rheumatic articular affections.

The special manipulations should have reference to opening up the outlets—the veins, the lymphatic tubes—and relieving the pressure by the various manipulations according to special indications in given cases. These conditions are greatly relieved by persistent treatment.

### GOUT.

SYNONYMS. Podagra, gout in the foot; chiragra, the hand; gonagra, the knee.

DEFINITION. A constitutional disease, usually inherited; characterized by the sudden occurrence of a paroxysm of severe pain and swelling in one of the smaller joints—the great toe usually—with the presence of uric acid in the blood, and the deposit of the urate of sodium in the structure of the joint.

CAUSES. Predisposing; inherited, male more than female—women after menopause.

Exciting; malt liquor and wine drinking; large consumption of animal food; lead poisoning; winter season.

When inherited tendency, may begin early in life; when acquired tendency, after thirty-five years.

The pathological cause consists in the presence of an excess of uric acid in the blood, in the form of urate of sodium.

**PATHOLOGICAL ANATOMY.** Gout is characterized by the deposit of urate of sodium from the blood into the structure of joints and tissues that are not very vascular. The deposit is associated with signs of inflammation, to-wit: hyperæmia, redness of the surface, with swelling and effusion in and around the affected joint. The surfaces of the joint are incrustated with chalk-like masses, consisting of urates, which become greater with each attack, finally causing great deformity.

The deposit usually begins in the metatarso-phalangeal joint of the great toe, but other and many joints are soon affected.

The deposits may also be found in the knuckles, eyelids, and cartilages of the ear.

“Crystals of urate of soda are deposited in the tubules and intratubular tissues” of the kidneys—“gouty kidney”—and may be seen by the naked eye, the kidneys becoming small, granular and fibrous.

Hypertrophy of the left ventricle and of the arteries, ending in atheromatous changes, are results of gout.

**SYMPTOMS.** Acute gout is rare in the United States. It occurs in paroxysms; one year's interval between the first and second attack; six months usually between the second and third, after which it may occur at any time.

Prodromes usually precede the paroxysm for several days, to-wit: acid dyspepsia, constipation, headache, and lassitude.

The paroxysm begins suddenly, between midnight and 2 A. M., with acute pain in the ball of the great toe, which becomes red, hot, swollen, and so sensitive that the slightest touch can not be borne.

The veins are filled, the foot, ankle and leg swollen, and the limb the seat of sudden spasmodic contractions, which

increase the suffering; slight relief is afforded by elevating the limb. Associated with the local symptoms are chill, fever, quickened pulse, thirst, coated tongue, constipation, and scanty, acid, high-colored urine, which deposits, on cooling, a heavy brickdust sediment.

Towards daylight the symptoms ameliorate, to return again at sundown, the severity gradually lessening, until the fourth or fifth day, when convalescence is established, the patient, as a rule, feeling better than before the attack.

**Chronic Gout.**—Either the result of acute attacks or with a greater number of joints being attacked.

The paroxysms occur at any time, but develop slowly, with less pronounced local and general symptoms. Deposits are noticed, the joints becoming hard, knobby, and often distorted. The deposits or chalk-stones (urate of sodium) occur about the joints, tendons and bursæ, and helix of the ear.

**DIAGNOSIS.** An error can not occur if the history of the case can be obtained, to-wit: hereditary tendency, age, sex (females rare, until menopause), mode of living, character of symptoms, and presence of the characteristic deposits.

**PROGNOSIS.** Acute gout rarely fatal; is prone to return, but much depending upon the mode of living.

Chronic gout decidedly shortens life. The most serious signs are those indicating advanced renal disease, with non-elimination of uric acid. Gout influences unfavorably the prognosis from acute diseases or injuries.

#### THE TREATMENT.

Gout, like rheumatism, is due to lack of Negative or splanchnic nerve force—an excess of Positive nerve force, hence an acid condition of the blood. This acid condition is the result of stasis, hence the precipitation of acid crystals. The disturbance of certain molecules, such as sodium phosphate, sodium sulphate, chloride, and magnesium phosphates, that are generally deficient in the blood, hence positive force

increased, negative decreased. General treatment is essential to cure a gouty diathesis, and the disease yields to proper, continued treatment.

Sometimes the elements have to be supplied, but when the circulation is properly established, are not needed. Give full general treatment three times a week.

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## DIABETES MELLITUS.

**SYNONYMS.** Glycosuria; melituria.

**DEFINITION.** A chronic affection characterized by the constant presence of grape sugar in the urine, an excessive urinary discharge, and the progressive loss of flesh and strength.

**CAUSES.** Most common in males. Occurs at all ages, but most frequently between twenty-five and fifty years. It is often hereditary. Disorders of the nervous, hepatic and renal systems. Excessive use of farinaceous food and malt liquors. Sexual excesses.

The exact pathology of diabetes mellitus differs in different cases, and in the present state of knowledge no exclusive view can be adopted. Still, there are reasons for believing that, in a large proportion of cases, the nervous system is primarily at fault, though the character of the lesions may differ.

**PATHOLOGICAL ANATOMY.** None peculiar to diabetes are yet recognized.

Hyperæmia and hypertrophy of the liver and kidneys are generally present, the result of increased functional activity.

The changes in the lungs peculiar to phthisis are often found in very chronic cases.

The changes in the nervous system are not fully determined.

**SYMPTOMS.** Clinically, cases differ greatly in their course and severity; one class presenting slight symptoms and a chronic course; another class having marked local and



constitutional symptoms and running an acute course. The symptoms of a typical case may be arranged under the following heads:—

Urinary Organs and Urine.—Micturition more frequent and the urine increased in quantity. Pain over the region of the kidneys.

The quantity of urine may amount to 4, 8, 12, 20 or 30 pints in twenty-four hours. It is usually pale, clear, and watery, having a sweetish taste and odor, the specific gravity ranging from 1.025 to 1.050. It ferments rapidly, if kept in a warm place. It yields grape sugar to the usual tests, the amount present varying from an ounce to two pounds in the twenty-four hours.

The urea and uric acid are increased. Albumen may be present.

The increased passage of a large quantity of saccharine urine causes a constant itching, burning and uneasy sensation at the prepuce, along the urethra, and at the neck of the bladder; in females, itching and eczema of the vulva are common; in children, incontinence of urine is frequent.

Digestive Organs.—An almost constant symptom is thirst, with a dry and parched condition of the mouth. At times the appetite is excessive, again absent. The breath may have a sweetish odor, the tongue irritable, red, and often cracked. Dyspepsia symptoms are common, and occasionally vomiting. The bowels are constipated, the stools pale and dry. At times diarrhea may occur.

The patient complains of feeling very weak, languid, and of soreness and pains in the limbs; there is more or less emaciation, a harsh, dry skin, the countenance distressed and worn.

The mind is often greatly altered; depression of spirits, decline in firmness of character and moral tone, with irritability, are present. Sexual inclination and power are demolished. Defects of vision are present.

The blood and various secretions contain sugar.

**COMPLICATIONS.** Pulmonary phthisis; Bright's disease; defects of vision from atrophy of the retina or the formation of a soft cataract; boils and carbuncles, and chronic skin affections, such as psoriasis and eczema.

**COURSE.** The clinical history varies in different cases. In the majority of instances the course is chronic, lasting for years, the symptoms beginning insidiously, and becoming progressively worse, with, at times, decided remissions. Occasionally the disease runs an acute course, death occurring within four or five weeks.

**TERMINATION.** The majority of cases ultimately prove fatal, the symptoms markedly changing, the urine and sugar diminishing in quantity, the occurrence of albuminuria, disgust for food and drink, and the development of hectic fever and colliquative diarrhea.

The fatal result usually arises from gradual exhaustion, from blood-poisoning, leading to stupor, ending in complete coma, or occasionally to delirium or convulsions, or from complications.

Rarely death occurs suddenly from uræmic convulsions or uræmic coma.

**DIAGNOSIS.** Diabetes mellitus only exists when grape sugar is permanently present in the urine. "It is not the quantity, but the persistence of sugar which constitutes diabetes." With grape sugar present in the urine, with more or less increase in the urinary flow, it can be mistaken for no other affection.

From Bright's disease, by the absence of dropsy, and of tube casts in the urine; the amount of albumen in the urine is never so great or constant in diabetes mellitus as in Bright's disease.

From diabetes insipidus, by the absence of sugar in the blood and urine, and the larger quantity of urine voided in polyuria.

Simple glycosuria differs from diabetic glycosuria in that the amount of sugar in the urine is not constant—at one

time being present, at another absent—the amount of urine voided is never in excess of health; simple glycosuria is a disease of the aged; diabetic glycosuria usually appears under fifty years. Simple glycosuria often results from the inhalation of chloroform, the use of chloral, in the insane, from excitement, or as one of the results of injuries to the head.

PROGNOSIS. Most unfavorable as regards a cure, it being fairly questionable if complete recovery has ever occurred in a typical case. Still, decided amelioration may take place in the symptoms, and the progress of the malady be greatly retarded. The younger the patient the more rapid the fatal termination.

#### THE TREATMENT.

Taking into consideration the fact that diabetes is a result of many pathological conditions, the treatment involves treatment for these before a change can be expected favorable to patient. Our motto is: "Take off the pressure," and this is eminently important in this case. The glandular system, the whole alimentary canal, the brain and spinal nervous system require to be looked after, hence a general treatment, all over, should be repeatedly administered every third day, giving special attention to the spinal region all the way down, even to end of sacrum. The movement of dorsal and lumbar muscles, upward and outward, beginning with the glutæi, working upward, and the pressure with fingers and thumb on sacral as well as lumbar area, with strong bending of lumbar region backward, from below upward, and persistent vibratory manipulations on lumbar area for several moments at each sitting, will be found to be beneficial, soothing and restorative. Due regard must be had to the general circulation, the digestive tract, the nerves involved, and especially those of the sympathetic controlling the secretions.

Any specific directions for treatment of these peculiarly complicated conditions would be misleading, and the Osteopath must remember that wherever incoordination is found correct it.

PLATE XXVI.—Treating Fibula and Leg Muscles.







## DIABETES INSIPIDUS.

**SYNONYMS.** Polyuria; polydipsia.

**DEFINITION.** An affection characterized by the habitual discharge of a very large quantity of pale, watery urine, free from albumen and sugar.

**CAUSES.** Occasionally hereditary, or diabetes mellitus may have existed in the parent; more common in children or young adults; men are more liable than women; injuries and diseases of the nervous system; exposure to cold; drinking freely of cold water; fatigue; prolonged debility; malaria; syphilis.

The probable immediate cause of the excessive flow of urine consists in dilatation of the renal vessels, the result of paralysis of their muscular coat, caused by derangement of innervation, as the condition can be induced experimentally by irritating a spot in the fourth ventricle, or by section of portions of the sympathetic nerve.

**SYMPTOMS.** The affection is characterized by great thirst, with an increased flow of pale, watery, slightly acid urine, the amount varying from one to five or six gallons in the twenty-four hours. The specific gravity ranges from 1.001-1.007. Sugar and albumen are absent. Urea and the other solids are increased. The appetite is voracious, the bowels are obstinately constipated, and the skin is dry and harsh.

The large flow of urine is usually preceded by various nervous phenomena, as nervousness, irritability, inability to concentrate the mind, vivid imagination, a failure of memory, and headache.

Unless the affection is soon arrested great loss of flesh and strength results.

**DIAGNOSIS.** It differs from diabetes mellitus by the absence of grape sugar in the urine.

From paroxysmal diuresis, by the absence of the increased urine permanently.

From interstitial nephritis, by the greater amount of

urinary discharge and the absence of albumen, œdema, and casts.

**PROGNOSIS.** Rather unfavorable as to a radical cure, unless caused by syphilis. Death rarely is due to the diabetes, but to some intercurrent malady that the patient has been unable to withstand, on account of the weakness produced by the diabetes.

#### THE TREATMENT.

That this is strictly due to a nervous condition there can be no doubt, hence the indication is: Correct the nervous condition. To do this there should be special attention given to the spinal nervous system. Inasmuch as the sympathetic nervous system controls all action through the motor nervous system, the pressure must be removed from that system of nerves. This involves the whole organism—every capillary in the body—and can only be corrected by a general treatment, beginning at the vaso-motor area, and emphasizing special parts, especially along the dorsum, embracing renal splanchnic area, stimulating terminal nerve filaments along the spine, in our usual, general way, divulsing sphincter muscles, urethral canal, removing all obstructions and sources of irritation everywhere, and using considerable vibratory manipulation on spine, abdomen, liver, spleen, and pancreas.

Such emphasis should be placed on certain portions of the body as is demanded, and in the judgment of the operator seems most appropriate, and there should be persistence in this course until every source of irritation is removed. Healthy, pure, arterial blood must be directed to every capillary in the body, and complete restoration of nerve influence over the manufacture of glandular secretion, and the eliminating organs normalized.

## LITHÆMIA.

**SYNONYMS.** Lithiasis; uric acid diathesis; half gout.

**DEFINITION.** A condition in which the fluids of the body are saturated with nitrogenized waste, in the form of lithic or uric acid; characterized by marked dyspepsia, various nervous phenomena, muscular and articular pains, bronchial catarrh, all or any of these associated with scanty, high-colored, acid urine.

**CAUSES.** High living, with little exercise; imperfect digestion of nitrogenized food; impaired elimination of uric acid.

**PATHOLOGY.** Not clearly determined. The non-elimination of certain products which have a deleterious influence upon the nervous system. That uric acid does exist in the blood is now generally accepted.

**SYMPTOMS.** Those of dyspepsia associated with irregular bowels, scanty, high-colored, acid urine, sp. gr. 1.024-1.028, containing neither sugar nor albumen, but showing an increased proportion of urates. Also depressed spirits, impaired memory, loss of interest in occupation, sleepless nights, attacks of vertigo, neuralgic pains in the head, and a constant dread of apoplexy or cerebral disease. Also pains in the joints, neuralgic in character. If the condition be allowed to continue, the following organic changes may result, to-wit: fatty heart; fibroid kidney; enlarged liver, or changes in the cerebral vessels.

**DIAGNOSIS.** From gout, by the absence of acute paroxysms and resulting changes in the joints.

**PROGNOSIS.** If properly recognized and treated, complete recovery will result, although it is a disorder of long duration.

If not properly treated, develops some one of the organic diseases mentioned.

## THE TREATMENT.

Inasmuch as the fault seems to be in the organs of elim-



ination, the skin, lungs and kidneys should receive special attention at our hands. The eliminative power of these organs is dependent upon the healthful condition of the nerves that control them, and this healthful condition is dependent upon normal circulation. It follows as a sequence that to remedy the defects, there must be restoration of the circulation. To obtain this, the splanchnic nervous system, the negative pole, must be united to the positive, so the circulation may be complete. The generation of alkali is an essential element in this case, and the splanchnic nervous system controls that part of our physical economy; hence the spinal area demands special attention. Beginning at the vasomotor area, we give general treatment, carefully stretching the neck, together with the spinal column, then removing all the pressure from the contracted muscles in the neck, raising the clavicles, chest, treating the liver, spleen, bowels, kidneys, using vibratory manipulations over the lumbar area, bowels and liver, and treating the lower extremities. We then manipulate the joints in such a manner as to free the circulation, and take off the pressure generally.

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### CHOLERA.

**SYNONYMS.** Epidemic cholera; Asiatic cholera; malignant cholera; spasmodic cholera.

**DEFINITION.** An acute, specific, infectious disease, epidemic in the majority of, although endemic in other, localities; characterized by the transudation of serum into the stomach and intestinal canal, and violent purging of a peculiar, rice-water-like fluid, the persistent vomiting of a similar material, severe muscular cramps, and a condition of prostration, followed by collapse and death, or of a reaction from the collapse and the development of the typhoid state (cholera typhoid).

**CAUSES.** A specific poison, the "comma bacillus" of

Koch. Cholera is but feebly contagious, in the usual acceptation of that word, but it is unquestionably infectious.

The evidence seems conclusive that the cholera stools are the main, if not the only, channel of infection, and that the great cause of the propagation of cholera is the contamination, with the cholera stools, of the water used for drinking purposes. Milk may also be the vehicle by which it spreads. It is claimed that the bacillus is inert in the intestinal canal unless the individual is in the "receptive state"—that is, a condition of intestinal catarrh, such as results from eating unripe fruit, beer and spirit drinking, and indigestible food. It is also determined that the bacilli are destroyed by acids, and that if the stomach be normal, cholera will not result. "With pure water, pure air, pure soil, and pure habits, cholera need not be feared."—Hart.

Little, if any, danger exists from being in the presence of the affected, although the emanations from the cholera excreta in the atmosphere may generate the disease if swallowed or inhaled. The dead bodies of cholera subjects apparently possess slight infective property, "the bacteria of composition," probably destroying the cholera germs. One attack does not afford protection against another.

The period of incubation is short, under a week usually.

PATHOLOGICAL ANATOMY. This is, as yet, far from satisfactory. The morbid appearances in the majority of cases of death from cholera may be thus summarized. The temperature generally rises after death, the body remaining warm for a considerable time. Rigor mortis rapidly ensues, the muscular contractions being often so powerful as to displace and distort the limbs. The skin is mottled and the body greatly shrunken. The blood is darker in color, thick, viscid, feebly coagulable, and slightly acid. The arteries are quite empty of blood; the veins, on the other hand, are distended. The organs are, as a rule, pale and shrunken.

The stomach and intestinal mucous membranes are congested, and present evidence of extravasation and ecchy-

moses, or are bleached and pale. The stomach and intestines usually contain a quantity of whey-like material, having an alkaline reaction, as well as quantities of cast-off epithelium and the peculiar bacillus. It is thought by many that the stripping-off of the epithelium is a post-mortem phenomenon. The Peyer's solitary and Brunner's glands are usually enlarged and prominent, and occasionally evidences of ulceration are apparent in the solitary glands, and sections placed under the microscope show the "comma bacillus." The villi of the mucous membrane, as well as the epithelium of the small intestines, are stripped off, leaving the basement membrane, for the most part, exposed. The liver is more or less advanced in fatty degeneration, presenting a somewhat mottled, yellowish discoloration. The kidneys are congested, the epithelium of the tubules granular and detached from the basement membrane, blocking up the tubes. Prof. Bartholow observed in all of his autopsies, "considerable hyperæmia and dilatation of the vessels of the medulla oblongata. The constancy of this lesion would seem to indicate a relationship between congestion of the medulla and the cramps."

**SYMPTOMS.** In accordance with the law of epidemic infectious diseases, the onset, course, and character of the symptoms vary in different cases and at different periods in the same epidemic.

The disease may either set in suddenly in a patient previously in good health, or it may follow an attack of rather severe and persistent typhoid symptoms, develop the so-called cholera typhoid, which prolongs the recovery for several weeks. Convalescence is often prolonged and complicated by the development of severe bed-sores, boils, bronchitis, pneumonia or parotitis.

**SEQUELÆ.** Suppuration of the parotid gland; painful tetanic contraction of the flexor muscles of the limbs; abscesses or ulcers of the limbs; profuse sweats; roseola, erythema, urticaria, and rarely vesicular eruptions.

**DIAGNOSIS.** The epidemic character, and rapid spread-

ing, and great mortality of the affection prevent its being mistaken for any other disease, although isolated cases are often confounded with cholera or with cholera morbus, the points of distinction being few, unless the "comma bacillus" only be found in the stools of true cholera.

PROGNOSIS. Very unfavorable, the mortality ranging from twenty to eighty per cent. The last epidemic in this country was much milder than former ones. The prognosis is controlled by the general condition of the patient, the age, habits, and the development of the algid state; the prognosis being more favorable in those cases which develop gradually than in those in which it reaches its acme at a single bound; the very young or very old, those addicted to the various excesses and surrounded by unfavorable hygienic conditions, are more apt to perish than are others.

#### THE TREATMENT.

This dreaded disease has slain millions, and yet no specific has been discovered that says: "Thus far shalt thou go, and no farther." Cholera is another of that group of affections resulting from disturbance in the Positive and Negative forces of the nervous systems, reversing the order of nature, neutralizing chemical affinities, and letting loose the "dogs of war" in the physical economy, drowning the tissues and dissolving the elements, relaxing the walls of every tube in the body, and permitting the fluids to escape, until complete exhaustion ensues; nervous influences are aborted; collapse closes the avenues, paralysis locks the door, the key becomes ineffectual, and death closes the physical career of the unfortunate. Cholera is like diarrhea, only an exaggeration of the same condition, and whether the "cholera bacilli" are the cause, or only a foreign substance, the treatment is the same. To unite the forces is the essential thing to do. Negative influences predominate, relaxation to paralysis of nerve filaments results; the watery portions of the blood exude in an inverse manner to a normal condition; watery diarrhea is



the result. All this is due to lack of communication and contact of terminal filaments of the motor and sympathetic nerve footlets. The communication is cut off and the splanchnics become paralyzed. We unite these forces, and restoration begins at once. Starting at the sacro-lumbar junction, we treat the spine upward; or, bending the patient by force backward, we press with the knee directly on and over the twelfth dorsal region, strongly for one to three minutes, and then use gentle pressure on and against the abdomen for a few moments; this unites the two forces, and restoration begins at once. The most marvelous change takes place in the whole system from this movement and pressure here. The stream is turned the other way—peristalsis is lessened at once, and immediate relief ensues. With children, the same results are accomplished by taking hold of the feet, placing the patient on the face, putting pressure on either side of the spine at the lower lumbar area, pressing strongly as the body is bent firmly backward by the raising of the limbs, and at the same time pressing with the fingers, fist or knee, in the lumbar region—doing so by beginning low down and treating upward each move as shown in that move elsewhere. Mesenteric nerve-stretching has much to do with results. The quieting influence of confidence enhances a wholesome outcome mentally in patient. “Fear hath torment” in this disease, perhaps more than in any other, and as the inspiration of confidence comes, cessation of the discharges sets in. Treatment is to be repeated every two to four hours, or as often as indicated, and quietude every way enjoined. Restoration of splanchnic and pneumogastric forces regulates the whole difficulty.

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### TRICHINOSIS.

SYNONYMS. *Trichinæ*; *Trichina spiralis*; “flesh-worm disease.”

DEFINITION. A typhoid condition, the result of the entrance of a parasite—the *Trichinæ spiralis*—into the intes-



PLATE XXVII.—Stretching Muscles of Back of Leg.



tinal canal, and their subsequent migration into the muscular structure; characterized by severe gastro-intestinal irritation, severe muscular soreness, and a low typhoid condition.

**CAUSES.** The *Trichinæ spiralis* are introduced into the human body by eating the infected hog's flesh, either raw or but imperfectly cooked.

**DESCRIPTION.** The parasite is found in two forms, to-wit: intestinal trichina, which is sexually mature, and muscle trichina, which is sexually immature. The intestinal trichina is a small, hair-like worm, the male measuring 1-18 of an inch, and the female 1-8 of an inch in length; the head is smaller than the rest of the body; the tail of the male has a bi-lobed prominence, between the divisions of which the anal opening is placed, and from which a single spiculum can be protruded; the female has a blunt, rounded tail, the reproductive outlet being situated toward the anterior part of the body; the ova are very small, containing embryos being produced viviparously at the rate of at least one hundred each week after the entrance of the female into the intestinal canal. The muscle trichina develops its sexual apparatus after it has entered the intestinal canal of the host.

The viable embryos discharged from the female are in a state of motion, and at once migrate from the intestines to the muscular structure of the individual, and here set up inflammatory action, they becoming surrounded by a capsule or shell in which they are coiled. After a time, in the muscle, the trichina undergoes a further change; lime salts being deposited in and about the capsule and in the parasite itself, when minute specks of lime are seen distributed throughout the muscular structure. The development of the parasite from the period of impregnation up to the time of sexual maturity is, under favorable conditions, less than three weeks. Within two days from the ingestion of the infected pork occurs the maturation of the muscle larvæ; in six days more the birth of embryos occur, and in about two



weeks the migrating progeny have arrived at their habitat, the muscular structure.

**SYMPTOMS.** These depend upon the number of parasites in the infected food. According to Dr. Sutton, of Indiana, a piece of pork the size of a cubic inch contained eighty thousand trichinæ. There are three stages described, to-wit: the intestinal, the migration, and the encapsulation.

**Intestinal Stage.**—A gastro-intestinal inflammation, with nausea, vomiting, and watery diarrhea, the severity depending upon the number of the parasites ingested.

**Migration Stage.**—A typhoid-like fever, rapid, feeble pulse, profuse sweats, intense thirst, dry tongue and lips, and red, swollen face, with soreness and tenderness of the muscular structure, increased by any muscular act. As a rule the mind is clear, but decidedly apathetic.

**Encapsulation Stage.**—If the number of parasites ingested has been few, recovery may occur in this stage, but if the number has been large, the gastro-enteritis, fever, and muscular phenomena are severe, the patient is in a critical condition, between twenty and fifty per cent. succumbing.

**DIAGNOSIS.** Unless the physician has some intimation of the cause, cases are readily mistaken for either ordinary ileo-colitis or typhoid fever.

**PROGNOSIS.** Depends upon the number of trichinæ in the pork eaten. Mortality between twenty and fifty per cent.

#### THE TREATMENT.

Osler says there is no drug that influences a favorable result in the migratory stage of this "bug." The treatment should be directed especially to the digestive system, and especially to the liver. Turn in a whole lot of bile on the "colony," and do all that is possible to move him out, and relieve the capillary congestion, so as to keep up a normal supply of arterial blood everywhere.

If pork-eaters would have the meat boiled for four hours at a temperature of over 240 degrees, trichinæ would never be found in the human system.

# DISEASES OF THE BLOOD.

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## ANÆMIA.

SYNONYMS. Spanaemia; hyperaemia.

DEFINITION. A deficiency of red corpuscles in the blood, or of its more important constituents, such as albumen and haemoglobin, or a reduction in the amount of blood as a whole; characterized by pallor and general weakness.

Oligaemia is a general lessened amount of the blood. Ischaemia is a localized anaemia.

CAUSES. Predisposing.—Sex; females, pregnancy and menopause; heredity. Exciting.—Deficient food, air, or sunshine; excessive work; mental worry; mental shock; prolonged and frequent nocturnal emissions; excessive nursing; chronic intestinal catarrh; Bright's disease; syphilis; cancer.

PATHOLOGICAL ANATOMY. Post-mortem, the tissues are thin, shrunken, and bloodless. If the anaemia has been of long duration, patches of fatty change are seen in the various organs. The blood has a brighter color, the result of diminution in the number of red corpuscles and the quantity of the haemoglobin; it is thinner than normal, and coagulates slowly and imperfectly, from diminution of the fibrino-plastic constituent. In health the blood of an adult contains about five million red corpuscles to the cubic millimeter (the female adult about half a million less). The white cells, in health, average about ten thousand to the cubic millimeter.

SYMPTOMS. Pallor, gums, tongue, ear, and conjunctivae pale. Muscular weakness, inability for exertion. Deficient appetite and impaired digestion, attacks of vomiting the result of anaemia of the medulla oblongata. Quickened respiration, irritable temper, vertigo in the erect position, attacks of swooning, hysteria, and rarely epilepsy. Irritable heart, with soft systolic basic murmurs. Nocturnal emissions in male and deficient menses in female. Marasmus in children. More or less general oedema of the eyelids and ankles. Long continued, symptoms of fatty changes in various organs or gastric ulcer result.

DIAGNOSIS. The symptoms of anaemia are so characteristic

that an error is impossible; the cause of it, however, may be hidden.

**PROGNOSIS.** Favorable if treated early. If protracted, results in more or less general symptoms of fatty degenerations or ulcer of the stomach.

#### THE TREATMENT.

This condition being due to malassimilation of food, either due to lack of one or more elementary constituents, that should be attended to the first thing. Air and sunshine should be especially regarded. Deep inhalations should be practiced several times at a sitting, and repeated every two to four hours during the day. Strict regard given to hygienic measures and daily stimulation of the vaso-motor centers, so as to regulate the circulation of the blood left in the system.

The neck muscles should be thoroughly manipulated and kneaded, all the pressure taken off, stretched as directed, by placing one hand under the chin, the other at the occiput, pull gently until the feet are seen to move, then turn face one-eighth of the angle, then back to straight line with the body; then let go, change hands and go through the same move. General and thorough, mild, all-over treatment should be made every other day. Friction along the spine, the vibratory movements on the abdomen, over the liver, spleen and kidneys. Examine the outlets of the body. Remove all undue contraction of sphincter muscles. See that the normal functions of all of the organs of the body are performed. Take off all undue pressure everywhere, and your patient will begin to brighten up, the vital fluids will take on a normal hue, and vivacity take the place of the pallor so characteristic. This is rational.

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#### PROGRESSIVE PERNICIOUS ANÆMIA.

**SYNONYMS.** Idiopathic anaemia; anaematosiis; essential anaemia; anaemia of fatty heart.

**DEFINITION.** A pernicious, progressive form of anaemia, of unknown cause, usually resisting all treatment, and toward its termination associated with fever.

**CAUSES.** The underlying cause of idiopathic anaemia is not known. Among the exciting causes may be mentioned, pregnancy, syphilis, and great worry.

**PATHOLOGICAL ANATOMY.** The blood is scanty and pale,

with diminished red corpuscles, and haemoglobin, showing a very feeble tendency to coagulate. There is no increase in the white corpuscles. The marrow in adult bones becomes foetal, red, and adenoid, and contains microcytes; several other changes have occurred secondarily in the marrow. Secondary to the anaemia, the heart, larger arteries, and certain capillary tracts exhibit circumscribed or diffused fatty degeneration. The liver, spleen, kidneys and stomach are decidedly anaemic, causing fatty changes in those organs. The skin may contain petechiae of a purplish or brownish tint, and internal hemorrhages are not infrequent; retinal hemorrhage is rarely wanting.

There is not much emaciation, though the pallor is pronounced.

**SYMPTOMS.** It begins insidiously with increasing languor and pallor, the muscular weakness compelling the patient to take his bed. Cardiac palpitation, dyspnoea, attacks of syncope, oedema, and swelling about the ankles, with petechial spots scattered irregularly over the surface; tenderness over the sternum and other superficial bones is a frequent symptom. The appetite is wanting, and nausea and vomiting occur, associated with marked dyspepsia and persistent diarrhea. As the disease progresses a remittent form of fever develops, the temperature frequently showing 102 degrees to 104 degrees F

Disorders of vision are the result of the retinal hemorrhage. The cardiac sounds are feeble and associated with soft basic or anaemic murmurs. The blood shows under the microscope the changes described in chlorosis, save the red corpuscles may be reduced to as few as 50,000 to the cubic millimeter.

**DIAGNOSIS.** Progressive pernicious anaemia is distinguished from simple anaemia and chlorosis by the greater severity of the former. From leucocythemia by the normal-sized spleen and liver, and the absence of increase in the white corpuscles.

**PROGNOSIS.** Unfavorable as a rule, although recoveries occur, but relapses frequent.

**TREATMENT.** The same as for Anaemia.

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## LEUCOCYTHEMIA.

**SYNONYMS.** Leukaemia; white cell blood; white blood; anaemia splenica.

**DEFINITION.** A condition in which there is an enormous increase in the number of white blood corpuscles, with enlarge-



ment of the lymphatic glands, spleen, and often of the bone marrow, viz.: splenic, lymphatic, or myelogenic, and is characterized by symptoms of pronounced anaemia.

**CAUSES.** The real cause and nature of the affection is unknown.

**PATHOLOGICAL ANATOMY.** The spleen is increased in size, density, and firmness; the lymphatic glands all over the body also enlarge, but are soft to the touch, often fluctuating; the marrow of the bones changes from its normal rose color to that of a greenish yellow; the liver also enlarges enormously. The blood is paler than normal, its specific gravity reduced from 1.055 to 1.040 or lower, and the white corpuscles increased in number and in size, the red corpuscles being lessened in number and size.

**SYMPTOMS.** The onset is insidious and the early progress of the disease is identical with that of simple anaemia, accompanied by swelling of the abdomen and a feeling of fullness and pain in the splenic region, due to the enlargement of that organ. In the lymphatic variety, enlargement of the glands in the groin, neck, and axillary region are associated with the great pallor. In the myelogenic variety, the bones, more particularly the ribs and sternum, are tender on pressure, the patient developing a waxy appearance. In each variety the appetite is poor, the digestion feeble, the bowels loose, the patient easily fatigued; with cardiac palpitation, and dyspnoea, with œdema of the eyelids and ankles. The urine is scanty and of high specific gravity—1.020-1.030. Fatal hemorrhages occur near the termination of the disease.

The blood is pale and watery. The white blood corpuscles are enormously increased in number. The average number of white corpuscles to the cubic millimeter normally is about 10,000. Cases are recorded in which the number of white corpuscles has equaled or even exceeded the red blood corpuscles. The size of the white corpuscles varies in different cases and also in the same case. The red blood corpuscles are frequently decreased in number and size.

**DIAGNOSIS.** This should cause but little trouble if enlarged spleen, lymphatic glands, and tender bones are associated with great pallor, and the characteristic appearance of the blood as demonstrated by a "puncture of the finger of the patient and receiving the blood on a piece of white linen or a lawn handkerchief, and placing by the side of it a similar stain of blood from a healthy subject. The full color of the latter contrasts strikingly with the stain of the former, which is hardly of a blood color and translucent."

**PROGNOSIS.** Unfavorable. The average duration is between two and three years. Cases of what are termed "acute leukaemia," proving fatal in a few months, occur.

#### THE TREATMENT.

The principal reason that renders this condition fatal is the failure on the part of the physician to comprehend the situation—the deficiency of certain elements. The malassimilation of the food eaten, due in nearly all cases to interference in the circulation of the blood in the glands, causes a deficiency of normal elements. These must be supplied before recovery can take place. The circulation of deficient fluids will not right the deficiency. The elements must be there or the power is deficient in the manufacture of them. In all cases the phosphate of lime is lacking to mature the cells, then the phosphate of iron is lacking, hence no affinity in the blood for oxygen. There is deficiency of potassium phosphate, hence nervous influence is lacking; and most generally we find sodium chloride deficient, hence the blood is thin and watery, and as the motor nervous system is involved (spinal), we lack sodium phosphate and sodium sulphate, and in young girls, where the menses are watery, silica is needed. With these elements supplied, either in the form of food or the potencies assimilable, and general treatment to arouse the glandular system to action, stimulate normal circulation and nerve force, this condition may be remedied as well as other affections. Study all the conditions existing in cases of this sort, and do not become an automaton. Meet the indications with a due amount of brains, and you will succeed. General treatment every other day.

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#### HODGKIN'S DISEASE.

**SYNONYMS.** Pseudo - leukaemia; pseudo - leucocythaemia; lymphatic anaemia; lymphadenoma.

**DEFINITION.** An affection characterized by hypertrophy of the lymphatic glands in various parts of the body, associated with marked anaemia.

**CAUSE.** Venous stasis.

**PATHOLOGICAL ANATOMY.** A hyperplasia of the lymph glands interfering more or less with their functions. The enlargement may be confined to one isolated gland, or a number may be affected in different portions of the body, or a number in one location may be simultaneously affected, causing a tumor varying in size from an egg to an orange or even a cocoanut. The spleen

and liver are involved in two-thirds of the cases. "The marrow of the long bones may be converted into a rich lymphoid tissue."—Osler. The red blood corpuscles are decreased in number and altered in size and shape; the white blood corpuscles are often increased in number.

**SYMPTOMS.** A slowly developing anaemia with isolated or diffused enlargement of the lymphatic glands. As the condition develops, fever of a remittent character occurs, with feeble cardiac action and shortness of breath. Hemorrhages may occur. The patient grows progressively worse, with all the associated symptoms of deficient blood, death occurring by asthenia.

**DIAGNOSIS.** A study of the clinical history will prevent error, as tubercular or scrofulous glands are accompanied with tubercular changes in the lungs, and do not present the same blood changes as Hodgkin's disease.

**PROGNOSIS.** Unfavorable. The progress may be slow, but it is none the less toward a fatal termination.

#### THE TREATMENT.

As the lymphatic circulation is dependent on venous circulation, the primary indication for relief is in the removal of obstructions to the venous return blood. Capillary stasis causes pressure on the terminal nerve filaments, causing inactivity, or entire loss of power in the nerves to carry on normal or any function. The pressure must be removed before health can be restored. The treatment should be general for this condition, and freedom of the circulation of the fluids of the entire body should be regarded as essential. No pathological condition can last long under our treatment for general circulation of the fluids. Take off the pressure everywhere. Health results. Beginning at the neck, treat every organ in the body. Plenty of air and sunshine, and rest of digestive organs, should not be lost sight of. Lively company, exercise, systematic bathing, friction of skin and wholesome, nutritious diet, with plenty of water to drink, six to eight pints in twenty-four hours. Recommend the non-use of breakfast, to rest the digestive organs, and no piece-between-meals allowed.

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#### ADDISON'S DISEASE.

**SYNONYM.** *Melasma supra-renal.*

**DEFINITION.** "The bronzed-skin disease." Thus defined by Averbeck: "A well-marked constitutional disease, exhibiting



PLATE XXVIII.—Stretching Tendo Achilles.





itself locally as a chronic inflammation of the supra-renal capsules, but in its essence consisting in a peculiar anaemic condition, always tending toward death, which is characterized by intense development of pigment in the cells of the rete malpighii and in the epithelium of the mucous membrane of the mouth."

CAUSES. Obscure. Tubercle, scrofula, and syphilis have each been given as the cause.

PATHOLOGICAL ANATOMY. A low form of inflammation, terminating in degeneration of the supra-renal capsule. The blood is deficient in fibrin and red corpuscles, with a slight increase of the white corpuscles. Fatty degeneration of the heart and vessels has been observed in some cases. "The most striking change during life—the abnormal pigmentation—is due to the deposition of granular pigment in the cells of the rete malpighii, in the papillary portion of the cutis, and even in the connective tissue corpuscles. No change occurs in the proper structure of the skin. Similar pigment deposits occur in the mucous membrane of the mouth, especially along the edges of the teeth." "The disease of the supra-renal capsules excites an irritation of the vaso-motor system—the trophic system—which leads to the pigmentation."

SYMPTOMS. The onset of the disease is insidious, with a feeling of extreme languor, muscular fatigue, asthenia, indigestion, anorexia, dyspnoea, cardiac palpitation, vertigo, melancholia, and excessive drowsiness. The surface is first pale, then changes to a hue like that of melanaemia, changing to icteroid, finally resembling the color of a mulatto, and then to a lusterless bronze. These changes also occur on the mucous membrane of the lips, tongue, gums, and mouth.

PROGNOSIS. An incurable disease. Duration, a year or two.

TREATMENT. Same as for Leucocythemia. Deficiency of elements supplied.

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### HÆMOPHILIA.

SYNONYMS. Hemorrhagic diathesis; "bleeder's disease."

DEFINITION. A congenital condition, characterized by a tendency to uncontrollable hemorrhages, with or without abrasions.

CAUSE. Hereditary.

SYMPTOMS. The bleeding appears about the period of first dentition, and consists of spontaneous hemorrhages from the mucous membrane of the nose, mouth, lungs, stomach, intestines,

and genito-urinary passages, or in perfect cases hemorrhages occur directly from the fingers, toes, lobes of the ears, back of the hands or arms, without any apparent change in the skin, and continue in spite of the most powerful means, for days and weeks. Traumatic hemorrhages occur if an injury of any kind is sustained about the period of the development of the bleeding. Epistaxis is the most common form of all those named. Attacks of arthritis with fever occur with haemophilia, resembling acute rheumatism. As a result of the great loss of blood, the subject suffers from all the symptoms of profound anaemia.

**DIAGNOSIS.** It is impossible to confound the "bleeder's disease" with any other affection.

**PROGNOSIS.** Death is the usual termination within a few weeks from the time of its development, which may not be until adult life.

#### THE TREATMENT.

See to it that all venous congestion is removed, venous closures opened and kept open, and supply the deficiency in the blood itself—that is, phosphate of iron. The sixth potency is the strength to use—for weeks, three or four grains at a dose three or four times a day.

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### SCORBUTUS.

**SYNONYM.** Scurvy.

**DEFINITION.** A peculiar condition of malnutrition or anaemia, gradually developing upon a dietary deficient in fresh vegetable material; characterized by decided anaemia, debility, mental lethargy, petechiae, and a swollen and spongy state of the gums, with a tendency to bleed upon the slightest irritation.

**CAUSES.** The disease only occurs when fresh vegetable nutriment or some appropriate substitute has been for a time partially or completely withheld. It is held that the diet alone is not sufficient to cause the disease; the mental factor of depression of spirits, or in some cases home-sickness (nostalgia), must be associated. It is sometimes classed as an infectious disease, due to a peculiar germ, a view which is gaining ground.

**PATHOLOGICAL ANATOMY.** An undetermined derangement in the composition of the blood, with diminished proportion of the potash salts. Spleen enlarged. The tissues are wasted and present extravasations, due to either one of or the combined

presence of the following conditions, to-wit: liquid condition of the blood, allowing it to escape from the vessels, alterations in the walls of the vessels, or a vaso-motor paralysis.

**SYMPTOMS.** General weakness, lassitude, indisposition to either mental or physical exertion. The skin is dry, rough, and of a muddy pallor, the face pale and bloated. Swelling and sponginess of the gums, with great tendency to bleed and an exceedingly offensive breath. Looseness of the teeth, hemorrhages from mucous surfaces, and extravasations of blood within and beneath the skin. The lips are pale, which is in striking contrast to the redness of the gums; the eyes are sunken and surrounded by dark blue circles. Hemorrhages occur from the stomach, mouth, bronchial tubes, intestinal canal, and vagina. The skin is dry and rough, resembling that of a plucked fowl. Œdema of the face and ankles not infrequent. Depression of the spirits is characteristic. Palpitation and dyspnoea on exertion. Urine high-colored, speedily becoming foetid. The patient usually longs for fresh vegetables and fruits.

**COMPLICATIONS.** Dysentery. Scorbutic dysentery is a frequent complication. It may co-exist with typhoid and typhus fever.

**PROGNOSIS.** Favorable, if early and properly treated.

#### THE TREATMENT.

The cause seems to be due to an excess of chloride of sodium in the system—an undue action of the Negative forces—hence the pneumogastric nervous system is at fault. Not enough acid is generated in the secretions of the stomach. The remedy is to treat the neck, with special regard to the pneumogastric nerve along the sides of the anterior aspect of the neck (in the carotid sheath). Raise the clavicles, arms, chest, and attend to the venous circulation especially everywhere. The vaso-motor centers should receive attention. Abstinence from salty bacon, and a vegetable diet, with free and deep inspirations, full expansion of the lungs, so as to oxygenate the blood, neutralize the alkalinity of the blood thereby, equalize the forces, take off the pressure from all sphincters, and flush the capillaries daily. Drink water freely. Use no stimulants, not even beer or tobacco. Daily baths; exercise in open air; sleep in thoroughly aired apartments. Get back to the primitive order of living if possible. Learn “war no more.”



## PURPURA.

SYNONYMS. Haemorrhoea petechialis; morbus maculosus Werlhofii.

DEFINITION. An acute disease, characterized by purplish discolorations of the skin, the result of hemorrhages into the upper layers of the cutis and beneath the epidermis. When the purpuric spots are tiny, like a pin-point, they are termed petechiae; when larger in size they are termed ecchymoses.

VARIETIES. Purpura simplex; purpura haemorrhagica; purpura urticans; peliosis rheumatica.

CAUSES. Not properly understood, a special germ supposed to be the cause. It may occur at any age, but is especially frequent in children and elderly people. Its occurrence after the ingestion of certain articles of diet has been observed.

SYMPTOMS. Purpura simplex is the mildest form of the affection, and is characterized by the sudden appearance of small, bright red spots—a cutaneous hemorrhage—most commonly on the legs, associated with slight lassitude, mild febrile reaction, and aching pains in the limbs. The hue of the spots rapidly fades to a purplish color and slowly disappears. Relapses are common.

Purpura haemorrhagica has in addition to the eruption of purpura simplex—the cutaneous hemorrhage—a flow of blood from the free surface of mucous membranes. The most common hemorrhage is epistaxis, slight or profuse. Other hemorrhages are haematemesis, melaena, haematuria, haemoptysis, menorrhagia, and also into the substance of the mucous membranes of the palate, cheek, and gums. This variety is associated with great debility and depression, moderate fever, and disorders of digestion. Marked anaemia results from the hemorrhages.

Purpura urticans is a combination of urticaria and purpura simplex. It is characterized by rounded and reddish elevations of the cuticle, resembling wheals, but which are not accompanied, like the wheals of urticaria, by any sensation of itching or tingling. They are usually seated on the legs, thighs, breast, and arms, and are interspersed with petechiae. They gradually form and subside within twenty-four or thirty-six hours. Relapses are frequent. This variety is also associated with malaise, moderate fever, and pains in the limbs.

Peliosis rheumatica (Schoenlein's disease) is characterized by multiple arthritis and a purpuric eruption; frequently the arthritic symptoms are associated with urticaria or with erythema exudativum. Œdema is often marked, as in the fever, sore throat, and

general constitutional symptoms. The eruption is sometimes of vesicles—pemphigoid purpura.

DIAGNOSIS. The purpuric eruption in each variety of the affection is so characteristic that an error seems impossible.

PROGNOSIS. Purpura simplex and purpura urticans are favorable, but relapses are frequent. Purpura haemorrhagica is always a grave disease, often proving fatal from exhaustion, or more rarely, from cerebral or pulmonary hemorrhage. Peliosis rheumatica is often a severe affection, but recovery is the rule.

#### THE TREATMENT.

There is nothing else indicated in this affection so prominently as freedom of the circulation of the blood, and as the nervous system that controls the circulation is interfered with the means we have to relieve this condition are in our own hands, largely at least. Stimulate the vaso-motor system the first thing; free muscles of cervix; raise the clavicles, arms, chest; overcome the sphincters and restore capillary and venous circulation, and keep the pressure off, and the blood will flow through normal channels, and no hemorrhage will ensue. Remember that "to take off the pressure" cures all curable affections. Exercise the same sense here as is required in all other pathological conditions, and the same satisfactory results will obtain.

# DISEASES OF THE RESPIRATORY SYSTEM.

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## PHYSICAL DIAGNOSIS.

PHYSICAL DIAGNOSIS is the art of discriminating disease by means of the eye, the ear, and the touch. The signs thus ascertained are connected with changes or alterations in the form, density, or condition of the structures within, and are known as physical signs. "Physical signs are, then, the exponents of physical conditions, and of nothing more."—Da Costa.

The method employed in the physical exploration of the chest are: 1. Inspection; 2. Palpation; 3. Mensuration; 4. Percussion; 5. Auscultation; 6. Succussion.

Percussion and auscultation, dealing with sounds, are of the greatest value, clinically. For the purpose of physical exploration, the chest is mapped off into regions or divisions, as follows:

*Anteriorly.*—1. Supra-clavicular.—Lying above the upper edge of the clavicle, usually about an inch in extent. 2. Clavicular.—Corresponding to the inner two-thirds of the clavicle. 3. Infra-clavicular.—From the clavicle to the lower border of the third rib. 4. Mammary.—Between the third and sixth ribs. 5. Infra-mammary.—Downward from the sixth rib.

*Laterally.*—1. Axillary.—That portion above the sixth rib. 2. Infra-axillary.—That portion below the sixth rib.

*Posteriorly.*—1. Supra-clavicular.—That portion above the scapula. 2. Scapular.—That portion covered by the scapula. 3. Inter-scapular.—That portion between the scapulae. 4. Infra-scapular.—That portion below the angle of the scapula.

## INSPECTION.

INSPECTION signifies "the act of looking." Views of the chest should be taken from the sides and behind as well as from the front; for which purpose a good light should be obtained, and the patient be placed in as easy and comfortable a position as is possible. Inspection reveals the form, size, color, and movements of the chest, as well as the condition of the superficial parts.

In health the sides of the chest are for the most part symmetrical in form, size, color, and movements, both sides rising equally during the act of inspiration, and falling equally during the act of expiration. During the act of inspiration the intercostal spaces in the lower two-thirds of the chest become more hollow, as also do the supra-clavicular fossae. Inspiration is almost entirely the result of muscular action; expiration, on the other hand, is chiefly due to the elasticity of the lungs and chest walls, aided somewhat in forced respiration by muscular action. The movement of inspiration by inspection is of longer duration than that of expiration, and the pause between the acts but momentary. The respiratory movement is visible over the whole thorax, although in males and in children it is most distinct at the lower portion (inferior costal breathing), while in the female it is most distinct at the upper portion of the chest (superior costal breathing).

#### PALPATION.

By PALPATION is meant the application of the palmar surfaces of the hands and fingers to the chest, by which means we appreciate impressions which are capable of being conveyed by the sense of touch. The objects of palpation are: 1. To give more accurate information regarding what is revealed by inspection. 2. To locate spots of soreness, the density and condition of tumors, if any be present, the state of the chest walls, the frequency of the breathing, and the action of the heart. 3. To determine the existence and character of the various kinds of fremitus (vibrations).

By FREMITUS is understood certain tactile impressions or vibrations conveyed to the surface of the chest, which are classed and produced as follows: 1. Vocal Fremitus.—Produced by the act of speaking or crying. 2. Tussive Fremitus.—Produced by the act of coughing; of value especially when the voice is very weak. 3. Bronchial Fremitus.—Produced by the passage of air through mucus, blood, or pus, in the bronchial tubes, during the act of respiration. 4. Friction Fremitus.—Produced by the rubbing together of the roughened surfaces of the pleura.

When the normal chest vibrates lightly, it is termed the normal vocal fremitus. The vocal fremitus is more distinct upon the right side toward the apex. If the lung be consolidated (denser), the vibration is greater and more easily distinguished—the vocal fremitus is increased. In feeble persons, or when any cause



interferes with the transmission of the vibrations, the vocal fremitus is diminished or absent.

#### MENSURATION.

MENSURATION, or measurement of the chest, is of little practical importance, and hence seldom performed. The only measurement likely to be required is the circular or circumferential, in different parts of the chest, which is performed with either an ordinary graduated tape measure or a double tape measure, made by uniting two tapes in such a manner that they start in opposite directions from the same point at the mid-spinal line. The tapes are drawn around each side until they meet at the mid-sternal line, on a line immediately above the nipple, or on the level of the sixth rib near its attachment to the cartilage—the sixth costo-sternal joint—the patient first being directed to effect a complete expiration, the number of inches noted, and then to take a deep inspiration, the increase in inches noted, the difference between the two giving a rough estimate of the capacity of the lungs. In right-handed persons the right side is usually one-half to three-fourths of an inch longer than the left; if larger than this it is usually the result of some abnormal condition. In well-developed men the chest measures at the upper part about thirty-three to thirty-five inches during expiration, and is increased fully three inches upon inspiration.

#### PERCUSSION.

PERCUSSION, or “the act of striking,” to ascertain the composition of structures, affords signs and information of great value in diagnosis. There are two methods employed, immediate and mediate. Immediate, or direct percussion, is performed by striking the thorax directly with the points of the fingers or the palmar surface of the hand. This method of percussion has been generally abandoned, as it does not enable the physician to distinguish, with sufficient correctness, between the various shades of difference in the pitch or quality of percussion sounds.

Mediate, or indirect percussion, may be practiced in three different ways, to-wit: 1. With the finger of one hand interposed between the body percussed and the percussing finger. 2. With the finger acting as a pleximeter and the percussion hammer. 3. With the percussion hammer and the pleximeter.

The first of these modes affords the most correct and ready information regarding the resistance of the parts percussed. The skillful use of the fingers is more difficult to acquire than that of



PLATE XXIX.—Treatment of Outside of the Thigh.



the pleximeter and hammer; but if the examiner has acquired sufficient skill in its performance, an absolutely accurate result may be obtained. "He who is skilled in digital percussion will be able to percuss equally well with the hammer, the inverse of which does not always hold good." In addition to being proficient in the technical *modus operandi*, it is necessary to possess a sensitive ear, educated to distinguish between the various shades of the sounds.

When the fingers are employed, it is a matter of choice whether one or more fingers are used as the pleximeter. Usually the last phalanx of the first or second fingers of the left hand are used, the other fingers being raised from the chest, so as not to interfere with the sound vibrations; they should be applied firmly and evenly to the surface, thus preventing the slipping of the soft parts, and also to determine the resistance of the chest walls when the blow is given. The rounded ends of the first and second fingers of the right hand are used as a hammer, striking the pleximeter fingers in such a manner that the nails shall not touch the skin of the underlying fingers. The force employed varies in different regions, but usually, for the chest, should be only of moderate degree. Forceful percussion is of use only when the sound of deep-seated organs is desired.

The stroke should be made perpendicularly to the surface and not slanting, as is too often done. The whole movement should proceed only from the wrist-joint, and ought not to be too rapid or unequal, or of great force, the fingers being rapidly withdrawn, so as not to interfere with the vibrations.

THE OBJECTS OF PERCUSSION are to elicit certain sounds, and the amount of resistance or elasticity of the organs percussed. The main sounds elicited by percussion are the dull, clear, and tympanic. Familiarity with the intensity, character, and pitch of each of these sounds is essential.

When percussing the healthy chest, the sound obtained is termed the normal pulmonary resonance. It is of variable intensity, depending upon the force of the stroke employed, and the amount of adipose and muscular tissues covering the thorax, and the tension of the chest walls. There is no exact standard of the normal pulmonary or vesicular resonance, but if the two sides of the chest are compared, the normal standard of each person is obtained.

The character is termed pulmonary or clear, as characteristic of the healthy chest wall. The pitch is always relatively low.



The sounds elicited by percussing a healthy chest are not, however, alike over all its parts.

Anteriorly, the portion of lung above the clavicle yields a sound which becomes somewhat tympanitic as the trachea is approached. Over the clavicle the sound is clear and pulmonary at the center of the bone, but at the scapular extremity it is duller, and toward the sternum it becomes somewhat tympanitic. At the infra-clavicular region the resonance is clear and distinct, but little resistance being offered to the percussing finger, and the sound elicited may be taken as a type of the pulmonary resonance. In this region, however, a slight disparity exists between the two sides; on the right side the sound is less clear, shorter, and of a higher pitch than on the left side. In the mammary region of the right side the resonance of the lung is not so clear, the sound being modified by the size of the mamma and the upper border of the liver. On the left side the heart deadens the sound from the fourth to the sixth rib, and, in a transverse direction, from the sternum to the left nipple. This dull sound in the left mammary region is lessened in extent during full inspiration, and in emphysema, when the lung more completely covers the heart. In the infra-mammary region on the right side the percussion note is dull, except during the act of complete inspiration, when the liver is displaced downward by the inflated lung. In the left infra-mammary region the sound consists of a mixture of the dull sound of the heart and spleen, and of the clear sound of the lung, together with the tympanitic sound of the stomach. Over the upper part of the sternum—above the third rib—the sound is slightly tympanitic. Below the third rib, over the sternum, the sound is dull, due to the presence of the heart and liver.

The position exercises some influence on the results of percussion. More accurate results are obtained when the patient is standing or sitting than when recumbent. While the front of the chest is percussed, the arms should hang loosely by the sides; the hands may be clasped across the top of the head during the percussion of the axillary region; during the examination of the back the head must be bent forward and the arms tightly crossed in front.

On the posterior surface of the chest the sound also varies according to the part percussed. Over the scapulae the sound is duller than between these bones or below their inferior angles. Over the infra-scapular region a clear sound is obtained as far as the lower border of the tenth rib on the right side, where the

dullness of the liver begins. On the left side, below the angle of the scapula, the percussion sound is tympanitic if the intestines are distended, or it may be slightly dull if the spleen be enlarged. In the axillary region the sound is clear and distinct on each side. In the infra-axillary region of the right side the sound is duller, owing to the presence of the liver; at the corresponding situation on the left side, the sound is clear or tympanitic, from the distention of the stomach, and at the ninth or tenth rib of the left axillary region dullness and the sense of resistance mark the location of the spleen.

The sounds obtained by percussion of the unhealthy or abnormal chest are as follows: 1. Hyper-resonance, or an increase of the normal pulmonary resonance, is due to the relative increase in the proportion of air to the solid tissues of the lung, provided the tension of the chest walls be not altered, occurring in emphysema of the lungs, atrophy of the lungs, or consolidation of the opposite lung. 2. Dullness or an absence of resonance, due to the relative increase of solid tissues in proportion to the amount of air, as seen in the different stages of phthisis, in pneumonia, pleural effusion, and hydrothorax. The pitch is increased or heightened in proportion to the diminution of the amount of air and the increase of the solids. If there be entire want of resonance, the percussion note is said to be flat; if there be a slight decrease in the resonance of the part, the note is said to be impaired. The sense of resistance is greater, the more marked the consolidation of the lungs and the greater the tension of the chest walls. 3. Tympanitic, or the drum-like percussion note, is a non-vesicular sound, having the character elicited by percussing over the normal intestines; wherever heard it indicates the presence of air in conditions similar to that of the intestines, to-wit: inclosed in walls which are yielding, but neither tense nor very thick. When elicited over the chest it may be due to the transmitted sound of the distended stomach or colon. It is obtained over the chest in the pneumothorax, in moderate pleural effusions above the level of the liquid, over the seat of cavities in the pulmonary tissues, and in œdema of the lungs. The tympanitic percussion note differs from the normal pulmonary resonance in being more ringing in character and of a higher pitch. The amphoric or metallic sound is in reality a concentrated tympanitic sound of high pitch, and denotes a large cavity with firm, elastic walls. The cracked-pot or cracked-metal sound is another variety of the tympanitic sound. The condition most commonly

producing this sound is a cavity in the lung tissue, communicating with a bronchial tube. It requires for its development a strong, quick blow of the percussing finger, with the patient's mouth open.

*Respiratory Percussion.*—The percussion sound will vary greatly with the respiratory movements. If a full inspiration be taken and percussion performed, then a full expiration taken and percussion performed, and then the chest percussed during the normal respiration, slight changes in the character and pitch of the note are obtained, which otherwise would escape detection. Prof. Da Costa has designated this method respiratory percussion.

*Auscultatory Percussion.*—This method consists in listening with a stethoscope applied to the thorax, to the sounds elicited by percussion. "It is a serviceable means of determining with accuracy the boundaries of various organs, as those of the lungs or heart, or of the liver or spleen, and yields particularly exact results when carried out with the double stethoscope."

#### AUSCULTATION.

AUSCULTATION, or listening to the sounds produced within the chest during the act of respiration, coughing, or speaking, furnishes the most reliable means of studying the condition of the lungs, and is therefore the most valuable method of discriminating between the various conditions which may affect the lungs.

Auscultation is either immediate or mediate. It is immediate when the ear is applied directly to the chest, which may be either denuded or thinly covered. It is mediate when the sounds are conducted to the ear by means of a tubular instrument, termed a stethoscope. For ordinary purposes, immediate or direct auscultation is sufficient, but when it is desirable to analyze circumscribed sounds, as in diseases of the heart, or where the patient objects to this method, on the score of delicacy, or the auscultator objects, on account of the uncleanness of the person examined, the stethoscope is to be preferred. Moreover there are certain parts of the chest which can only be explored satisfactorily by the aid of a stethoscope, and again this instrument has the additional advantage of intensifying the sound.

In auscultation the following rules, formulated by Prof. Da Costa, should be observed: "1. Place yourself and your patient in a position which is the least constrained and permits of the most accurate application of the ear or stethoscope to the surface. Above all, avoid stooping, or having the head too low.



2. Let the chest be bare, or what is better, covered only with a towel or thin shirt. 3. If a stethoscope be employed, apply closely to the surface, but abstain from pressing with it. This may be obviated by steadying the instrument, immediately above its expanded extremity, between the thumb and the index finger. 4. Examine repeatedly the different portions of the chest, and compare them with one another while the patient is breathing quietly. Making him cough, or draw a full breath, is at times of service: especially the former, when he does not know how to breathe."

*Sounds in Health.*—If the ear be applied over the larynx or trachea of a healthy person, a sound is heard with both the act of inspiration and expiration. Its intensity is variable, its pitch high, and its quality tubular (to wit: a current of air passing through a tube—the larynx or trachea). The duration of the sound during inspiration being somewhat longer than during expiration. A short pause follows the act of expiration. This sound is termed the normal laryngeal respiration, and is identical in character, duration, and pitch, with an important morbid sound, termed bronchial respiration.

The sound heard by placing the ear over the lung tissue is different; it is produced in the very finest bronchial tubes and air cells by their expansion and contraction, and is termed the normal vesicular murmur. The inspiratory portion of the sound is of variable intensity, its pitch is low, its quality soft and breezy, designated vesicular; its duration is during the entire act of inspiration. The expiratory portion of the sound is not always perceptible; it is of feeble intensity, very low pitch, its character soft and blowing, and its duration much less than the act of inspiration. It is to be remembered, however, that the vesicular murmur will be found to vary in the different regions on the same side, and in corresponding regions on the two sides of the chest. These variations within the range of health are especially important, and should be memorized.

*Infra-clavicular Region.*—The vesicular murmur in this region on either side is much more distinct than over any other part of the chest. On the left side the inspiratory sound is of greater intensity, of lower pitch, and more distinctly vesicular in quality than that heard upon the right side. On the right side the expiratory sound is nearly or quite the same length as the inspiratory sound, and is higher in pitch and more tubular in quality than the expiratory sound upon the left side.



Supra-scapular Region.—Owing to the small number of air vesicles and the large number of bronchial tubes, and their nearness to the surface, the respiratory murmur has an intense, high-pitched, tubular and expiratory quality.

Scapular Region.—Compared with the infra-clavicular region, the respiratory murmur heard over the scapulae on either side is more feeble, and the vesicular quality less marked.

Inter-scapular Region.—The murmur in this region differs from the normal laryngeal breathing only in intensity and duration.

Infra-scapular Region.—The murmur in this region very closely resembles that heard in the left infra-clavicular region.

Mammary and Infra-mammary Regions.—The murmur in these regions differs from that heard in the infra-clavicular region, in being of less intensity.

Axillary and Infra-axillary Regions.—The respiratory sound in the axillary regions is as intense as in any portion of the chest. In the infra-axillary regions the intensity is less and the pitch lower.

*Voice in Health.*—If the ear be applied over the larynx or trachea of a healthy person, and he be directed to count “twenty-one, twenty-two, twenty-three,” in a uniform tone and with moderate force, there is perceived a strong resonance, with a sensation of concussion or shock, and a sense of vibration, thrill, or fremitus, the voice seeming to be concentrated and near the ear. Often the articulated words are distinctly transmitted (laryngophony). The sounds thus heard are termed the normal laryngeal resonance.

If the ear or stethoscope be applied over the third rib anteriorly, on either side of the chest of a healthy person, and he be directed to count “twenty-one, twenty-two, twenty-three,” in a uniform tone, with moderate force, a confused distant hum is perceived of variable intensity, accompanied with more or less vibration, thrill, or fremitus, most distinct in adults, but notably weaker in women than in men. This sound is termed the normal vocal resonance.

If the ear or stethoscope be applied over the third rib anteriorly of a healthy person, and he be directed to whisper, in a uniform manner, the words, “twenty-one, twenty-two, twenty-three,” there is heard a sound corresponding closely in character to the sound of expiration over the same region during the act of forced respiration; or, in other words, a feeble, low-pitched, blowing

sound. This sound is termed the normal bronchial whisper, and is produced by the air in the bronchial tubes during the act of respiration.

*Sounds in Disease.*—The vesicular murmur may undergo, in disease, changes in its intensity, its rhythm, and in its character.

The intensity of the respiratory murmur may be: 1. Exaggerated or increased. 2. Diminished or feeble. 3. Absent or suppressed.

EXAGGERATED RESPIRATION differs from the normal vesicular respiration only in an increase in the intensity of the respiratory sounds. When general over one lung, it will usually indicate deficient action of other parts. In this manner an effusion compressing the lung, one-sided deposits, obstruction of the bronchial tubes by secretion, or inflammation of the lung structure, necessitate a supplementary respiration in a healthy portion of the same lung or the lung upon the opposite side. From its resemblance to the loud, strong, quick respiration of young children, it has been termed puerile respiration. Exaggerated respiration is therefore to be regarded as indirect evidence of disease in some portion of the pulmonary tissue.

DIMINISHED RESPIRATION, called also senile respiration, as being characteristic of old age, is characterized by diminished intensity and duration of the sound. In the large majority of instances the inspiration suffers the greatest, the expiratory sound not diminishing in the same proportion. In asthma, emphysema, diseases of the larynx and bronchial tubes, pleuritic pain, rheumatism or paralysis of the chest walls, or in thickening of the pleural membrane, we observe superficial or diminished respiration. When one side of the chest is partially filled with fluid, we may hear a deep-seated but feeble breath sound.

ABSENT OR SUPPRESSED RESPIRATION occurs whenever the action of the lung is suspended; this may be from external pressure, as when the lung is compressed by the presence of fluid or air in the pleural cavity, or when complete obstruction of the bronchial tubes prevents the air from either entering or escaping from the lungs.

The rhythm of the respiratory murmur may be: 1. Interrupted or jerky. 2. The interval between inspiration and expiration prolonged. 3. Expiration prolonged.

In health the inspiratory and expiratory sounds are even and continuous, with a short interval between each act; this may be altered in disease, and both sounds, especially the inspiratory,

have an interrupted or jerky character, termed "cog-wheel respiration."

THE JERKY BREATHING is noted in some spasmodic affections of the air tubes, in hysteria, the earliest stages of pleurisy, pleurodynia, and the early stages of pulmonary phthisis. It is most frequently associated with phthisis, due probably to the adhering to the walls of the finer bronchial tubes of tough mucus, which obstructs the free entrance and exit of the air; it is usually most notable under the clavicles.

THE INTERVAL BETWEEN INSPIRATION AND EXPIRATION MAY BE PROLONGED, instead of these two sounds closely succeeding each other. When this occurs the inspiratory sound may be shortened, or the expiratory sound may be delayed in its commencement. If the inspiratory sound is shortened, it is the result of consolidation of the lungs; if the expiratory sound is delayed, it is the result of lessened elasticity of the lung structure, and is most commonly associated with emphysema.

PROLONGED EXPIRATION denotes that the air is obstructed in its exit from the lungs. It may be the result of diminished elasticity, the result of emphysema, or from the deposit of tubercles, which impair the contractile power of the lungs. If the former, it is associated with clearness on percussion; if the latter, however, with impaired resonance on percussion. When prolonged expiration is detected at the apex of the lung, and is associated with impairment of the normal pulmonary resonance, it is for the most part the result of a tubercular deposit.

THE QUALITY of the respiratory murmur may be: 1. Harsh, termed vesiculo-bronchial respiration. 2. Bronchial. 3. Cavernous. 4. Amphoric.

HARSH RESPIRATION, or, as it is termed by Prof. Da Costa, vesiculo-bronchial respiration, is that variety in which both the inspiratory and expiratory sounds have lost their natural softness. It generally indicates more or less consolidation of lung tissue. In normal vesicular respiration the sounds produced by the air expanding the air cells and finer bronchial tubes obscures the sound produced by the passage of air through the larger bronchial tubes, the healthy lung being an imperfect conductor of sound, so that as soon as any portion of the lung becomes consolidated the vesicular element of the respiratory sound is diminished, the bronchial element becoming prominent. Harsh respiration is, then, a union of the vesicular and bronchial sounds, being a vesicular sound mixed with some of the qualities of a



PLATE XXX.—Expansion of Chest by Two Persons.





bronchial sound, the expiration being prolonged, and tubular in character. It is present when the bronchial mucous membrane is swollen, as in the earlier stages of bronchitis; also, in the earlier stages of phthisis and pneumonia.

BRONCHIAL RESPIRATION is characterized by an entire absence of all the vesicular quality. Inspiration is of high pitch and tubular in character; expiration still higher in pitch, of greater intensity, prolonged and tubular in quality; the two sounds being separated by a brief interval. The bronchial respiration encountered in disease closely resembles that heard in health over the larynx or trachea. Whenever bronchial respiration is present where, in health, the normal vesicular murmur should be heard, it indicates consolidation of the lung structure.

CAVERNOUS RESPIRATION is a variety of the bronchial respiration, at least so far as the quality of the sound is concerned. It is essentially a blowing sound, yet not always heard during both the acts of inspiration and expiration, being often only perceptible in the one, and in the other mixed with gurgling sounds. Its pitch is lower than that of ordinary bronchial respiration, and its character is hollow. For its production there must be a cavity of considerable size in the lung substance, not filled with fluid, near the surface of the chest walls, communicating with a bronchial tube. It is met with most commonly in the last stages of pulmonary consumption, although hollow spaces of any kind, from abscesses or dilatation of the bronchial tubes, occasion it.

AMPHORIC RESPIRATION is a blowing respiration, having a musical or metallic quality. It is a variety of bronchial respiration produced in a large cavity with firm walls, permitting the reflection of the sound. An imitation of this sound, though only an imperfect one, is produced by blowing over the mouth of an empty bottle. The amphoric character is present with both the acts of inspiration and expiration. Amphoric or metallic respiration is indicative of a large cavity, not common in phthisis, but much oftener heard at the upper part of a lung compressed by fluid or air, as in pneumo-hydrothorax.

#### RALES.

RALES, or, as they are termed, adventitious sounds, because they have no analogue in the healthy state, can not be considered as modifications of the normal respiration. Grouped according to the anatomical situation in which they are produced, we have:

1. Laryngeal and tracheal rales. 2. Bronchial rales. 3. Vesicular rales. 4. Cavernous rales. 5. Pleural rales.

RALES may be divided into two groups, according to their character, to-wit: dry and moist, and may be audible either during the act of inspiration or expiration, or during both.

DRY RALES, for the most part are produced by the vibration of thick fluids which the air can not break up, and which, therefore, temporarily lessens the caliber of the bronchial tubes. When this narrowing exists in the smaller bronchial tubes the resulting sound is high-pitched or the rale is said to be sibilant or whistling; when the narrowing exists in the larger bronchial tubes, the rale is low-pitched, more musical in character, or sonorous. Dry rales are particularly prone to be dislodged by coughing, and when they are uninfluenced by the acts of breathing or coughing, they do not depend upon the presence of secretions, but upon the narrowing of the air tubes from the pressure of tumors, or from a thickened fold of mucous membrane, or from a spasmodic contraction of the air tubes.

MOIST RALES are those produced by the air passing through thin fluids, such as mucus, blood, serum, or pus, during the respiratory movements. When the fluid exists in the smaller bronchial tubes, the rales are termed small bubbling, mucous, or subcrepitant. When the fluid exists in the large bronchial tubes, the rales are said to be large bubbling or mucous. Moist rales are not persistent, but vary in intensity, and shift their positions as the air drives the liquid which occasions them before it, or during violent attacks of coughing, or after copious expectoration.

LARYNGEAL AND TRACHEAL RALES are those produced within the larynx and trachea, and may be either moist or dry. The moist or bubbling sounds, produced when mucus or other liquids accumulate in this part of the air tubes, frequently occur in the moribund state, and are then known as the "death rattles." When not due to this condition they denote either insensibility to the presence of liquid, as in stupor or coma, or inability to remove liquid by the act of expectoration, as in croup or inflammation of these parts in the very feeble. The dry rales produced within the larynx or trachea are generally caused by spasm of the glottis, to-wit: laryngismus stridulus, whooping cough or croup, or from the presence of a foreign body in the part.

BRONCHIAL RALES, resulting from the passage of air through the thin liquid, occasion bubbling sounds. When the liquid is

present in the large-sized bronchial tubes, the rales are said to be large bubbling, or large mucous rales, occurring in acute or chronic bronchitis. When the liquid is in the smaller bronchial tubes, the resulting rale is called small bubbling, small mucous, or subcrepitant, also occurring in acute or chronic bronchitis. Bronchial rales, due to the narrowing of the tube by its spasmodic contraction, or to the presence of tough, tenacious mucus, which is set in vibration by the passage of air through the bronchial tubes, are termed dry bronchial rales. Frequently they are suggestive of certain familiar sounds, such as snoring, cooing, humming, or wheezing, or they are often musical notes. When produced in the smaller bronchial tubes, they are termed sibilant, or high-pitched rales; when produced in the larger bronchial tubes, they are termed sonorous or low-pitched rales. They principally occur in the dry stage of bronchitis, or during an asthmatic paroxysm.

THE VESICULAR RALE, or, as it is more commonly termed, the crepitant rale, is produced within the air vesicles or at the terminal portion of the smaller bronchial tubes. It is to be distinguished from very fine bubbling sounds, or the subcrepitant rale. "It is a very fine sound, or rather series of very fine uniform sounds, occurring in puffs and limited to inspiration."—Da Costa. It resembles the noise occasioned by throwing salt on the fire, or alternately pressing and separating the thumb and finger, moistened with a solution of gum arabic, and held near the ear, or rubbing together a lock of dry hair near the ear. The crepitant rale is produced by the movement of fluid in the air cells in the finest extremities of the bronchial tubes, or by the forcing open, during the act of inspiration, of the air cells agglutinated by exuded lymph. These sounds may be defined as being very fine, dry, crackling sounds, heard at the end of inspiration. They are usually present in the first stage of pneumonia, but when limited to the apices, are significant of the incipient stage of phthisis.

CAVERNOUS RALES, or, as they are commonly termed, gurgling rales, are produced in a pulmonary cavity of considerable size, containing a large amount of liquid communicating freely with a bronchial tube. The sound is occasioned by the agitation of the liquid within the cavity, and may be compared to the sound produced by the boiling of liquid in a flask or large test-tube. The sound is sometimes high-pitched or musical, whence it has been termed "amphoric gurgling," but it is generally low in pitch. The rale is heard almost exclusively during the act of inspiration,



and its diagnostic importance relates to the advanced stage of phthisis.

PLEURAL RALES may be either dry or moist. Dry pleural rales, or, as they are more commonly termed, friction sounds, are occasioned when the surfaces of the pleura are covered with a glutinous substance, preventing the unobstructed movements of the pleural surfaces upon each other during the respiratory acts, for in health these movements occasion no sound whatever. The sounds are generally interrupted or irregular, occurring during the act of inspiration or expiration, or during both acts. The character of the sound is variable, being termed rubbing, grazing, rasping, grating, or creaking, according to the intensity of the respiratory acts and the amount of exudation. They are distinguished by the apparent nearness of the sound to the ear, and are usually intensified by firm pressure of the stethoscope upon the chest. When the chest is fixed, especially at the lower two-thirds, and the ear applied over the seat of the sound, it will be found to have disappeared. The sound is diagnostic of the first stage of pleurisy.

MOIST FRICTION sounds are produced in the same manner as those just mentioned, the exudation being softened in character. This sound is frequently confounded with moist bronchial rales, and its discrimination is often only positive by a careful study of the symptoms and concomitant signs present.

METALLIC TINKLING is a sign of pneumo-hydrothorax with perforation of the lung, and when found is usually diagnostic of this affection, although it occurs rarely in cases of phthisis with a large cavity, the physical conditions for its production being similar to those in pneumo-hydrothorax, to-wit: a space of considerable size containing air and liquid, the space communicating with the bronchial tubes. It consists of a series of tinkling sounds, of high pitch, silvery or metallic in tone, and is very well imitated by dropping a small marble into a metallic vase. It occurs irregularly, not being present with every act of breathing, and may be produced by forced, when not heard during tranquil, breathing.

Were it not for the location and the absence of concomitant signs, it might be confounded with tinkling sounds sometimes produced within the stomach and transverse colon.

#### THE VOICE IN DISEASE.

THE NORMAL VOCAL RESONANCE, as heard over the third rib

of the chest anteriorly on either side may have its intensity—1. Diminished or absent. 2. Increased or exaggerated.

Or its resonance may be of the character of—3. Bronchophony. 4. Pectoriloquy. 5. Ægophony. 6. Amphoric voice.

THE VOCAL RESONANCE MAY BE DIMINISHED OR FEEBLE in bronchitis with free secretion, pleurisy with effusion, or in complete consolidation of the lung structure and the bronchial tubes. THE VOCAL RESONANCE IS ABSENT in pneumothorax and in pleurisy with effusion. EXAGGERATED VOCAL RESONANCE differs from the normal vocal resonance in a slight increase of its density. It denotes a slight degree of solidification of lung tissue, and is chiefly of value in the diagnosis of tubercle.

BRONCHOPHONY, or the voice concentrated near the ear, raised in pitch and in intensity, denotes complete consolidation of the pulmonary tissue in those parts in which the sound is abnormally present.

PECTORILOQUY is complete transmission of the voice to the ear, the articulated words being distinctly recognized. It has a close resemblance to the resonance heard over the larynx in health. Its presence indicates either a pulmonary cavity or more complete consolidation—in other words, an exaggerated bronchophony.

ÆGOPHONY is a modification of bronchophony, consisting in tremulousness of the voice, its character nasal or bleating, somewhat suggestive of the goat. When heard it may be considered a sign of pleurisy with slight effusion, or of pleuro-pneumonia.

AMPHORIC VOICE, or "the echo," as it is sometimes called, is a musical sound, of a somewhat hollow, metallic character, like that produced by blowing into an empty bottle. It is sometimes produced in large cavities within the lung, but is especially incident to pneumothorax.

INCREASED BRONCHIAL WHISPER is a sound in which the whispered words are abnormally intense, and higher in pitch than the normal bronchial whisper. It has the same significance as exaggerated vocal resonance.

#### SUCCUSSION.

The succussion or splashing sound is pathognomonic of one affection, namely, pneumo-hydrothorax. It is obtained by jerking the body of a patient with a quick, somewhat forcible movement, the ear being very near or in contact with the chest. The sound is like that produced when a small keg, partially filled

with liquid, is shaken. The only liability to error is in confounding this splashing sound with that sometimes produced within the stomach; but attention to concomitant signs and the symptoms will always protect against this error.

#### ASSOCIATION OF THE PHYSICAL SIGNS (DA COSTA).

As many of the signs elicited by the various methods of physical diagnosis depend on the same physical conditions, they may be studied in groups. The following will be usually found to be associated:

PERCUSSION.	AUSCULTATION OF RESPIRATION	AUSCULTATION OF VOICE.	VOCAL FREMITUS.	PHYSICAL CONDITIONS.
Clear. . . .	Vesicular murmur or its modification.	Normal vocal resonance.	Unimpaired.	Lung tissue healthy or nearly so; at any rate, no increased density from deposits, etc.
Dull. . .	{ Bronchial, or harsh respiration. Absent respi- ration.	Broncho- phony.	Increased.	Solidificat'n of pul- monary structure.
		Absent voice.	Diminished or absent.	Effusion into pleu- ral sac.
Tympanitic.	Cavernous or feeble, according to cause.	Uncertain; cavernous or diminished.	Uncertain, mostly diminished.	Increased quantity of air within the chest, due to a cavity or to over-distention of the air cells.
Amphoric or metallic.	Amphoric or metallic.	Amphoric or metallic.	Mostly dimin- ished.	Large cavity with elastic walls.
Cracked metal sound.	Cavernous respiration.	Cavernous respiration.	Uncertain.	Generally a cavity communicating with a bronchial tube.

## DISEASES OF NASAL PASSAGES.

### ACUTE NASAL CATARRH.

SYNONYMS. Acute rhinitis; acute coryza; "cold in the head."

DEFINITION. An acute catarrhal inflammation of the mucous membrane (pituitary or Schneiderian membrane) lining the nose and the cavities communicating with it; characterized by feverishness, feeling of fullness and discomfort in the head, and attended with discharges of fluid, watery, mucous, or mucopurulent in character.

PATHOLOGICAL ANATOMY. Hyperaemia of the mucous membrane, attended with redness, swelling, and deficient secre-

tion. This tumefaction is partly increased by an oedematous infiltration, causing a quantity of colorless, salty, and very thin liquid to flow from the nose. The secretion soon assumes the character of thick, tenacious mucus or muco-pus, due to the desquamation of the epithelium of the nasal mucous membrane, and a copious generation of young cells, the hyperaemia and the swelling of the membrane diminishing. The respiratory portions of the nasal fossae are more markedly affected than are the olfactory. Rarely, and then in new-born infants and those affected with the eruptive fevers, the exudation in the nasal passages is of a fibrinous nature, somewhat similar to that observed in diphtheria.

**CAUSES.** Atmospheric changes are the most frequent and influential. Exposure of the neck to a draught of cold air, or of the feet and ankles to cold and dampness, or changing from a warm to a cold atmosphere suddenly, are among the most usual causes. Irritating gases and vapors, dust, certain powders, as ipecac and tobacco. The scrofulous taint and the rheumatic diathesis seem to render the mucous membrane susceptible to frequent attacks. Acute coryza is usually present in the initial stage of measles and influenza. Epidemic influence occasionally prevails on an extensive scale. The poison of syphilis and the use of iodide of potassium not unfrequently act as exciting causes. At times the catarrh seems to spread to contagion.

**SYMPTOMS.** "A cold in the head" is usually preceded by a feeling of lassitude or weariness and more or less frontal headache; then occur irregular chilly sensations in the back, followed by more or less feverishness and an uncomfortable feeling of dryness in the nares, with a strong inclination to sneeze. This is soon followed by an abundant watery and saline discharge, which is continually dripping from the nostrils, or occasions an attack of sneezing followed by blowing the nose, which relieves the congested and swollen membrane for a few moments. The relief is temporary, however, the fullness of the head and difficult obstructed nasal respiration rapidly returning. The anterior nerves are red and inflamed, and the eyes red and suffused with tears, through partial or entire closure of the tear ducts. The discharge soon assumes a purulent character. The voice has a peculiar tone, rather nasal and muffled in character. Within a few days the swelling subsides, and secretion lessens, health being restored in about ten days from the beginning of the attack. When the attack has almost terminated hard crusts may form



within the nostrils, either on the septum or turbinated bones, which are with difficulty expelled by blowing the nose.

**COMPLICATIONS.** Irritation and swelling of the upper lip, from repeated blowing of the nose and the constant contact of the irritating discharge. Extension of the catarrh to the ethmoid or sphenoid cavities or frontal sinus, causing increased and severe frontal headache; or to the antrum of Highmore, causing tenderness over one or both cheeks. Extension to the Eustachian tube and middle ear, causing impaired hearing; or to the pharynx or larynx, causing cough.

**DURATION.** In mild cases about one week; severe cases continue, more or less marked, for two weeks.

**PROGNOSIS.** Favorable if early and proper treatment be instituted: if neglected, the catarrh tends to become chronic. In very young infants, if the catarrh is not rapidly relieved, loss of flesh and strength occur, from inability to take the breast.

#### THE TREATMENT.

This affection is wholly due to capillary congestion in the mucous and submucous membrane (in the lining) of the nose—all caused by muscular contraction, arresting the return of venous blood to the heart. The remedy is: Take off the pressure from the veins, and send the arterial blood onward, and the debris is dissolved, moved out through the lymphatics into the veins, and healthy blood takes the place of it, renews life's forces, and health results. The pressure will usually be found on the jugulars. Some one or more of the muscles of the neck will be found to have their fibers contracted, either on the veins themselves, or on the nerves supplying the muscle through which it passes to reach the mucous membrane, producing a paralysis of the nerves supplying the membrane, or closing down on and around the veins so that the blood in the veins can not return, nor can the waste material enter the channel of the veins so as to be removed. In either case the results are the same—capillary and venous stasis. The remedy at once suggests itself to the Osteopath, or to any rational practitioner. The results are just as certain as that two and two make four. The head, neck, and throat treatment, raising the clavicles, chest muscles, and stimulating the vaso-motor area, stretching the neck—in a word, restoring general circulation, by taking off the pressure from all sympathetic nerve filaments—cures catarrh. Carry out the general treatment, from the beginning of the first move, as directed on the neck and throat, being particularly careful to free thoroughly



PLATE XXXI.—Back and Shoulder Treatment.



all the muscles of the neck, and raise the clavicles, chest, and chest muscles, stretching the arms upward during deep inhalations as the fingers are lowered down the spinal column. Due regard is to be paid to the knee and chest move, and the mucous membrane treatment in the fauces and the soft palate. The last treatment is made with the forefinger inserted in the mouth, the palm surface placed just posterior to the last molar tooth region, press against the posterior border of the soft palate, letting the finger slide along its border to the opposite side, then back to place of beginning. The divulsion of the nostrils should be attended to during the process of treatment. The patient should be instructed in the manner of breathing at stated intervals and sittings, oxygenating the blood several times a day. The use of stimulants to be interdicted—all kinds. Treatments every day, or at least every other day, and a cure may be relied upon in a month or six weeks, at farthest.

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### CHRONIC NASAL CATARRH.

**SYNONYMS.** Chronic rhinitis; chronic coryza.

**DEFINITION.** A chronic inflammation of the mucous membrane lining the nasal passages, with more or less alteration of structure; characterized by a sensation of fullness in the nares, increased secretion, and a perversion of the special sense of smell and of hearing.

**CAUSES.** The result of repeated attacks of the acute variety; inhalation of irritating vapors and dust; syphilis and scrofula.

**PATHOLOGICAL ANATOMY.** The mucous membrane of the nares is thickened, of a dark red, sometimes grayish color, the superficial veins dilated and varicose, often forming polypoid enlargements. In many cases there is ulceration of the structure, with more or less loss of substance; the secretion is thick, tough, of a greenish character, and often very foetid; large collections of dried mucus are often formed upon the turbinated bones and septum.

**SYMPTOMS.** A feeling of fullness in the nares, increase of the secretion, the character being thick and greenish, which, dropping posteriorly into the pharynx, causes paroxysms of "hawking," which are more marked in the morning immediately after rising. The special sense of smell is more or less impaired, and in many cases entirely abolished; the special sense of hearing is



more or less diminished, from an extension of the inflammation to the Eustachian tubes; the voice has a peculiar nasal intonation. An almost constant dull frontal headache, associated with a feeling of weight, showing the extension of the disease to the infundibulum and frontal sinus. Sudden changes of temperature cause acute exacerbation of these symptoms, when there is superadded difficult nasal respiration. If ulceration of the nares occur, the discharge has a foetid odor. This condition is termed ozaena.

From extension of the inflammation to the nasal duct or its obstruction, the tears flow over the malar eminence (epiphora), leading to more or less congestion of the eyes.

DIAGNOSIS. Hypertrophy of the turbinated bones and nasopharyngeal catarrh are constantly misnamed chronic nasal catarrh. The rhinoscope readily determines the diagnosis.

PROGNOSIS. Permanent cure is seldom obtained; the disease being so decidedly chronic and obstinate, the treatment is of necessity protracted, and the majority of patients tire of it before a complete cure is effected.

#### THE TREATMENT.

In chronic catarrhal conditions we find more or less rigidity in the muscles of the neck. After treating the back of the neck, stretching the same and rotating the head while the neck is extended, the angles of the inferior maxillary are thoroughly manipulated, the ears strongly vibrated, the temples vibrated, the forehead manipulated, the facial nerve exits from the foramina duly desensitized and vibrated, and the inner canthi thoroughly stimulated, the sides of nose duly and strong vibrated, the sphincters divulsed, and the superior maxillaries duly vibrated; the neck muscles close up under the angles of the inferior maxillary should be thoroughly relaxed, pulled, and all the neck muscles freed from rigidity as much as possible every treatment; then the clavicles raised, the chest muscles and ribs extended during deep inspirations, and the neck stretched by taking hold of the back of the neck with the thumb and fingers of one hand, the other arm circling under the chin, the chin resting in the bend of the arm, and with a gentle, steady, upward raise of the whole body, the fingers on the back of the neck adjust all muscles, bones, etc., there as the neck is stretched and gently rotated, and swayed sidewise, backward and forward. The veins and lymphatics are thus freed, the congestion relieved, and arterial blood sent in to supply the place of the waste material, through the capillaries.

## DISEASES OF THE MOUTH.

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### STOMATITIS AND GLOSSITIS.

Catarrhal Stomatitis.—Acute catarrhal inflammation of the mouth, fauces, tongue.

Aphous Stomatitis.—A fibrinous or croupous exudation of the follicles of the mouth.

Ulcerative Stomatitis.—Or diphtheritic stomatitis, or soreness of the mouth.

Parasitic Stomatitis.—Commonly named Thrush, a disease of childhood generally.

Glossitis.—An inflammation of the parenchyma of the tongue, either acute or chronic.

Gangrenous Stomatitis.—Or the cancrum oris; noma; water cancer.

These come under the general treatment for freeing the circulation of the blood vessels and lymphatics of the neck. It will be found that the jugulars are not carrying back the fluids to the dumping ground (the heart) for all the debris that accumulates in the environments of the capillaries and the beginnings of the lymphatics, and the result of this accumulation is decomposition of elements and precipitation of incompatible anatomic cells that should be held in solution in the blood—and would have been had there been freedom of the circulation. It is not enough that the capillaries be free, but the channels of all of the vessels returning the fluids back to the heart must be free, and any undue pressure on the nervous system supplying any part, however delicate, produces changes that become factors in pathological conditions. From these premises it is readily understood what a magnificently stupendous subject we have under consideration—that of coordination of every tissue in the body with every other tissue; the rightful appreciation of which, in the comprehension of its importance, becomes marvelously interesting. To realize the stupendous fact that our life depends upon the rightful adjustment of the various parts of the system, and to know how to make these adjustments, are accomplishments that are not usually attained in our farthest advanced institutions of classic lore, hence this is a revelation far in advance of anything realized or thought possible by the dominant schools outside of the “indicated remedy” or by some “contraria-curantur” compound introduced into the sys-

tem with supposed power to lay hold of the "materies morbi" and hurl it from its lurking place bodily. "Expectation's hollow dreams" have not been realized, and it has been left for the Osteopath to reveal to the world the proper means of accomplishing, in a large majority of instances, the desired object, and with a certainty never before known, cure many supposedly incurable affections. While it is not a "cure-all," yet it is a multifarious measure that demands the attention and appreciation of the would-be healer of diseases.

#### THE TREATMENT.

The treatment of all of the affections named begins in the vaso-motor nervous area. Freedom of all of the muscles on all sides of the neck, in the usual way; the raising of the clavicles, the treatment of the spine, the splanchnics, the liver, in fact the general treatment, or whatever parts are indicated, will change the pathology of all—mouth, throat, and stomach troubles—to a physiological one. Thorough treatment must be made, and repeated every six to twenty-four hours, occupying fifteen to twenty minutes.

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## DISEASES OF THE PHARYNX.

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### ACUTE CATARRHAL PHARYNGITIS.

**SYNONYMS.** Catarrhal tonsillitis; angina catarrhalis; acute "sore throat."

**DEFINITION.** An acute catarrhal inflammation of the mucous membrane of the tonsils, uvula, soft palate, and pharynx; characterized by rigors, fever, painful deglutition, coughing, or constant desire to clear the throat, with a more or less decided nasal intonation of the voice.

**CAUSES.** Exposure to cold and damp; swallowing hot fluids or food; during the prevalence of scarlatina, measles, erysipelas, influenza, diphtheria, or variola.

**PATHOLOGICAL ANATOMY.** The mucous membrane and submucous tissues of the uvula, soft palate, fauces, tonsils, and pharynx are congested, red, and swollen; the secretion is at first lessened or entirely arrested, later it is increased, but of a thick, tenacious, opaque character. The swelling is most evident at the



uvula, due to the amount of relaxed submucous tissue, which is especially thick and long, often resting on the root of the tongue ("the palate is down"). Frequently one or both tonsils are swollen to such an extent that the fauces are completely occluded, and the condition is mistaken for the graver phlegmonous tonsillitis. In severe attacks of catarrhal angina, white or grayish-white membranous masses form in small, irregular, roundish spots on the reddened mucous membrane of the tonsils, soft palate, and pharynx, causing the affection to be frequently mistaken for diphtheria.

**SYMPTOMS.** The onset is usually sudden, with rigors, fever, thirst, headache, loss of appetite, coated tongue, bad taste, foul breath, dryness in the throat, painful deglutition, and constant desire to clear the throat, due to the increased length of the uvula; as the inflammation proceeds the secretions are increased, the fluid often filling the mouth and also causing a constant desire to swallow, each act being associated with acute pains. Not infrequently earache adds to the patient's distress, from extension of the "catarrh" to the Eustachian tubes and tympanum.

In severe attacks of catarrhal pharyngitis, cases which, from the intense hyperaemia, have been termed erysipelatous or erythematous pharyngitis, the muscles of the palate are infiltrated with serum, which greatly interferes with their function. Under normal conditions the contraction of the muscles of the anterior half arches of the palate prevents the return of food and drink into the mouth; while the contraction of the muscles of the posterior half arches, together with the uvula, closes the passage to the nose; if the function of these muscles be impaired, fluids would be driven through the nose or back into the mouth by the contractions of the pharynx in the act of deglutition.

In all affections of the pharynx a nasal tone is pathognomonic, especially if the muscles of the half arches are interfered with.

**VARIETIES.** Exanthematous Pharyngitis is the form of the affection complicating the acute infectious diseases, such as scarlatina, measles, influenza, and smallpox.

Erysipelatous Pharyngitis is the form complicating facial erysipelas; rarely, however, the affection begins in the pharynx, spreading to the face and other parts.

Gangrenous Pharyngitis may occur with diphtheria, scarlatina, erysipelas, smallpox, and typhoid fever. The symptoms



assume a typhoid (depressed) character, the termination being usually fatal.

Phlegmonous Pharyngitis is the variety in which is present an accumulation of pus in the submucous and deeper tissues of the pharynx, constituting a retro-pharyngeal abscess. This variety of pharyngitis may follow the penetration of a sharp piece of bone or be secondary to caries of the cervical vertebrae.

Fibrinous Pharyngitis; or, as it is sometimes termed, pseudo-membranous, is considered with croup and diphtheria, of which it constitutes a part.

DIAGNOSIS. On account of the great swelling of the tonsils, it may be mistaken for acute tonsillitis; but the mild inflammatory symptoms should prevent the error. Cases with membranous deposits upon the tonsils, soft palate and pharynx, are no doubt often misnamed diphtheria: the marked difference in the constitutional symptoms should prevent the error.

PROGNOSIS. Favorable, the affection terminating in three or four days by the raising of a quantity of thick, opaque mucus.

#### THE TREATMENT.

The jugulars are compressed. Venous blood is in the small pharyngeal veins, the lymph is locked in the channels, decomposition has taken place; changes are going on all the time as a consequence. The thorough neck treatment as directed for the other forms of catarrh is the course to pursue in this affection to cure it. Take off the pressure. These treatments should be made frequently at the start, endeavoring to abort the consequences; the time between treatments to be governed by the circumstances attending each individual case. It is a strange matter with those unacquainted with this system of treatment, that such malignancies as are witnessed in throat affections yield so quickly to this treatment properly applied. Every form of malignancy succumbs to freeing the engorgement. This is far better than the process of "rotting out" the tissues, resulting in blood-poisoning.

In acute cases the treatment should be very mild, and the movements should not be too deep at the start. The gradual removal of the pressure can be done more satisfactorily than with much force at the start. The amelioration will be witnessed as the pressure is taken off; and the patient will begin to show signs of relief at once as the process continues. These treatments should be repeated according to the emergencies of the case. This is the only rational means of cure.

## ACUTE TONSILLITIS.

**SYNONYMS.** Amygdalitis; quinsy; phlegmonous pharyngitis.

**DEFINITION.** An acute parenchymatous inflammation of one or both tonsils, with a strong tendency toward suppuration; characterized by moderate fever, pain in the throat, a constant desire to relieve the throat, painful and difficult deglutition, impeded respiration, and more or less muffling of the voice.

**CAUSES.** Generally attributed to exposure to cold, but, in the majority of cases, the exposure is so slight that there must be a predisposition to the affection; for persons once affected are particularly prone to repeated attacks upon the slightest exposure.

**PATHOLOGICAL ANATOMY.** One or both tonsils will be seen, on inspection, to project from its bed, as a rounded, deep red body, which may even extend beyond the median line, when they may entirely occlude the isthmus of the fauces; the half arches and posterior border of the soft palate are reddened and somewhat swollen. The surface of the tonsils is often covered with small, yellowish points, which closely resemble patches of false membrane, but careful inspection will show that they are beneath the mucous membrane, being only the distended follicles of the gland. The mucous membrane of the fauces and pharynx is more or less red and swollen.

**SYMPTOMS.** Onset more or less sudden, with rigors, rise in temperature, 102 degrees to 104 degrees F., full, frequent pulse, 100 to 120, headache, thirst, pain, and swelling at the angle of the jaw, with a constant desire to clear the throat, difficult and painful deglutition, from the enlarged tonsils, almost closing the fauces, when the respiration is more or less impeded; the voice is more or less muffled, and attempts at phonation increase the pain. Darting pains along the Eustachian tubes are of frequent occurrence, the patient complaining of earache and more or less deafness.

If suppuration be imminent, the throat becomes more painful, the character of the pain throbbing, the febrile phenomena increase, with more or less depression, the symptoms seeming to be of great danger, when suddenly, after an effort at vomiting, or spontaneously, the tonsillar abscess bursts, a quantity of pus escapes from the mouth, and prompt relief follows.

**DURATION.** The disease lasts from three to seven days, terminating either by suppuration or the gradual resolution of the enlarged glands.

**DIAGNOSIS.** Tonsillitis can hardly be mistaken for any other affection if the fauces are inspected.

**PROGNOSIS.** In the majority of cases the result is favorable, it very rarely proving fatal, except in children, and only then by obstructing the respiration, and, at the same time, so seriously interfering with nutrition that the child's strength fails.

#### THE TREATMENT.

The general treatment of the neck muscles should be made, as directed elsewhere. The sides of the neck and under angles of the lower jaw should receive emphasis in treatment, and the manipulation directly on the tonsil, using one or more fingers in the mouth, against the tonsil involved, and the other hand or fingers should be used as a stay from the other side, outside of throat. Persist for several moments in that way, and aim to press the blood out of it into the natural channels (to the veins) after the veins have been freed under the clavicles and in the neck muscles. The exercise of proper judgment in this treatment should reduce these excrescences rapidly, radically. Establish a free circulation in the various channels involved, and a cure is effected. The vaso-motor area deserves attention in all cases where there is fever, and this is the case in the acute form. Take off the pressure, and nature does the rest.

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## DISEASES OF THE LARYNX.

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### ACUTE CATARRHAL LARYNGITIS.

**SYNONYMS.** Catarrhal laryngitis; "sore throat."

**DEFINITION.** An acute catarrhal inflammation of the mucous membrane of the larynx; characterized by feverishness, diminished or suppressed voice, painful deglutition, and more or less difficulty of respiration.

**CAUSES.** Atmospheric changes; cold draughts of air, whether directly inspired or exposure of parts or all of the body to the same. Cold, wet feet; inhalation of irritating vapors, such as gas, smoke, or ammonia; inhalation of dust. Prolonged efforts at public speaking or singing, or the same efforts under difficulties. In children, from violent fits of coughing.



PLATE XXXII.—Manner of Expanding Diaphragm.





**PATHOLOGICAL ANATOMY.** In mild cases there is a transient congestion (hyperaemia) of the mucous membrane over the entire, but more commonly circumscribed portions of the larynx, with more or less swelling and diminished secretion; the mucous membrane soon returns to its normal condition, the secretion being slightly increased.

**SYMPTOMS.** The attack begins rather suddenly with a feeling of dryness, rawness, and tickling, referred to the larynx with the sensation of the presence of a foreign body in the throat, and with hoarseness and a disposition to cough. Deglutition causes pain by the upward movement of the larynx and by the pressure of the food on the larynx as it passes along the gullet. Attempts at speaking are attended with more or less distress, and the larynx is tender on pressure. Coughing, from the onset, of a noisy, harsh, hoarse, or toneless character, and the act of coughing attended with a sensation of scratching in the larynx. The first day or two there is scanty expectoration, but in a short time the secretion is increased, giving the cough a loose character. In the early stages the sputa may be slightly streaked with blood. Rarely a hemorrhage occurs from the mucous membrane of the larynx. The voice is at first decidedly hoarse, soon followed by complete aphonia. The respiration is but slightly, if at all, affected in adults. There may be more or less febrile reaction. In children the onset is with fever, white coated tongue, frequent tense pulse, hot skin and flushed face, embarrassed respiration, the voice hoarse and whispering, with harsh, ringing, croupy cough, and great restlessness. During the night the child is subject to suffocative attacks (laryngismus stridulus).

**Laryngoscopic Appearances.**—These vary with the severity of the attack and the stage of the inspection. In mild cases, at an early period, the mucous membrane presents a bright red appearance. Severe cases present, in addition to the bright redness, the mucous membrane swollen, to such an extent at times as to conceal the vocal cords, they appearing only as slender threads of a reddish tint. At times the mucous membrane presents the appearance of erosions or ulcerations, due to a desquamation of the epithelium.

**DURATION.** Usually about one week; if very severe, two or three weeks may elapse before the larynx returns to its former condition.

**PROGNOSIS.** Simple catarrhal laryngitis never terminates fatally.

## THE TREATMENT.

When it is remembered that "heat expands and cold contracts," we can understand why pathological conditions of this sort exist. The pent-up venous blood decomposes, degenerative tissue metamorphosis takes place, and the difficulty increases until the surrounding structures become involved. The pressure upon the veins on account of muscular contraction closes the outlet, hence all of the fluids that are wont to go into the veins remain stationary, chemical changes occur, and inflammation ensues as a consequence. Nothing has yet been discovered in other systems of treatment but to give medicines and await results, which are more or less uncertain, ineffectual, and the tissue involved continues to break down, and all of the evils enumerated are the consequence. If the pressure is kept off, and removed when on the jugulars, so that an outlet is constantly present, normal conditions are restored or kept up. When it is known that our manipulations are all effectual in producing these results, the prejudice now existing will vanish like frost before a warm sun's rays. Intelligence along these lines is much needed. Results demonstrate the truths attempted to be demonstrated, and as the scales are gradually removed from the perceptive of the physical healers, the philosophy will stand out in its lucidity as clear as the noon-day sun on a cloudless day. The treatment of throat affections, then, consists in removing the obstructions. These are in the veins, due to muscular contracture. Overcome the contracture, then the fluids pursue their normal course, and all is soon righted.

It will be seen that the means of taking off the pressure are scientifically appropriate. Begin by first stretching the muscles of the neck. This has a direct influence in producing peristalsis of all of the closed-up channels therein, whether veins, lymphatics or capillaries, and it also frees communication of nerve influence. With one hand on the occiput, the other under the chin, gently extend the neck, and when the body is seen to respond, endwise, carefully turn the face to about a quarter angle in the direction the fingers of the hand under the occiput point, and use pressure on the sides of the cervicals for a moment; then change hands and repeat the process on the other side of the neck. Then the angles of the jaws should be manipulated, the ears treated as directed elsewhere, the temples, forehead, nose, eyes; then give due attention to the movement of all of the muscles of the throat, according to the general directions, paying especial attention to

the relaxation of contracted muscular fibers. Raise the clavicles so as to remove pressure from the jugulars; raise and expand the ribs and chest muscles, having the patient take deep, full inhalations as each move is directed to this end. The arms become the levers and the fingers the fulcrum, and the body the weight to be moved, to effect the freedom of circulation, and the waste material moves on in normal channels and reaches its destination (the heart and lungs), and, converted into healthy arterial blood, is sent back to again renew healthful structure, where needed.

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### ŒDEMATOUS LARYNGITIS.

SYNONYM. Œdema of the glottis.

DEFINITION. An acute inflammation of the mucous membrane of the larynx and that about the glottis, with an infiltration of the areolar tissues by a serous, sero-purulent, or purulent fluid; characterized by obstructed or stridulous breathing and dysphonia or aphonia.

CAUSES. The result of acute laryngitis; abscess in or about the throat or tonsils; erysipelas of the face; scarlatina; smallpox; Bright's disease; syphilis of the larynx. Rare in children.

PATHOLOGICAL ANATOMY. Infiltration into the loose connective tissue of the ary-epiglottic folds, the glosso-epiglottic ligament, the base of the epiglottis, and the inter-arytenoid space. If the true vocal cords are inflamed, their color changes, and instead of appearing white, glistening, and brilliant, they are dull, grayish-red, or violet-red in patches. If the swelling be the result of purulent infiltration, the parts affected present a deeply congested color, with here and there spots of a yellowish hue.

Serous infiltration, sufficient to cause fatal oedema, disappears with death, leaving but slight traces to account for the formidable symptoms.

SYMPTOMS. The onset is much the same as a simple catarrhal laryngitis, with a gradually increasing impediment to the respiration. The patient experiences the sensation of a foreign body in the throat, and after a short time a difficulty of breathing, which ultimately threatens suffocation. The deglutition is rendered difficult owing to the swelling of the epiglottis; the voice, at first muffled, gradually becomes weaker and weaker, until finally it is almost extinct; the cough at first is dry and harsh, but as the infiltration increases it becomes stridulous and suppressed;



there is no expectoration, except that after great effort to clear the throat a little frothy mucus is raised. The difficulty of respiration, as the disease progresses, becomes greater and greater, and the paroxysms of impending suffocation more frequent. The inspiration is accompanied by a whistling sound characteristic of the narrow condition of the glottis, the patient sits up in bed, his mouth open, gasping for breath, his eyes protruding, the whole body trembling with intense convulsive movements, and after a time a general cyanosis commences, the face assuming a bluish hue, all these symptoms continuing for a few moments, when slight relief occurs, to be again followed by another paroxysm, in one of which, if nature or art does not afford prompt relief, death occurs from asphyxia. A physical examination of the parts may be made by gently pressing the finger into the throat, when the epiglottis may be felt very much thickened, and the ary-epiglottic folds may have attained such tumefaction as to convey to the finger an impression similar to that which is given by touching the tonsils.

**Laryngoscopic Appearance.**—The mucous membrane has a bright red appearance. The epiglottis has the appearance of a semi-transparent roll-like body, or it is often merely erect and tense. It is this condition of the epiglottis which explains the pain and difficulty in deglutition. Rarely the vocal cords are infiltrated.

**DIAGNOSIS.** Any disease which gives rise to dyspnoea may simulate oedematous laryngitis, but the history of the case, together with a laryngoscopic examination, will generally furnish conclusive evidence as to the real nature of the malady.

**PROGNOSIS.** As a rule, unfavorable. If early and vigorous treatment be instituted, recovery is possible, but without it death is the inevitable result, the patient dying asphyxiated. Even when local measures have removed the obstruction to free respiration, the patient is very likely to perish subsequently from exhaustion, or blood poisoning, or from pneumonia or other lung complication. The duration of infiltration of the larynx varies from a few hours to several days.

#### THE TREATMENT.

To relieve this affection, nothing succeeds like the manipulations recommended for Acute Laryngeal Catarrhal Inflammation. The same difficulty exists. The treatment should be made thoroughly, carefully, and the sittings should be repeated frequently.

Whenever there is disease anywhere in the system, it becomes amenable to this treatment, provided the pressure can be taken off; and this means everything in dealing with all pathological conditions, and the thing for the physician to do, in any case, is to apply scientific, effectual means to do so. Results are almost universally satisfactory. The treatment for sore throats, regardless of the name or character, can not be surpassed in satisfactory efficacy, whether a simple ulcer or a malignant desquamation or diphtheritic in character. The restoration of normal circulation always means relief, and in the majority of cases a positive cure. The prognosis of most cases of pathological conditions in this book is given from a medical standpoint, and the superiority of this treatment over the medical, will be apparent as the proper application of Osteopathy is made. The treatment should be made with discretion as to a particular routine course, the operator considering whether the trouble is local, general or specific. Neutralization of poisons must not be lost sight of, especially when introduced into the system from contact or infectious virus; but where poisons generate in the system as a result of decomposition of blood stasis, the remedy is to remove the obstruction.

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### SPASMODIC LARYNGITIS.

**SYNONYMS.** Spasmodic croup; false croup; catarrhal croup; child crowing.

**DEFINITION.** A catarrhal inflammation of the mucous membrane of the larynx, associated with temporary spasmodic contraction of the glottis; characterized by paroxysmal coughing, difficulty of breathing, and attacks of threatening suffocation.

**CAUSES.** Atmospherical changes or "taking cold"; excesses in eating and drinking; excitement; violent emotion, are all given as causes for simple croup.

**PATHOLOGICAL ANATOMY.** Congestion of the mucous membrane of the larynx, with slight swelling and deficient secretion, are the only changes that have thus far been noted.

**SYMPTOMS.** The attack occurs chiefly during the night, the child on retiring having either its usual health, or perhaps being a little feverish. After several hours of sleep the child is suddenly awakened by a paroxysm of suffocation, and a dry, harsh, ringing cough. After half an hour or an hour or two the breathing becomes easier, the cough less "croupy," the skin is covered

with more or less perspiration, and the child falls asleep. The next day there is present a cough of a loose character, the respiration being about normal. If no treatment be instituted, the same phenomena occur on the second night, the child being apparently well during the second day, the cough being less in amount; phenomena of a similar character, but of much less severity, are present the third night, after which the disease usually disappears. If the symptoms of the first paroxysm continue pronounced for two or three days, there is a strong probability that the inflammation may become fibrinous in character, or that true croup may develop.

**DIAGNOSIS.** The symptoms are so characteristic that it seems impossible for the affection to be mistaken for any other disease.

**PROGNOSIS.** Spasmodic or simple croup always terminates favorably.

#### THE TREATMENT.

There is no one affection that so completely demonstrates the principles of this science as its application to spasmodic laryngitis. Pressure producing impediment, which results in congestion of blood and other fluids in the larynx. The contracture of the muscular fibers interfere with the nerve terminals and capillary congestion results. The treatment proper, in this affection, relieves all trouble in a few moments. Simply the usual neck treatment is sufficient. Let the blood pursue its uninterrupted course, and we have no croup. The various remedies recommended by practitioners are not needed in this affection. The most reasonable thing to do outside of Osteopathy is to apply a cold, wet compress. That acts mechanically—squeezes the capillary blood vessels, and the fluids therein are permitted to flow onward. The lymphatics are emptied—the pressure is removed thereby—so a cure results almost immediately. The manipulation of the muscles of the neck and raising the clavicles do the work effectually in a few moments.

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#### CROUPOUS LARYNGITIS.

**SYNONYMS.** Membranous croup; true croup.

**DEFINITION.** An acute inflammation of the mucous membrane of the larynx, attended with the exudation of a tough secretion—the false membrane—and the occurrence of spasm of the



glottis; characterized by febrile reaction, frequent ringing cough, dyspnoea, with loud inspiratory sound, and altered or extinct voice, showing a strong tendency toward death by asphyxia.

CAUSES. A disease of childhood, most common in strong, vigorous, well-nourished males. Certain families present a strong hereditary tendency. Most common during a humid winter.

PATHOLOGICAL ANATOMY. Intense hyperaemia of the mucous membrane of the larynx, associated with swelling, oedema, and marked redness. There soon appears on the surface of the mucous membrane a grayish pellicle, rapidly coalescing and becoming thicker—the opaque, false membrane—which differs in extent, thickness, and adhesiveness in different portions of the larynx. In all cases the false membrane is found on the vocal cords and inner surface of the epiglottis. The first exudation (membrane) softens by the serum which is exuded, and is then mechanically dislodged by acts of coughing or vomiting, but is followed by successive deposits upon the mucous membrane. When the false membrane is detached the mucous membrane of the larynx is found unaffected, so far as the loss of structure is concerned. Several successive crops of membrane may occur after the detachment, or it may entirely cease to form after the removal of the first exudation.

On microscopical examination the false membrane is found to be composed of a fine network of fibrillae, holding in their interstices leucocytes of an albuminous or fibrinous nature. The false membrane may extend into the pharynx, but especially is it liable to extend into the trachea and bronchial tubes, and, as the inflammation extends downward, the character of the exudation changes from fibrinous to muco-purulent.

SYMPTOMS. The onset of "true croup" is either sudden, by an attack of spasmodic croup, or it is gradual, as an acute catarrh of the larynx, rapidly increasing in severity, with a feeling of heat in the throat, huskiness of the voice, harsh cough, fever, and thirst, the hoarseness soon becoming marked, and the cough having a metallic, "croupy" character, rapidly changing to a stridulous, husky sound; every few minutes the child takes a sudden, deep, stridulous inspiration, the voice becoming more and more husky. Difficulty of breathing now follows, the child is unable to lie down, or if, exhausted by the efforts at inspiration, it is quiet for a moment, it soon starts up in fright, breathing more heavily, with a shrill, whistling inspiration. Soon, from the narrowing of the glottis, from the presence of the membrane, the



expiration becomes difficult and noisy, and suffocation seems imminent from the paroxysmal attacks of spasm of the glottis, the child tosses wildly about, tears at its throat, as if to remove some obstacle, the face becoming cyanosed, the alae of the nose working rapidly, the mouth wide open, the inspiratory efforts gasping, the body covered with a profuse sweat, and death seems imminent, when suddenly the spasm is relaxed, air enters the chest, the breathing becomes somewhat easier, and the child, exhausted and partially stupefied, drops into a fitful sleep of a few moments' duration.

The suffocative attacks return at short intervals, or there occur decided remissions between them, considerable portions of the false membrane being expelled, allowing the child to fall into a refreshing sleep.

In those cases which tend to a favorable termination, the appearance of improvement noted between the suffocative attacks is maintained, the paroxysms of suffocation becoming less frequent, expectoration of membrane more marked, the difficulty of breathing lessens, the cough loosening, the voice gradually returning, the fever, which has been more or less high during the attack, disappearing.

If instead of improvement, the case tends toward a fatal termination, the suffocative attacks become more frequent, expectoration is absent, the voice and cough inaudible, although the efforts at speaking and coughing are visible, the difficulty of breathing continues, the respirations becoming more frequent and shallow, but without whistling and stridor, cyanosis deepens, the countenance has an indifferent, drowsy, and stupid look, the eyes dull and nearly closed, with symptoms of depression, the pulse rapid and weak, the surface covered with a cold, clammy sweat, the extremities cold, stupor and insensibility more marked, the child dying of carbonic acid poisoning or asphyxia.

**DURATION.** The duration of true croup is about one week, rarely continuing ten days.

**DIAGNOSIS.** Œdema of the glottis might be mistaken for croup until the period of the formation of the characteristic membrane. The chief points of distinction from the onset are, however, absence of fever, paroxysmal attacks of difficult respiration, followed by a complete return to the normal condition. Œdema of the glottis is rare in childhood.



PLATE XXXIII.—Showing Manner of Liver Treatment.



The following are the chief points of difference between croup and laryngeal diphtheria:

## CROUP.

A local disease.  
 Begins in trachea and extends up.  
 Exudation never cutaneous.  
 No pain in swallowing.  
 No swelling in submaxillary and lymphatic glands.  
 Cough always present and often reduced to a mere whistle with a peculiar metallic ring.  
 Not traceable to bad drainage.  
 Seldom occurs in adults.  
 Neither contagious nor infectious.

A sthenic disease.  
 Membrane does not extend to nares.

No symptoms of septicaemia.  
 No albuminuria.  
 Neither attended with nor followed by paralysis.  
 Death seldom caused by syncope.  
 Death due to suffocation.

Absence of a specific germ.

## DIPHTHERIA.

A constitutional disease.  
 Begins at tonsils and extends down,  
 Exudation often cutaneous.  
 Often severe pain in swallowing.  
 Swelling in submaxillary and lymphatic glands.  
 Seldom much cough, and then only hoarse.

Often traceable to bad drainage.  
 Often occurs in adults.  
 Both contagious and infectious, both before and after death.  
 An asthenic disease.  
 Often extends to nares and many other parts.  
 Septicaemia generally present.  
 Albuminuria frequent.  
 Paralysis not uncommon.

Death from syncope common.  
 Death frequently results from other causes.  
 Presence of the Klebs-Loeffler bacillus.

**PROGNOSIS.** A very fatal disease. The danger increases in proportion to the age and feebleness of the child.

Unfavorable symptoms are: Loud, stridulous inspiratory and expiratory sounds, laborious and prolonged expiration, depression of the base of the thorax during inspiration, whispering voice or complete aphonia, congestion of the face and neck, stupor, weak, rapid, and irregular pulse, cold extremities, and a cold, clammy perspiration.

Favorable symptoms are: Expectoration of false membrane, decrease of the stridulous respiration, voice changing from whispering to hoarseness, looseness of the cough, moderation of the fever, and an improvement in the general condition.

## THE TREATMENT.

A thorough general treatment of the neck is first to be instituted, so as to take off all the pressure in consequence of muscular contraction. To take off the pressure is essential. The exudation that is filling up the trachea is due to venous obstruction in the mucous membrane. This obstruction is primarily in the large veins that empty their contents (or should) into the jugulars. The clavicles should receive our attention early in the



manipulatory process. Take off the pressure at the inner ends of the clavicles—let the channel be clear here; then manipulate all of the muscles of the neck, gently stretch the neck; use stimulation with the fingers on the vaso-motor area, free the muscles on the sides and front of the neck, and especially close up under the lower jaw, as shown elsewhere in plates. The mucous membrane of the mouth and throat should be treated with the finger of the operator, and by a few moments' persistency in the treatment the false membrane is loosened, and easily withdrawn. After it is removed, the patient becomes easy at once, and the treatment, gently applied, should be made every few hours until all of the inflammatory process ceases. The clavicles will be found too low, hence attention to them should receive due notice. Raise the chest and ribs and muscles strongly, having the patient take a deep inspiration, if possible, each time the arm is raised, and the pressure made down the sides of vertebrae, as low as the eighth dorsal vertebra. Vibratory manipulations should be made with the hand applied to either side of the neck and over the trachea, which loosens the false membrane in a short time. Both arms should be strongly extended above the head, and while the fingers are pressing on either side of the spinous processes of the lower cervical and upper dorsal vertebrae, the arms are to be gently pressed downward and backward, patient either in a recumbent or sitting posture. The object of this move is to expand the chest, exhale carbonic oxide and receive oxygen, and relieve the venous congestion of the intercostals and the venae azygos major and minor. The vibratory movements on the neck and bronchi for two to five minutes aid in disseminating the capillary congestion, the lymphatic secretion, and stimulating the terminal nerve filaments and relieving the pressure. These treatments are to be repeated at intervals of four to six hours until recovery takes place.

It is better for the patient not to eat anything until the tongue clears off and the throat is restored, and a natural appetite returns. The salivary glands can not secrete the normal secretion essential to mixture with the food, to promote digestion. Then why tax the system unnecessarily? It is better not to feed the patient for the reasons given.

Allow me to call attention right here to the fact that strong vibration upward and outward over the upper end of the sternum affords relief, in that it empties the thymus gland, which will be found engorged in all cases of croup, diphtheria, scarlet fever and

throat diseases, in persons under twelve years of age. Atmospheric and telluric changes affect this gland. The east wind influences this gland as well as yeast, deleteriously—congesting the gland, and so affecting the yeast that it won't rise while the wind is in that quarter.

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### LARYNGISMUS STRIDULUS.

**SYNONYMS.** Spasm of the glottis; pseudo-croup; Millar's asthma; thymic asthma; "Kopp's asthma"; tetany.

**DEFINITION.** A spasm of the muscles of the larynx innervated by the inferior or recurrent laryngeal nerves; characterized by a sudden development of dyspnoea and the appearance of deficient oxygenation of the blood. MacKenzie describes it as "a form of convulsion occurring in ill-nourished infants, characterized by spasmodic action of the abductors of the vocal cords, and in severe cases by spasm of the diaphragm and intercostal muscles."

**CAUSES.** Most common in children, the result of teething, laryngitis, indigestion, scrofula, or other cachexiae. Attacks in adults are not uncommon. It is often hereditary.

**PATHOLOGICAL ANATOMY.** Death the result of spasm of the glottis is such a very rare occurrence that the changes in the larynx are illy understood. The mechanism consists in an irritation of the superior laryngeal nerve—the afferent nerve—whose function it is to supply the mucous lining of the larynx with sensibility, whence is reflected through the inferior laryngeal nerve—the efferent nerve—the motor influence resulting in the spasm of laryngeal muscles.

**SYMPTOMS.** The spasms of the laryngeal muscles is of sudden onset, and usually after nightfall. The child may have been in perfect health, to all appearances, on retiring, or it may have shown symptoms of catarrh of the upper air passages, or been suffering from gastro-intestinal or dental irritation. The child awakes suddenly, coughing in a metallic, resonant tone—the croupy cough—and with great dyspnoea, with loud, crowing, stridulous inspirations, the result of narrowing of the larynx from spasm, with wheezy, stridulous expirations. The entrance of air is so greatly obstructed that all the accessory muscles of respiration are called into use; the lips and finger nails become blue, the surface cold, the countenance anxious, and the inferior portion of

the chest is drawn in, instead of being expanded, during inspiration. General convulsions occur at times, during a paroxysm, also strabismus, and involuntary discharge of the faeces and the urine. The paroxysm continues from half an hour to an hour or more, to return after a few hours' sleep or during the following night; the cough, during the day, having the croupy character.

**DIAGNOSIS.** The non-febrile and distinctly intermittent nature of the affection differentiates it from croup, and its own distinctive characters, from all other diseases. The view is gaining that it is a variety of tetany.

**PROGNOSIS.** Favorable. Death from suffocation during the paroxysm may occur in very young children, but it is certainly a very rare termination.

#### THE TREATMENT.

The indications are plain. The back of the neck demands our first attention, then the vaso-motor nerve area, to regulate the heart's action and the sides of the neck and clavicles, to relieve the phrenic nerve. This, with freedom of the chest muscles and stretching the arms over the head, and treating down the spine and overcoming nerve pressure at the lower outlets of the body, together with repeated general treatment, assures prompt relief. The recurrent laryngeal filaments, together with the spinal accessory nerves, do much to relieve immediate paroxysm and prevent its recurrence.

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### TUBERCULOUS LARYNGITIS.

**SYNONYMS.** Laryngeal phthisis; throat consumption.

**DEFINITION.** An inflammation, tending to ulceration, of the tissues of the larynx, of tuberculous origin; characterized by pain on deglutition, cough, weakness of voice, and progressive emaciation, associated with hectic fever.

**CAUSES.** An infection of the larynx with the bacillus tuberculosis, either from the inspired air or by the sputum. A depressed state of the system is essential for the action of the bacilli.

**PATHOLOGICAL ANATOMY.** It is well to remember that all chronic inflammations of the larynx associated with pulmonary tuberculosis are not tubercular. Begins with redness of the mucous membrane, showing scattered tubercles. The tubercles



show a strong tendency to cluster, then soften, leaving shallow, irregular ulcers. The ulcers are covered with a grayish exudate. The mucous tissue round about the ulcers is thickened. The ulcers may, and generally do, erode the true vocal cords, often entirely destroying them. The ulcers slowly extend in all directions, destroying the tissues attacked. The epiglottis may be entirely destroyed.

**SYMPTOMS.** Usually develops secondary to pulmonary symptoms; rarely it may occur as a primary disease, to be followed with tuberculosis of the lungs. The first symptom is a change in the voice—huskiness; this, associated with symptoms of ill health, is always a warning to the physician. The husky voice may proceed until it is but a painful whisper. Cough of an irritating, painful character, associated with slight expectoration. Painful and difficult deglutition (dysphagia) is a very constant and distressing symptom. There is the remitting fever so characteristic of tuberculosis, with night sweats, loss of appetite, loss of flesh, and insomnia.

Laryngoscopic examination reveals the characteristic broad, shallow, irregular, grayish ulcers, with the thickened surrounding mucous membrane. The vocal cords show infiltration and thickening or ulceration.

**DIAGNOSIS.** To discriminate from non-tubercular laryngitis, examine the sputum, and if the specific bacilli are found, the diagnosis is conclusive.

**PROGNOSIS.** Unfavorable, so considered.

#### THE TREATMENT.

Although the medicine administrators prognose this disease unfavorable, there is much that may be done to ameliorate the sufferings of the patient, and many times effect a permanent cure. The impediments in and to the circulation of the blood, the interference in respiration (a process essential to the purification of the blood) and in the throat and chest muscles, can be removed, and the congestion relieved in the mucous membrane. General dyscrasia due to and resulting from a tuberculous diathesis, demands perfect freedom of the capillary circulation everywhere, and at all times, to prevent retrograde tissue metamorphosis, and this goes farther to destroy the "bacilli tuberculosis," than all the Tuberculin ever introduced. Many cases, pronounced tuberculous, properly treated osteopathically, would result in immunity from that dread disease that now slays its millions.

The more this method is studied, the stronger will its influ-



ence be felt and the more appreciated by every one. While nothing but the "crack of doom" will arouse some from their profound slumbers, there will eventually be such a mighty avalanche of testimony presented that belief will be the result. There is a philosophy in this method that seems to be irresistibly impressive to rational minds.

Special attention should be given to the removal of the pressure in the muscles of the neck. The throat should be thoroughly manipulated and the clavicles raised, the arms used as levers to liberate all "chest contraction," giving room for the lungs to expand—full, deep inspirations enjoined several times each day; vibratory manipulations along the carotid sheath, stimulating the cervical and spinal nerves, removing all irritations from the sphincter muscles; moderate out-door exercise, due regard to cleanliness of the body, frequent sun-baths; sleep in airy apartments and let all worry and fretting be abandoned. Live on that sort of food that will assimilate, eat slowly and thoroughly masticate all food, and give the stomach a rest from eating one meal, preferably breakfast, and with a general Osteopathic, mild treatment, two or three times a week, great comfort may be expected, and many a case saved from a premature funeral. If the uvula is elongated, have it clipped off, so as to remove that source of pharyngeal irritation. Aim to include in the clipping of the uvula a small portion of the muscle, then the elongation will not recur any more. This is essential, to insure relief from further irritation. Many are excised without this precaution, and no good results. Remember this.

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## DISEASES OF BRONCHIAL TUBES.

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### ACUTE BRONCHITIS.

**SYNONYMS.** Bronchial catarrh; acute bronchial catarrh; "cold on the chest."

**DEFINITION.** An acute catarrhal inflammation of the bronchial tubes of the larger, middle, and third size; characterized by fever, sub-sternal pain, a feeling of thoracic constriction, oppression in breathing, and at first scanty, followed by more or less profuse expectoration.

**CAUSES.** Most frequent in childhood, especially during the period of dentition, when there exists a strong tendency to catarrh of the mucous membranes in general and of the bronchi in particular. In old age the predisposition again returns. Inhalations of irritants, such as dust, smoke, and air too hot or too cold. More common in climates characterized by considerable moisture of the atmosphere combined with a low temperature, and especially where there are sudden and marked variations.

**PATHOLOGICAL ANATOMY.** Hyperaemia of the mucous membrane of the bronchial tubes, manifested by a diffused redness, swelling, oedema, and diminished secretion; this is followed by an increased secretion and overgrowth and desquamation of the epithelial cells, together with a copious generation of young cells, the expectoration then becoming of a yellowish color (muco-purulent). As a result of the hyperaemia, rupture of the capillaries of the mucous membrane frequently occurs, when the slight expectoration of the first stage is streaked with blood.

In cases of bronchitis following the exanthemata, or in scrofulous patients, the bronchial glands participate in the inflammation, they becoming hyperaemic, swollen, and filled with secretion, and not infrequently the glandular elements undergo a hyperplasia, and finally the "cheesy" degeneration.

**SYMPTOMS.** The invasion is usually characterized by the occurrence of either nasal or laryngeal catarrh, or both, the patient feeling chilly, followed by flushes of heat, the limbs, joints, and even the body, are affected with pain of an aching, contused character, and with a sense of fatigue and want of energy; there may be a furred tongue, anorexia, and constipation. In nervous, irritable persons, and in children, there may be slight delirium, and often in very young children, especially during the period of dentition, convulsions may usher in an attack. After a day or two of these initiatory symptoms, those characteristic of bronchial catarrh develop. Pain is experienced beneath the sternum, especially toward its upper part, of a raw, burning, or tearing character, aggravated by a deep inspiration or by coughing; the pain also radiates toward the sides, following the course of the primary bronchial tubes. Tenderness over the sternum is often experienced. Cough from the onset, at first in paroxysms of a hard, dry character, changing as the disease progresses, and becoming looser, followed by free expectoration. The expectoration at first is small in quantity, almost transparent, frothy, and

having a salty taste, often streaked with blood. As the disease progresses, it becomes more abundant, of a yellowish or a greenish-yellow color, and of a tenacious consistency. There are present slight fever, hot, dry skin, frequent pulse, loss of appetite, moderate thirst, and constipation. A feeling of languor and weariness, and often considerable depression, quite out of proportion to the febrile state, are not infrequent.

**PERCUSSION.** Normal, except in those rare cases in which the bronchial glands are involved, when irregular spots of dullness can be developed.

**AUSCULTATION.** First stage: The bronchial membrane being swollen and dry, the respiratory murmur is harsh or vesiculo-bronchial in character, associated with diffused sonorous and sibilant rales. Second stage: The secretion from the bronchial mucous membrane being increased, the respiratory murmur is less harsh in character, but is associated with large and small moist or bubbling rales.

**DIAGNOSIS.** The points of resemblance and difference between acute bronchitis and other diseases of the chest will be pointed out when those affections are described. The association of bronchitis with other diseases must not be forgotten.

**PROGNOSIS.** Acute bronchitis of the larger tubes usually terminates in complete resolution within two weeks. In children and in the aged, the course is more protracted, and the symptoms more severe, but recovery is the rule. Very aged and feeble persons may succumb, but it is rare.

#### THE TREATMENT.

The patient lying on the back, begin treatment by placing the fingers near together on either side of the cervical spines; pull gently and at the same time bend the neck forward, the head backward, downward, and press firmly with the ends of the fingers on the vaso-motor area, and observe to do this without pain to the patient. While the patient is thus lying on the back, place one hand at the occiput and the other under the chin, make gentle extension, and while extended, rotate the head to one side about one-fourth of the circle, then, while extended, turn the head straight; let the head rest on the table or chair, and change the hands, and repeat the same move in the same way, observing to press with the ends of the fingers on the neck just behind and below the mastoid process as the head is turned in that direction; then have the patient open the mouth as the finger on either side presses upward in the area of the ears, then vibrate in the tem-



PLATE XXXIV.—Manipulation of Bowels for Constipation.





poral region, on the forehead, around the eyes, nose and face, removing all and every vestige of congestion, then dilate the nares; then manipulate the muscles of the neck thoroughly, causing the patient to inhale full inspirations as movements are made. The essential thing to do in this affection is to afford sufficient room in the chest to fully expand the lungs. The pressure of the fingers on the vaso-motor area is necessary to reduce the fever and regulate arterial blood circulation. These treatments should be very gentle, especially with children, as repetitions will be necessary in many cases, and that for some days.

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### CAPILLARY BRONCHITIS.

**SYNONYMS.** Broncho-pneumonia (?); "suffocative catarrh."

**DEFINITION.** An acute catarrhal inflammation of the mucous membrane of the terminal bronchial tubes, or bronchioles; characterized by fever, impeded and increased respiration, impeded circulation, slight cough and scanty expectoration, and symptoms of non-aeration of the blood.

**CAUSES.** Most common in childhood, following exposure to cold or sudden changes of temperature; occurs also in the aged, and also complicates measles, whooping cough, or any of the debilitating diseases.

**PATHOLOGICAL ANATOMY.** Hyperaemia, redness and swelling of the lining membrane of the bronchioles, with the exudation of a tough, tenacious secretion. In those cases in which the air cells are not involved in the inflammatory changes, the air passes, during the act of inspiration, through the secretion, blocking the smaller tubes, but is prevented from escaping during the act of expiration, the secretion in the smaller tubes acting as a valve; the result is distention of numerous vesicles, producing a circumscribed or diffused functional emphysema. If the secretion produces complete closure of any of the smaller tubes, the air previously drawn into the vesicles will be absorbed, causing collapse (atelectasis).

If the inflammation extends to the alveoli of the lungs, it produces the condition known as broncho-pneumonia, a frequent complication in children and feeble elderly people; it is most commonly lobular in character, whence the term "lobular pneumonia."

**SYMPTOMS.** Usually preceded by more or less ordinary

bronchitis, followed by rise of temperature, 102 degrees to 103 degrees F., increased pulse, difficult and increased respiration, numbering forty, fifty or sixty in the minute, with paroxysms in which the dyspnoea is markedly aggravated, when cyanosis rapidly develops; the tongue is coated, bowels costive, appetite impaired, restlessness and headache.

The circulation through the lungs is impeded by the dyspnoea, the pulse becomes feeble and flickering, and there results general congestion of the venous system, the countenance becomes livid, the lips and nails blue, the surface cold, and often covered with a clammy perspiration, the mind dull, and in children stupor and convulsions rapidly supervene, the result of the non-aeration of the blood. The cough is slight, but of a suppressed character, the expectoration scanty, the patient usually swallowing the sputum. When cyanosis occurs, the cough may almost entirely cease; expectoration also ceases, death soon following from apnoea and depression.

**PERCUSSION.** Normal, except over those portions of the lungs (a bilateral disease) which are in a condition of collapse, when dullness rapidly develops and may as rapidly disappear, changing to other portions of the lungs—shifting dullness.

**AUSCULTATION.** First stage, a feeble, but high-pitched, respiratory murmur, becomes less distinct and harsh as the disease progresses. The rales in the first stage are fine whistling, sibilant, changing in the second stage to fine bubbling or subcrepitant rales. The respiratory murmur is absent over the dull area.

**DIAGNOSIS.** There is one point characteristic of capillary bronchitis—it is a general or bilateral disease. Capillary bronchitis is often mistaken for true catarrhal pneumonia, the points of distinction between which will be pointed out when discussing the latter affection.

**PROGNOSIS.** In children, on account of their inability to expectorate, which tends to rapid collapse of the lungs, and in the aged, the prognosis is most grave. In the strong and vigorous, recovery follows prompt and energetic treatment.

#### THE TREATMENT.

Having a complete description of the affection, its peculiar characteristics, and a typical case before us, we ought to be able to see what to do for it. The nerves that accompany the blood vessels come from the vagi and sympathetic, and these are pressed upon by the contracted muscular fibers at the back of, and in front

of the neck. Interference in their action produces capillary stasis, an interruption of lymph circulation, and congestion of the bronchioles is the consequence. The indications are easily seen. Interference in the motor action of the walls of the alveoli, separation of the sympathetic and motor footlets, mean inactivity (for the want of communication), and blood stasis becomes inevitable. Our course to pursue in such cases is: Take off the pressure. We do this by stimulating the vaso-motor area, and the sides of the neck, raising the clavicles, chest walls, relieving the engorgement of intercostales, stretching the neck and vibrating the muscles of the neck and over the upper end of the sternum, and freeing the jugular veins, so as to let venous blood return to the lungs through the heart as fast as nature demands. The livid countenance and lips, blue nails, etc., show that circulation of the venous blood is impeded somewhere; and that is in all of the capillaries in the body—due to pressure on motor area, by muscular contraction. This seems to a medicine prescriber a strange sort of affairs; but it is nevertheless true, and our manipulations remedy the whole difficulty very readily and satisfactorily.

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### FIBRINOUS BRONCHITIS.

SYNONYMS. Membranous bronchitis; plastic bronchitis; diphtheritic bronchitis; croupous bronchitis.

DEFINITION. An acute inflammation of the mucous membrane of the larger and middle-sized bronchial tubes, attended with an exudation, forming a membraniform layer, which is closely adherent to the mucous surface; characterized by febrile reaction, cough, difficult breathing, scanty expectoration, followed by the expulsion of the false membrane in the form of patches or casts.

CAUSES. Pressure; associated with membranous laryngitis from extension downward; asthma; emphysema; phthisis; frequently result of exposure to cold or damp, in those of feeble health or in tuberculosis (?) constitutions.

PATHOLOGICAL ANATOMY. Hyperaemia of the mucous membrane of the bronchial tubes, associated with swelling and œdema, during which the surface is covered with a whitish or grayish-white, firmly adherent, membranous deposit, cemented together by a coagulable exudation, and prolonged by rootlets from its under surface into the bronchial follicles, which sooner



or later is loosened and detached by suppurative process, and is expectorated after a violent fit of coughing or vomiting. When expectorated, the false membrane, as it has been termed, has either the form of patches or is thrown off entire from the bronchial tube, and may be found to consist of casts representing more or less of the bronchial subdivisions, and presenting an appearance not unlike "boiled macaroni."

On microscopical examination, the detached membrane presents fibrillae which characterize fibrin or lymph in other situations, and if placed in a solution of acetic acid, it becomes greatly swollen, while ordinary mucus contracts and becomes more dense if added to the same solution.

**SYMPTOMS.** There are no symptoms or signs by means of which this variety of bronchitis can be distinguished from ordinary catarrhal bronchitis, prior to the expectoration of the false membrane. Expectoration is preceded and accompanied by violent paroxysms of coughing, and after more or less of the membrane has been raised a muco-purulent expectoration, streaked with blood, may be present for several days.

**DURATION.** The inflammation may be either acute, sub-acute, or chronic, expectoration of patches or strips of the membrane being repeated at intervals of days, weeks, months, or even years.

**PROGNOSIS.** In adults, favorable, if not associated with other grave affections, such as phthisis, pneumonia, emphysema. In young children it may cause obstruction to the respiration, and not unfrequently proves fatal.

#### THE TREATMENT.

The cause, according to Osteopathy, being pressure, resulting in capillary congestion, and that seemingly at a particular stage and in a particular tissue, the effects manifest themselves in a fibrinous exudation, a membranous deposit. The only rational indication is to take off the pressure producing the difficulty. In all throat affections there will be found a difficulty in the vasomotor area, and in the depressed condition of the clavicles, hence these demand our first attention. The former should be held for two to five minutes, to regulate the heart's action, and arteriole and capillary regularity, then a thorough and careful manipulation should be given to every organ and tissue involved, the treatment being especially directed to the relief of the large veins, then the lymphatics; the removal of the pressure from the nervous system supplying the parts affected. The chest muscles

should be fully expanded by the means used and recommended elsewhere in such cases, raising the arms, using pressure all along down the dorsal region as the arm is raised and lowered. Due attention must be paid to the throat, high up, under the lower jaw, vibrating over the glands, the sides of and front of the neck along carotid sheaths, stimulating the pneumogastric and phrenic nerves, stretching the neck in a gentle manner, and rotating the head carefully, treating the mucous membrane of the mouth and throat each time the general treatment is given, which should be at least once a day—more if the case needs it.

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### CHRONIC BRONCHITIS.

**SYNONYMS.** Chronic bronchial catarrh; winter cough; secondary bronchitis.

**DEFINITION.** A chronic inflammation of the mucous membrane of the larger and middle-sized bronchial tubes; characterized by cough and more or less profuse expectoration, plus, in many cases, the symptoms of emphysema of the lungs, which is a frequent complication. Chronic bronchitis may be either primary or secondary.

**CAUSES.** Primary, exposure to wet or cold, or the repeated inhalation of dust, vapors, or other irritants. Secondary, gout, rheumatism, syphilis, cardiac, renal, or pulmonary diseases, or alcoholism.

**VARIETIES.** 1. Mucous catarrh, associated with moderate expectoration. 2. Bronchorrhoea, profuse expectoration. 3. Dry catarrh, scanty expectoration. 4. Fetid bronchitis. 5. Bronchiectasis, or dilatation of the bronchi.

**PATHOLOGICAL ANATOMY.** The mucous membrane of the bronchial tube is discolored, being of a more or less dull red, often of a deeply venous hue, mingled with a grayish or brownish color. These changes may be either in patches or extensively diffused. The vessels of the mucous membrane are dilated. The mucous membrane is thickened, resulting in the reduction in the caliber of the tube and a roughening of its internal surface. The submucous tissue becomes infiltrated, contracted, and indurated. The elastic and muscular coats of the tubes become hypertrophied, lose their elasticity, and the cartilages become the seat of calcareous deposits. As the result of the loss of elasticity and muscular tone of the tubes they become irregularly dilated, "bronchial dilatation." The dilatations may be uniform in char-

acter, resembling somewhat the fingers of a glove, or they may be sacculated or globular, forming actual cavities in the bronchial structure.

In the mucous variety the secretion consists of young cells and mucous corpuscles, having a yellowish color; in the dry variety the "catarrhe sec" of Laennec, or "dry bronchial irritation," the secretion is scanty, tough, semi-transparent, and occurs in defined globular masses; in bronchorrhoea, which is usually associated with bronchial dilatation, the secretion is abundant, greenish yellow in color, and often fetid.

The majority of cases of chronic bronchitis have associated chronic gastric catarrh.

**SYMPTOMS.** The most characteristic symptoms of chronic bronchitis are the cough and expectoration. The cough occurs at all hours, but is more severe at night and early in the morning. The cough is not always present. It disappears almost altogether for a time, and then reappears, continuing thus for years. Coated tongue, disagreeable taste, loss of appetite, impaired digestion, with eructations of gases, are present in many cases, due to the chronic gastric catarrh. Unless associated with other diseases, the general health suffers but little, if at all, constitutional symptoms being present only during acute exacerbations.

Mucous catarrh, or, from its occurring most commonly during the winter months, "winter cough," is characterized by paroxysms of cough, more or less violent, followed by the expectoration of a yellowish mucus.

Dry catarrh is characterized by a harsh cough, a feeling of soreness or rawness under the sternum, and the expectoration of small globular masses; this variety occurs with emphysema, gout, rheumatism, and asthma.

Bronchorrhoea, which is associated with bronchial dilatation, and most common in the elderly, is characterized by paroxysms of severe coughing, followed by the copious expectoration of greenish-yellow, often fetid, mucus; the amount expectorated often amounts to four or five pints in the twenty-four hours.

Fetid bronchitis, often associated with bronchial dilatation, has an excessively fetid odor of the breath and expectoration. The decomposition of the secretion may cause gangrene of the bronchial mucous membrane, and even of the lung structure.

**PERCUSSION.** Unless complicated with other affections, normal; if bronchial dilatation occur, there are diffused spots of the tympanitic or amphoric percussion sound, the physical condition



being a circumscribed cavity containing air and communicating with a bronchial tube.

**AUSCULTATION.** Harsh or vesiculo-bronchial respiration, associated with more or less profuse, sonorous, sibilant, and large and small bubbling rales; in bronchial dilatation, in addition to the harsh respiration, is found broncho-cavernous breathing, with large and small gurgling rales. If emphysema complicate chronic bronchitis, the physical signs are somewhat modified, and will be pointed out when discussing that affection.

**DIAGNOSIS.** Make it a rule to always examine the urine in case of cough, and particularly in case of chronic bronchitis, as this latter disease is one of the most common complications of Bright's disease. Incipient phthisis is often confounded with chronic bronchitis. The diagnosis is not always easy. The physical signs of chronic bronchitis are more or less diffused through both lungs, and not, as a rule, associated with failure of the general health; while in phthisis, from the onset, there is a failing health, with a concentration of the physical signs to the apices. The discovery of the bacillus determines the diagnosis.

**PROGNOSIS.** It unassociated with disease of the lungs, heart, or kidneys, chronic bronchitis is never dangerous to life, although the symptoms are present, more or less, continually, and aggravated upon the least exposure. Rarely is a cure recorded. If associated with phthisis, emphysema, diseases of the heart or of the kidneys, the prognosis is governed by these affections. In turn, it is to be remembered that chronic bronchial catarrh may lead to emphysema of the lungs, asthma, or to cardiac dilatation.

#### THE TREATMENT.

The treatment for this affection should consist of a general, all-over treatment, to relieve obstructions in the circulation of the venous blood everywhere, and a special, careful manipulation directed to the throat and upper part of the chest. The nerves distributed along the bronchioles must have the pressure removed and that is best accomplished by the neck treatment, using all of the means recommended therefor, which, in the best judgment of the operator, seemeth proper. The jugular obstruction, caused by depressed clavicles, the chest contraction, and pressure upon the phrenics and the nerves that are distributed to the chest muscles, are to be removed, the patient instructed how to inflate the lungs, to oxygenate the blood and to maintain an erect attitude of body, sitting erect, breathing pure air, and to especially care for the digestive organs, the glandular system, the skin, kidneys and liver.



The proper circulation of the blood can only be maintained by due attention to the lungs. There must be all the room allotted therefor, by a complete expansion of the chest, and this can not be done in any other manner than nature has provided—and that is through the normal action of the chest muscles. These directions seem adequate for the purpose of understanding what should be done in all cases.

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### ASTHMA.

**SYNONYMS.** Bronchial asthma; spasmodic asthma.

**DEFINITION.** A paroxysmal, spasmodic contraction of the muscular layer surrounding the smaller bronchial tubes, and perhaps associated with a tonic spasm of the diaphragm and more or less bronchial catarrh; characterized by spasmodic attacks of distressing expiratory dyspnoea, continuing for several hours, days, or weeks.

**CAUSES.** A true neurosis of the respiratory apparatus. The result of peripheral or local disturbances in the nervous system. Chiefly hereditary. A family history of asthma, chorea, or epilepsy. It sometimes is of reflex origin, starting from diseases of the nasal mucous membrane, explaining the attacks due to inhalation of various substances, as ipecac, turpentine, or irritating dusts. Climate. Some attacks may be due to a peculiar and characteristic disease of the bronchial mucous membrane—an “asthmatic bronchiolitis.” Asthma is more common in men than in women; in childhood and young adults than those of middle life and old age; in the well-to-do and wealthy than in the poor.

**SYMPTOMS.** The onset of a first attack of asthma is abrupt and sudden, the succeeding attacks being preceded by prodromes, which the individual rapidly learns to appreciate, to-wit: coryza, bronchial irritation, thoracic constriction, marked dyspepsia, or the scanty passage of pale, limpid urine, the “hysterical urine.”

The paroxysm begins, in the majority of instances, in the early morning hours or during the afternoon, with a feeling of anguish and constriction in the chest and an intense desire for air. The breathing is accompanied with loud wheezing, the face is flushed, at times even cyanosed, and bathed in perspiration, the eyes staring, the eyeballs protrude, and the muscles of the neck become prominent as they aid in the effort for air. The dyspnoea soon becomes so severe that the inspiration is but a gasp, the lips are pallid, cyanosis deepens, and the patient feels as if



PLATE XXXV.—Showing the Percussion of Bowels.



death were impending. Owing to the tonic contraction of the smaller bronchi the air drawn into the alveoli escapes imperfectly, resulting in the expiratory dyspnœa, the emphysematous chest, and the lowered position of the diaphragm. After some minutes or hours the respiration becomes easier, the air in the lungs changes, the cyanosis disappears, and gradually the paroxysm ceases, the patient feeling exhausted, and the chest fatigued. During the paroxysm there is a short, dry cough, becoming looser as the attack subsides. The sputum of asthma is unique. Early in the paroxysm it is raised with difficulty, and is in the form of rounded gelatinous masses ("perles" of Laennec). If these pellets be carefully examined they will be found to consist of moulds of the smaller bronchi, and, under the microscope, show Leyden's crystals and Curschmann's spirals. After a day or two the sputum becomes muco-purulent, and the spirals and crystals are absent.

The duration of an attack varies from one to many hours, or even days. Instead of single paroxysms, slight remissions may occur at intervals of one, two, or three hours, to be followed by exacerbations lasting from four to six hours, continuing for a week or two, preventing the patient lying down or taking food.

**PERCUSSION.** During the paroxysm, hyper-resonance over both lungs, termed vesiculo-tympanitic, the "band-box tone" of Bamberger, due to the retained air in the alveoli.

**AUSCULTATION.** First stage feeble or absent vesicular murmur, with prolonged expiration associated with loud wheezing, whistling, sibilant and sonorous rales; as the paroxysm subsides, the vesicular breathing becomes more apparent, and is associated with moist rales.

**PROGNOSIS.** In itself asthma is not fatal to life; but if the paroxysms are frequently repeated there results either emphysema, cardiac dilatation, with subsequent dropsy, or even cerebral hemorrhage. Attacks of asthma frequently occur as a complication in emphysema, chronic bronchitis, valvular diseases of the heart, or Bright's disease.

#### THE TREATMENT.

In the treatment of this affection due regard is to be had to the chest muscles and the nerves controlling their action. The whole group of muscles seems to be involved, spasmodically, and the lungs are affected the same way. Inhalation is easily made, but exhalation seems to be the difficulty. Much has been said and done during the last decade to relieve those afflicted with



this most distressing affection. There are certain vulnerable points to consider, in the treatment of asthma. That it is generally the result of reflex nervous influences, observations abundantly demonstrate. The methods adopted to take away the source or sources of irritation are legion. The inhalation of vapor from certain teas, and smoke from certain compounds, has long been in vogue. Prof. E. H. Pratt has been remarkably successful in relieving many cases orificially—by the dilation and surgical treatment of the lower outlets of the body. The Osteopath thinks he has the highest claims, in that his means are so much easier carried out; to the patient especially, and the results are so effectual and so immediate that it satisfies him, and there is no resort to other means by him. Now what are they? The first thing to understand is, that the sympathetic nervous system directs and controls all action and sensation in the body, and when properly known, and its functions comprehended, disease becomes as easily controlled as an ordinary fire. Begin the manipulations for a moment or two at the base of the brain, in the upper cervical area, posteriorly, then strongly raise both arms, pressing on either side of the spinous processes along down the back, beginning at the level with the shoulders, pressing there with the fingers, or with the knee pressed against the back, while the arms are pulled strongly upward and backward, loosening the hold and lowering the pressure in the back, for three or four times, until the upper four or six dorsal vertebrae are passed with the knee downward. These movements not only stimulate the nerves of the spine, but raise all the intercostales, give vent to accumulated secretion in the lungs, assist in exhalation at once, and if the patient is caused to breathe deeply during these manipulations, there is an immediate relief experienced. The general treatment of the whole system should then be given, and vibratory manipulations briskly and profoundly made over the entire chest, front and rear, with the hand or hands, for several minutes. These vibratory movements aid in removing the obstructed venous circulation between the ribs and intercostal muscles, taking off the pressure at once. The raising of the clavicles should be attended to, and stretching the body backward, using pressure along the sides of spinous processes. This not only relieves the stasis along the spine, but influences the abdominal plexuses and aids the circulation of venous blood and lymph in the viscera. The sphincters at the lower outlets of the body should be seen to, and pressure removed. Treatments to be repeated daily, or every two to four days.

## HAY ASTHMA.

**SYNONYMS.** Hay fever; autumnal catarrh; rose fever; rose cold.

**DEFINITION.** An acute, specific, catarrhal inflammation of the upper air passages, extending to the bronchial tubes, associated with spasmodic contraction of their muscular layer occurring at a particular season of the year, characterized by coryza, croupy or wheezy cough, and a difficult respiration.

**CAUSES.** A predisposition, often hereditary, of the nervous system seems to be a strong etiological factor. Persons in whom the predisposition exists have attacks excited by the inhalation of the pollen of grasses, rye, corn, wheat, or roses.

**PATHOLOGICAL ANATOMY.** Hypertrophy of the inferior and middle turbinated bones; a peculiar hyperaesthesia of the mucous membrane covering the inferior and middle turbinated bones, the middle meatus, the floor of the nose, and that part of the septum below the limit of the olfactory membrane, is frequently associated with the disease.

**SYMPTOMS.** Begins by irritation of the eyes, severe coryza, with sneezing, a clear, watery, nasal discharge, and congested Eustachian tubes, rapidly extending to the larynx and bronchial tubes, when occurs a hoarse, croupy, and wheezing cough, and difficulty of breathing. The dyspnoea occurs in paroxysms, which are often as severe as those occurring during a regular asthmatic attack. There is mild depression of the nervous system in nearly all attacks. The paroxysms remit after a few days, returning again for several days or weeks, and again remitting, the bronchial catarrh persisting for a month or more. The constitutional symptoms are mild, unless complications occur.

**COMPLICATIONS.** The affection may extend to the finer bronchial tubes (capillary bronchitis); congestion or œdema of the lungs and pneumonia are not infrequent.

**DURATION.** Unless a change of climate is resorted to, paroxysms of hay fever continue more or less severe for six, eight, or ten weeks of the year, each year the paroxysms growing more severe.

**PROGNOSIS.** The affection never proves fatal in itself, but one or more of the following sequelae may result, to-wit: asthma, chronic bronchitis, or loss of the special sense of hearing or of smelling.

## THE TREATMENT.

Hay asthma seems to derive its source of irritation from the olfactory nerve terminals—in the mucous membrane of the turbinated bone. This hypersensitiveness is due to increased accumulation of blood, that due to muscular contraction of the neck muscles, closing (or partially so) the jugulars; the blood and lymph accumulate, swelling, hyperaemia ensues, reflex action is conveyed to the bronchial tubes, thence to the lungs, the diaphragm; sneezing ensues; the liquor sanguinis exudes through the walls of the ducts; chemical changes result. The removal of venous obstruction must be effected in all of the veins returning the blood of the head and face to the heart. The head and neck treatment should be made, vibratory movements on fauces, in the mouth, on cheeks, inner canthi of eyes, nares, temples, neck, angles of lower jaws; raising the clavicles, chest muscles, ribs, arms, and pressure along the sides of the spine, while the arms are extended, and deep inspirations made during each arm movement. Remove all pressure from the sympathetic nerve filaments in the sphincters. Treatments may be given every day or two until a cure is effected. These cases will usually obtain immediate relief, but some require persistent treatment for several weeks.

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WHOOPING COUGH.

SYNONYMS. Hooping cough; pertussis.

DEFINITION. A convulsive, paroxysmal cough, consisting of a number of forcible expirations, followed by a series of deep, loud, sonorous inspirations (the whoop), repeated several times during each paroxysm, and associated with catarrh of the bronchial tubes.

CAUSES. Chiefly a disease of childhood, one attack generally removing the susceptibility; contagious; the result of an unknown poison, perhaps atmospheric, affecting the nervous system.

PATHOLOGY. The changes, if any, occurring in the nervous system are unknown. It is said that "irritation of the internal branch of the superior laryngeal nerve produces relaxation of the diaphragm, spasm of the glottis, and a convulsive expiration, the series of phenomena present in a paroxysm of asthma." Hyperaemia of the mucous membrane of the nares, pharynx,

larynx, and bronchial tubes, with diminished secretion, followed by an increased secretion of a transparent mucus, afterward becoming purulent, the mucous membrane pale and anaemic.

**SYMPTOMS.** Divided into three stages, to-wit: catarrhal, spasmodic, and terminal.

**Catarrhal Stage.**—Originates in an ordinary naso-laryngo-bronchial catarrh, with a loose cough. Duration one or two weeks.

**Spasmodic Stage.**—The cough becomes paroxysmal, consisting of a succession of short, rapid expiratory efforts, the face becoming red, the eyes swollen and protruding, the body bending forward, and when these expiratory efforts have exhausted the breath, they are followed by a deep, loud, crowing inspiration—the whoop; each paroxysm being composed of three such spells, the last one followed by the expectoration of a small amount of tough, viscid mucus. The attacks of cough may be so severe as to cause vomiting, and if the vomiting occur shortly after food has been taken, the nutrition of the patient will suffer. Profuse epistaxis is not infrequent. Duration about four weeks.

**Terminal Stage.**—The paroxysms recur at longer intervals, are of shorter duration and less intensity, the catarrhal symptoms being more marked, the expectoration freer. Duration two to six weeks, often followed by the “cough of habit.”

**COMPLICATIONS.** Congestion of the lungs, capillary bronchitis, pneumonia, and emphysema, or rarely convulsions, hydrocephalus, or apoplexy.

**DIAGNOSIS.** During the catarrhal stage whooping cough can not be distinguished from a common cold, but on the advent of the characteristic whoop the diagnosis is determined.

**PROGNOSIS.** Depends upon the age and strength of the patient, the severity of the paroxysms, and the presence or absence of complications. Ordinary cases, favorable. Moderately severe attacks during infancy are followed by cerebral symptoms, while attacks occurring in adults are followed by chest symptoms.

#### THE TREATMENT.

The treatment should begin with gentle pressure on the vasomotor area for a couple of moments, then gently stretch the muscles of the neck, manipulating them from side to side (on both sides), well up under the chin, being particularly careful to take the pressure off of the glossopharyngeal and spinal accessory nerves—the phrenic and pneumogastric. Then raise the clavi-



cle and chest muscles, the intercostales, and pull the arms strongly upward and backward, while the knee is placed on either side of the upper dorsal region; or have the patient lock hands above head, the operator raise the chest muscles by extension of the arms while the pressure is made between the scapulae, and at each movement of the arms the fingers pressing the dorsal terminal filaments, lowering the pressure at intervals of one or two inches each time, and going on down as far as the eighth dorsal. The several moves to accomplish this object may be instituted as occasion demands—so that is done. Placing the thumb on one side of the spine, and using as hard pressure as may be while the arm is raised and lowered, is an excellent way to relieve the chest of engorgement. The pharynx should receive attention inside of the mouth, with the palm of the index finger, occasionally. The disease may be cut short very much by these and such manipulations as suggest themselves to the manipulator from time to time. Treatments should be had every day (every other day at farthest) till relieved.

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### EMPHYSEMA.

**SYNONYM.** Vesicular emphysema.

**DEFINITION.** Dilatation of, or increase in the size and capacity of the air vesicles, characterized by enlargement or distention of the lungs, difficulty of breathing, especially on exertion, and associated sooner or later with dilatation of the heart.

**CAUSES.** The predisposing cause of emphysema is a hereditary nutritive derangement of the lung structure, often associated with a rigid enlargement of the thorax. The exciting cause is the result either of a too forcible and long continued inspiration—the theory of inspiration; or the excessive mechanical distention of the vesicular walls by forced expiration—the theory of expiration. But for either of these theories to be operative the lung structure must be congenitally weak, for if violent respiratory efforts alone were the essential factor, the disease would be much more frequent. What is known as vicarious emphysema is a distention of the air cells of the healthy portion of the lung, some other part being the seat of consolidation.

Interlobular emphysema is the presence of air in the spaces between the lobules of the lungs underneath the pulmonary pleura.

**PATHOLOGICAL ANATOMY.** The situation of vesicular em-

physema is, in the majority of cases, the superior portions of the chest, and is more marked on the left side than on the right.

An emphysematous lung feels remarkably soft to the touch, and upon cutting, a dull creaking sound is barely perceptible. It is of a pale red color, the vesicular walls are thinner and slighter, the vesicles are greatly enlarged, sometimes to the size of a pea or bean, and have an irregular shape, and traversing most of these large cysts (dilated vesicles) a few delicate bands, the remains of the lacerated interalveolar septa, are visible. With the destruction of the septa many of the capillaries are destroyed, whereby the emphysematous tissue is remarkably bloodless and dry.

In consequence of the destruction of so many of the capillaries, the obstruction to the pulmonary circulation becomes so great that the pulmonary artery and right cavities of the heart are greatly distended; finally the muscular tissue of the heart undergoes granular, followed by fatty degeneration. The distention of the veins results in a general venous stasis, to-wit: nutmeg liver, congested kidneys, and gastro-intestinal catarrh.

**SYMPTOMS.** The disease is often not suspected until it is well developed. The chief symptoms of vesicular emphysema are difficulty of breathing (dyspnœa), greatly aggravated on exertion, more or less cough, the result from dilatation of the heart, particularly cyanosis without marked distress. The discomfort of the patient is often increased by paroxysms of asthma.

**INSPECTION.** The shoulders are rounded, the intercostal spaces widened, the vertical diameter elongated, with circumscribed prominences between the clavicles and nipples, often increased by the act of coughing—the peculiar “barrel-shaped” chest, characteristic of this disease. The character of the respiratory movements is marked, there being but slight movement observed on forcible respiration, the chest having the constant appearance of a full inspiration.

**PALPATION.** The vocal fremitus is diminished, and the cardiac impulse depressed and nearer to the sternum.

**PERCUSSION.** The resonance is increased (hyper-resonant) over all the emphysematous portions, and if the whole lung be involved, extends to the seventh or eighth rib anteriorly and to the twelfth rib posteriorly. The hepatic dullness may not begin until the inferior margin of the ribs is reached; the cardiac dullness is lessened, on account of the emphysematous lung nearly covering the heart.

**AUSCULTATION.** The vesicular murmur is weakened, and in pronounced cases almost absent. If bronchitis be present, the inspiratory sound may be rough or sibilant in character, but its duration is always shortened. Expiration is always prolonged, and if bronchitis be present, may be associated with more or less pronounced moist or bubbling rales. The first sound of the heart is lessened in intensity and duration, the second sound being sharply accentuated.

**DIAGNOSIS.** Bronchitis is distinguished from emphysema by the absence of dyspnoea, hyper-resonance of the chest, changes in its shape, size and movements, and the disturbance of the circulation. Spasmodic asthma by the paroxysmal character of the affection, emphysema being a permanent malady, with attacks of asthma. Cardiac diseases due to other causes than emphysema do not have the characteristic physical signs of that affection.

**PROGNOSIS.** Vesicular emphysema is essentially a chronic disease. In itself it rarely proves fatal, but if aggravated, from any cause, or if associated with frequent or prolonged asthmatic paroxysms, the cardiac changes are hastened, general dropsy supervenes, death occurring from exhaustion, or, more commonly, as the result of intercurrent attacks of pneumonia.

#### THE TREATMENT.

The general treatment is needed in this affection, and especially the knee and pull-back arm treatment, the sitting erect and normal breathing. Due attention should be given to the treatment of the phrenics, the pneumogastric and spinal accessory nerves. Take off the pressure by stimulating the vaso-motor area, and give special treatment to the brachial region; and watch the glandular systems and sphincter muscles, and treat them as indicated. The relief of the jugular pressure aids greatly in relieving the excessive air in the interlobular spaces. Study the cases carefully and institute treatment according to the conditions demanded. It may require several weeks' treatment to bring about a normal condition.

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#### HÆMOPHTYSIS.

**SYNONYMS.** Bronchial hemorrhage; broncho-pulmonary hemorrhage; bronchorrhagia.

**DEFINITION.** The expectoration of pure or unmixed blood, usually of a bright red color, following the act of coughing.



PLATE XXXVI.—Showing Vibratory Movement of Viscera.





**CAUSES.** In the majority of cases, the result of tubercular deposition in the walls of the minute bronchial arteries; excessive cardiac action; bronchial congestion; excessive bodily exertion, straining, lifting, or running; a symptom of haemophilia ("bleeder's disease").

**PATHOLOGICAL ANATOMY.** Haemoptysis rarely causes death in itself, so that few opportunities for observing post-mortem appearances are obtained, and when they do occur, the location of the hemorrhage is seldom found.

The air passages are more or less filled with clotted blood, the mucous membrane is swollen, and of a dark red color; rarely, pale and bloodless. The air cells contain blood clots, or are distended with air, the bronchi being filled with clots, preventing its escape. Unless the clots are rapidly removed by expectoration or absorption, a secondary inflammation develops around about them.

**SYMPTOMS.** "Spitting of blood" occurs suddenly; rarely, it is preceded by epistaxis, cardiac palpitation, and some difficulty of breathing. It begins with a sensation of warmth under the sternum, tickling in the throat, a sweetish taste in the mouth, which, when attempting to remove by the act of coughing, a warm, saltish, bright red, frothy liquid gushes from the mouth and nose. The quantity of blood raised varies from an ounce to a pint. The appearance of the blood depresses the individual, he becoming pale, tremulous, often fainting. The attack may subside within half an hour to several hours, returning for several days, in the meantime the expectoration being either bloody or streaked with blood. A slight febrile reaction, with chest pains, supervenes upon the hemorrhage, the result of the inflammation at the site of the bleeding, which soon subsides, except where blood clots develop a secondary pneumonia, which may undergo the cheesy metamorphosis.

**AUSCULTATION.** Coarse, bubbling rales are heard in circumscribed portions of the chest.

**DIAGNOSIS.** From epistaxis, or hemorrhage from the posterior nares, it is distinguished by the absence of air bubbles and an inspection of the fauces and the nasal cavities.

Haematemesis, or hemorrhage from the stomach, differs from haemoptysis in the blood being vomited instead of expectorated, of a dark color, clotted, mixed with the acid contents of the stomach, followed with black, tar-like stools, and the absence of rales in the chest.

Exceptions to the above occur when the blood from the lungs is first swallowed and afterward raised by vomiting, or when the hemorrhage in the stomach is caused by the erosion of a large artery, the result of ulcer of the stomach; in these cases, however, the raising of blood is preceded by epigastric pain and the blood is not frothy.

PROGNOSIS. Haemoptysis in itself rarely terminates fatally, although causing much depression; the patient rapidly recovers, unless secondary pneumonia results. In nine cases out of ten it is the diagnostic sign of phthisis.

#### THE TREATMENT.

Perfect rest in bed, the head and shoulders elevated, and perfect quiet, the diet to be bland, and drinks cool, the patient swallowing small particles of ice. Common salt, dissolved in the mouth and swallowed, is a popular remedy, and if of no real benefit, serves to occupy the attention of the patient and friends. The treatment should begin by holding the vaso-motor area for three to five minutes, and during the last of said pressure, place the hand on the forehead and counter-press, and with the finger tips press upward against the under edge of the occiput on either side of the axis for a moment or two, gently tipping the head backward. The same result may be accomplished with the arm placed under the chin of the subject, and stretching the neck upwards and using pressure on the upper back of the neck area. Then raise the clavicles while the arm is extended (both sides). See that the jugulars are freed from clavicular pressure; raise the chest muscles steadily, either one or both sides. The above treatments, one or all of them, at the one sitting, until relief is obtained. The subsequent treatments should be especially directed to taking off the pressure from the parts affected—the bronchioles—keeping the veins all free around the neck, and stimulate the dorsal area anteriorly and posteriorly, and on the sides by arm movements and vibratory manipulations. The latter will be greatly beneficial if continued for several minutes at each sitting. The knee and chest treatments should be made with extreme care and mildness at the first. The element phosphate of iron would be a good adjuvant in such conditions, and for extreme exhaustion, Kalii phos. These elements are lost when the hemorrhage occurs. General, light treatment should be given every other day.

## DISEASES OF THE LUNGS.

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### CONGESTION OF THE LUNGS.

**SYNONYMS.** Pulmonary engorgement; hypostatic congestion.

**DEFINITION.** An increase in, or abnormal fullness of, the capillaries of the air cells; active congestion when the result of an accelerated circulation; passive congestion when caused by an impeded outflow from the capillaries.

**CAUSES.** Active.—Increased cardiac action; over-exertion; alcoholic excesses; mental excitement; inhalation of cold or hot air. Passive.—Obstruction to the return circulation. Dilated heart; valvular diseases; low fevers (hypostatic congestion); Bright's disease.

**PATHOLOGY.** The hyperaemic lung has a bloated, dark red appearance; its vessels are distended to the uttermost, the tissues succulent and relaxed, blood flowing freely over the cut surface; a bloody, frothy liquid is present in the bronchi; and the alveolar walls are so much swollen that the condensed lung shows scarcely any indication of its cellular structure, resembling the tissue of the spleen (splenification).

**SYMPTOMS.** Active.—Rapidly developing thoracic distress and difficulty of breathing, flushed face, strong, full pulse, throbbing carotids, cardiac palpitation, and congested eyes, with a short, dry cough, followed by scanty, frothy expectoration, slightly streaked with blood. Passive.—Developed slowly, with difficulty of breathing, blueness of the surface, almost continuous hacking cough, followed by scanty, blood-streaked expectoration.

**PERCUSSION.** The resonance of the lungs slightly diminished, the quality of the sound being somewhat tympanitic.

**AUSCULTATION.** The vesicular murmur is diminished and accompanied with subcrepitant rales.

**DURATION.** Active.—Usually from three to five days, terminating either by resolution, hemorrhage, or, rarely, pneumonia. The onset may be so severe and overwhelming that death rapidly supervenes. Passive.—Developed slowly, and is subject to great variations, depending upon the cause.

**DIAGNOSIS.** Active congestion of the lungs can not be distinguished from the stage of engorgement of a true pneumonia.

**PROGNOSIS.** An acute congestion of the lungs may prove



fatal within a few hours, but under prompt treatment it generally terminates favorably.

#### THE TREATMENT.

Freedom of the circulation of the blood in the upper portion of the body should be the first thing to seek. The general treatment is the proper one to institute. Free the neck muscles and intercostal muscles of venous pressure. The clavicles are to be elevated, and the arms drawn strongly upward and backward. the patient directed to inhale all the air the lungs will comfortably hold as each move is made, to free the chest pressure. The *venae azigos*, major and minor, demand attention, hence treatment down the back from the fifth cervical to the eighth dorsal on both sides of the spine; and pulling of the arms strongly as permissible without producing pain, should be done, endeavoring to remove all the constriction of the chest, to give ample room for lung expansion. The manipulatory vibrations on the chest walls assist in removing the intercostal congestion that is holding the chest muscles and rendering them immobile. Take off the pressure everywhere, and require systematic exercise in breathing at stated periods, several times at a sitting, every two to four hours. In this condition treatment between the shoulders becomes one of the essentials. Stimulate the diaphragm and spine, and effect a general liberation of obstructions all over the body. Treatments repeated every four to six hours, gently, and after relief is obtained, as often as required.

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#### ŒDEMA OF THE LUNGS.

SYNONYM. Pulmonary œdema.

DEFINITION. An exudation of serum into the pulmonary interstitial tissue and the alveoli of the lungs; characterized by dyspnoea, cough, and a frothy, blood-streaked expectoration.

CAUSES. Pulmonary œdema is the result of stasis, occurring when the outflow of venous blood in the lung meets an obstacle that can not be overcome by the right ventricle, as in cardiac diseases, in which the left ventricle fails. Bright's disease; alcoholic excesses, causing cardiac depression. Sequelae to other lung inflammations.

PATHOLOGICAL ANATOMY. The lung tissue is swollen, and does not collapse when the chest is open. The elasticity of the tissue has disappeared, and it pits upon pressure. If following

congestion of the lungs, the color is red; if a symptom of a general dropsy, its color is pale. On cutting into the œdematous spots an enormous quantity of albuminous fluid, sometimes clear, at other times of a red color, mixed more or less with blood, flows over the cut surface. The liquid is filled with bubbles, is frothy, from being copiously mixed with air, providing the air cells have not been entirely filled with serum, thereby excluding the air.

**SYMPTOMS.** The pre-eminent symptom is dyspnoea, the breathing being hurried, labored and rattling, all the accessory muscles of respiration being called into action. The sense of oppression and anxiety is extreme. There is also a constant, harassing, short cough, and the expectoration is a blood-streaked, frothy mucus. The action of the heart may be tumultuous or feeble. The face is at first flushed, but as the left ventricle fails, or if the effusion into the air cells be sufficient to prevent the entrance of air, symptoms of cyanosis rapidly supervene, the pulse becoming feeble, the surface cold, the breathing shallow and hurried, the cough suppressed, stupor replacing the restlessness, soon deepening into coma.

**PERCUSSION.** If no other lung disease, the percussion note is but slightly, if at all, impaired.

**AUSCULTATION.** The vesicular murmur is lost by the diffused subcrepitant and bubbling rales.

**DIAGNOSIS.** Acute pneumonia in the earlier stages is the only condition likely to be confounded with œdema of the lungs, but as the two diseases progress, the picture of pulmonary œdema is so characteristic that it can not be mistaken.

**PROGNOSIS.** Grave, and particularly if occurring in pneumonia, cardiac, or Bright's disease. In the majority of instances it is a terminal symptom coming on in all forms of acute and chronic diseases.

#### THE TREATMENT.

Every indication points to compression of the chest muscles. The lungs are compressed perhaps, from a contraction of the pectoral and all of the intercostales, sub-claviculae, and more than likely the muscles of the neck are drawn tightly over the veins of the neck (the jugulars), hence the indications are to take off the pressure. Placing one hand at the side of the neck, the forefinger free, and three fingers in such a position that, by raising the arm the fingers are made to press the clavicle outward, and raise the chest muscles, taking off the pressure and so relieving the lungs, heart and diaphragm that the patient feels entirely relieved.

After this the general treatment should be given, beginning at the neck. It will be found necessary to equalize every particle of the circulating fluid in the body so as afford opportunity to oxygenate the blood.

To stand by and see a person smother to death in order to observe a phenomenon resulting from pressure is surely reprehensible, when we have the ability to afford immediate relief—surely unworthy the high position that the physician should occupy. There is no indication for medicine. Then, when there is a means always at hand for relief, why let prejudice close the opportunity, and witness imminent dissolution and inexpressible agony while death is encircling its victim? Osteopathy proves its efficacy in these cases most satisfactorily, if properly applied. Repeat general treatment every two to six hours.

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### CROUPOUS PNEUMONIA.

**SYNONYMS.** Lobar pneumonia; pneumonitis; fibrinous pneumonia; pleuro-pneumonia; lung fever; winter fever.

**DEFINITION.** An acute, infectious, croupous inflammation, involving the vesicular structure of the lungs, rendering the alveoli impervious to air; characterized by a severe chill, headache, fever, thoracic pain, dyspnoea, cough, rusty sputum, and great prostration.

**CAUSES.** Croupous pneumonia is an infective disease caused by the diplococcus pneumoniae of Fraenkel, "which has its seat of election in, and produces its chief effects on, the lung." All ages liable. Males more frequently affected than females. One attack predisposes to another. Debilitating causes render individuals more susceptible. Alcoholism is one of the most frequent predisposing factors. It is most frequent in winter, at times occurring epidemically, the result of atmospheric conditions; exposure to draughts and cold. Gout, rheumatism, diabetes, and Bright's disease.

**PATHOLOGICAL ANATOMY.** The most frequent seat of croupous pneumonia is the lower right lobe; the next most frequent seat is the lower left lobe; the next, the upper right lobe, although in children and the aged this lobe is affected equally as often as the right lower lobe. The changes are: 1. Hyperaemia (engorgement); 2. Exudation (red hepatization); 3. Resolution (gray hepatization); or it may undergo purulent transformation or the development of abscesses (yellow hepatization).

1. Stage of hyperaemia, or engorgement, consists in the vessels of the alveoli being distended to their utmost, encroaching upon the cavity of the air vesicle; the lung has a reddish brown color, is heavier, sinking somewhat lower in water than a normal lung, and having a slight exudation upon the vesicular surface. The same changes are perceived in the adjacent bronchioles.

2. Stage of exudation, consists in the exudation of a viscid, fibrinous fluid, admixed with white and red corpuscles and blood, which rapidly coagulate, firmly inclosing the corpuscles and completely filling the alveoli. When the exudation and coagulation are completed, the lung is red, sinks at once when placed in water, and its elasticity is destroyed. When cut into, the color, density, and granular appearance so closely resemble the cut surface of a section of the liver, that Laennec termed it red hepatization. A thin section shows under the microscope, as a rule, the lancet-shaped diplococcus of Fraenkel, as well as staphylococci and streptococci.

3. Resolution, or gray hepatization, follows the above condition in the majority of cases, the coagulated albuminous exudation undergoing liquefaction and absorption, the cellular element undergoing a fatty degeneration, the greater part being absorbed, the remainder expelled during acts of expectoration, the alveoli returning to their normal condition, both as to capacity, function and elasticity.

If resolution be retarded and portions of the coagulated exudation undergo purulent transformation, changing from a yellowish to a greenish yellow color (yellow hepatization), pus cells are rapidly formed, the part becoming a granular, fatty mass. The portions of the lung not undergoing this purulent transformation retain the reddish color with intermixed yellowish patches, the lung structure proper remaining intact. The purulent contents may be ejected in part, the remainder undergoing fatty degeneration and finally absorption.

Abscess of the lung may result from the lung structure becoming involved in the purulent disintegration. Abscesses may be solitary or in great numbers, which by disintegration of intervening structure form one or more large abscesses; these abscesses either terminate fatally, or open into the pleural cavity, causing empyema and exhaustion, or open into the bronchi and are expectorated, or an interstitial pneumonia is developed and the abscess encapsulated in a firm cicatricial tissue.

Gangrene of the lungs may result from blocking up of the



bronchial or pulmonary arteries by coagula during any stage of the disease.

The uninflamed portions of the lungs are hyperaemic and their functional activity is increased.

Death sometimes results from a general œdema of the unaffected lung, such cases being often erroneously termed "double pneumonia."

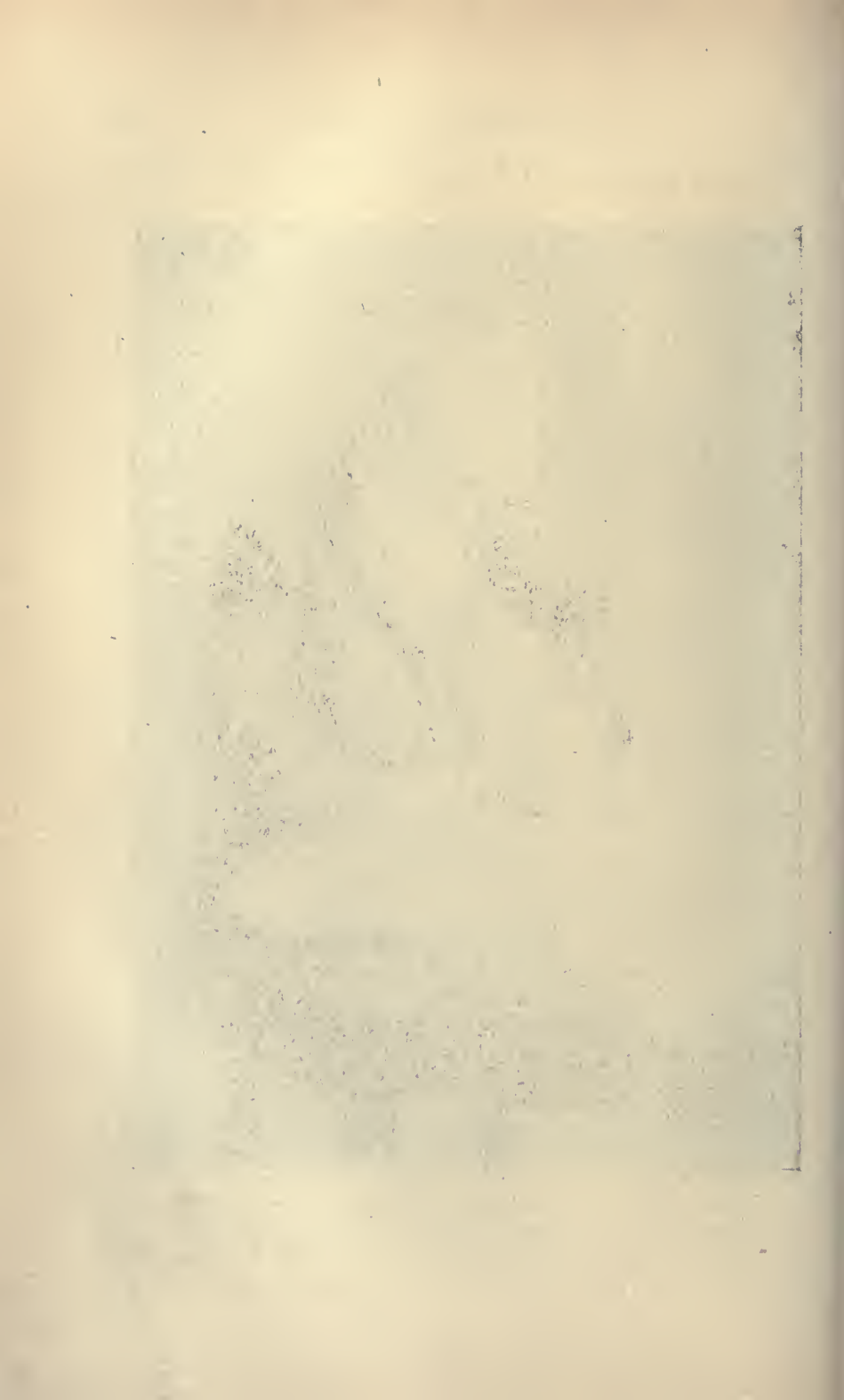
If inflammation of the pleura be associated with a pneumonia the so-called pleuro-pneumonia, the changes in the pulmonary pleura are characteristic. "An uneven, thin, downy-looking layer of plastic exudation covers its surface. This plastic layer may conceal the liver brown color of the pneumonic lung. As the third stage is reached, the opposing surfaces of the pleura may become agglutinated. The pleuritic changes follow very closely those which occur within the lung. The cells in the pleuritic exudation are mainly pus. The pleuritic membrane is opaque, congested, and ecchymotic. It may become so thick as to give a dull note on percussion, after resolution is reached."

Duration of Stages.—Stage of congestion, from one to three days; stage of exudation, from three to seven days; stage of resolution, from one to three weeks. In severe cases or in the very young, the aged, or the depressed, the stage of red hepatization may be fully developed within forty-eight hours.

SYMPTOMS. Begins with a severe and usually protracted chill (in children often convulsions, adults vomiting), followed by a rapid rise of temperature, 103-104 degrees F., a strong, full, but rapid pulse, soon showing evidences of embarrassed cardiac action from obstructed respiratory circulation, either a dull or sharp pain near the nipple, aggravated by pressure, breathing, or coughing, shortness of breath, the inspiration short and superficial, the expiration accompanied with a moan or grunt, the number of respirations increasing to 40, 50 or more per minute, causing interrupted speech, the ratio between pulse and respiration may be 1 to 2 or more; cough, first short, ringing, and harsh, soon followed by a scanty, frothy mucus, soon becoming semi-transparent, viscid, and tenacious, about the second day changing to the familiar rusty sputum, becoming more copious and of a yellow color as the disease advances; rarely cases occur with bloody or blood-streaked sputum during the continuance of the fever. There are present headache, sleeplessness, rarely delirium, save in drunkards, epistaxis, flushed countenance, and especially over the malar bones is a well-defined mahogany blush; gastric



PLATE XXXVII.—Manner of Treating the Soft Palate.



disturbances and scanty, high-colored urine, with diminished chlorides, and often albuminuria. From the very onset of the disease the prostration is of the most serious character. The above symptoms continue more or less marked until either the fifth, seventh, ninth, or eleventh day, when a crisis occurs, and within twenty-four hours convalescence is established, recovery rapidly following.

Typhoid pneumonia is a term applied to those cases which are accompanied by signs of extreme prostration, delirium, tremor, very high temperature, and profuse and prolonged exudation. They may also terminate by a crisis.

Bilious pneumonia occurs in cases accompanied by congestion of the liver, the result of venous stasis from pulmonary obstruction or from an accompanying acute catarrhal jaundice. In malarial districts pneumonia and malaria are often associated, when jaundice more or less pronounced occurs. Such cases are termed malarial or intermittent pneumonia.

Alcoholic, or pneumonia of the intemperate, has one very characteristic symptom, to-wit: early delirium. In pneumonia generally the mind is clear when all the conditions are unfavorable. Pneumonia of the intemperate may begin with symptoms closely resembling an attack of delirium tremens, cough, expectoration, and pain being very slight, or even absent.

If purulent infiltration follow the stage of red hepatization, instead of the crisis, symptoms of exhaustion occur, with profuse purulent expectoration, high temperature, severe sweats, the tongue brown and dry, sordes collecting on the teeth, low delirium, feeble pulse, rapid, rattling breathing, the recovery slow and convalescence tedious.

Pneumonia in the aged or the insane may be latent, coming on without chill or pain, and with only a slight fever; the cough and expectoration are slight, physical signs ill-defined and changeable, and the constitutional symptoms out of all proportion to the amount of lung involved.

**INSPECTION.** First Stage.—Deficient movement of the affected side, due to pain. Second Stage.—The healthy side rises normally, the affected side lagging behind. If both lower lobes are impervious to air, the diaphragm can not descend and the epigastrium does not project during inspiration, the breathing being conducted by the upper part of the chest (superior costal respiration).

**PALPATION.** First Stage.—The vocal fremitus more distinct



than normal. Second Stage.—The vocal fremitus is markedly exaggerated, except in those rare instances of occlusion of the bronchi by secretion. The cardiac impulse is felt in the normal position.

**PERCUSSION.** First Stage.—The percussion note is slightly impaired, indeed, at times having a hollow or tympanitic quality. Second Stage.—Dullness over the affected parts, with an increased sense of resistance.

**AUSCULTATION.** First Stage.—Over affected part, feeble vesicular murmur, associated with the true vesicular or crepitant (crackling) rale, most distinct during inspiration. Second Stage.—Harsh, high-pitched, bronchial respiration, at times resembling a to-and-fro metallic sound, except in those rare instances in which the bronchi are more or less filled with secretion. Bronchophony, or distinctly transmitted voice, at times pectoriloquy, or distinct transmission of articulated sounds, is present. Third Stage.—Breathing changing from bronchial to vesiculo-bronchial, the crepitant (crepitatio redux) rale returning, and if resolution proceed, the breath sounds are associated with large and small moist and bubbling rales.

“The morbid phenomena, physical signs, and symptoms of the malady correspond usually in this manner” (Da Costa):

I. Stage of engorgement and beginning of exudation.	Crepitant rale; slight percussion dullness.	Cough; beginning dyspnoea and rapidly developed fever heat.
II. Stage of solidification of lung tissue (red hepatization).	Percussion dullness; bronchial respiration; bronchophony.	Rusty-colored sputum, dyspnoea; cough; high fever with marked evening exacerbations and morning remissions.
III. Stage of softening (gray hépatization).	Same physical signs as in second stage unless large abscesses have formed.	Chills; prostration, etc., purulent or brownish sputum; generally high temperature.

**TERMINATIONS.** Asthenic cases recover within two weeks. When purulent infiltration supervenes, the disease pursues a tedious course of several weeks' duration, with a low exhaustive fever. If death occur during the first or second stages it is usually the result of a collateral œdema of the uninflamed lung, or cardiac failure and impaired nerve force. If abscesses occur, there are exhausting sweats, frequent cough, with a large amount of yellowish-gray, at times blood-streaked, expectoration. Gangrene of the lungs is a rare termination; it is associated with

symptoms of collapse, the expectoration of a blackish, fetid sputum, and the physical signs of a pulmonary cavity.

**DIAGNOSIS.** Œdema of the lungs may be confounded with the first stage of pneumonia, but the subsequent history, its presence on both sides, and the waterish expectoration and absence of chill and pain and the physical signs of pneumonia soon determine the diagnosis. Pleurisy is oftener confounded with pneumonia than any other disease, the points of distinction between which will be pointed out when discussing that affection.

**COMPLICATIONS.** Acute pleuritis is a frequent complication of croupous pneumonia, occurring as often as from ten to twenty-five per cent. of cases. The more acute localized pain, the greater embarrassment of respiration, and the usual physical signs of effusion are the evidences of a pleuro-pneumonia. Capillary bronchitis is a rare but dangerous complication. Pericarditis, rheumatism, and gout are rare complications.

**PROGNOSIS.** Depends upon the extent of the inflammation, the dangerous features of croupous pneumonia being cardiac failure, the result of a myocarditis or of embarrassed respiratory circulation, and the rapid tissue waste associated with extreme fever, 105 degrees, resulting in impaired nerve force; double pneumonia has a very grave prognosis, but it is not nearly so frequent as was at one time supposed. The co-existence of pleuritis adds to the gravity of the prognosis, although not as fatal as generally supposed. Pneumonia of drunkards almost invariably terminates fatally. Typhoid pneumonia, pneumonia of the aged and in the insane, the so-called bilious pneumonia, purulent infiltration, abscesses of the lungs and gangrene, all give a grave prognosis.

#### THE TREATMENT.

When the picture of consequences is observed, in the various stages of this affection, is it not plainly to be seen that venous circulation stands as the only cause of this affection? Watching its various stages, until finally purulent infiltration supervenes, who, with a knowledge of the science of Osteopathy, can but censure the course usually pursued by the medicine dependents for relief—when there is not a single effort made to take off the pressure, that the patient be relieved from this most distressing condition, and arrest consequences that must, with the pressure continued, follow? As the contraction tightens down on all of the nerves that control the circulation, is it any wonder that their functions should cease, and stasis come to every tube controlled

thereby? Every stifled breath and every piercing pain call for help to lift off the pressure. Instead of that the medicine doctor pours his mixtures into the stomach, or hypodermically, expecting favorable results, when his poor victim is suffering the very tortures of the "damned" while trying to live. The stereotyped routinism of the ages has entailed untold misery and slain more than famine, pestilence and sword. The idea of taking off the pressure has not once entered the citadel of thought of the never-so-wise-appearing "assistors," called doctors. It seems like the minds of men have been surreptitiously inveigled so long that freedom is obscured. The apparatus (lungs) for manufacturing pure blood, to build up healthy tissue, is interfered with in the disease under consideration, and the important thing to be done is to reinstate their functions. Capillary congestion, due to pressure, either on the venous system that carries the blood out of the lungs, or on the nervous system that controls the peristalsis of the muscular walls of the blood-vessels, causes the difficulty. The cerebro-spinal nervous system most likely is where the difficulty lies. Cold, compressing the muscular fiber around the terminal filaments in the upper dorsal area, prevents normal reflexes to the brain, thence through the pneumogastric and the sympathetic to the lungs, and the contraction of the chest muscles obstructs the return blood through the veins; hence the carbonic oxide increases, tissue changes ensue, decomposition starts up, poisons accumulate, the normal action is interfered with, blood accumulates in the capillaries and inter-capillary tissue. Œdema is the result. The most forcible indication points to "taking off the pressure." This is done by following the general directions for freedom of the circulation. These are simple, and a general knowledge of the anatomy of the system gives assurance to the operator that accomplishment is certain in all such cases, where too much tissue change has not already occurred. We therefore begin at the vaso-motor area, give thorough general treatment, using the limbs as levers to lift the weights. Gently stretching the spinal nervous system by the hands under the chin and at the occiput accomplishes the object most admirably. All of the neck manipulations should be carefully, profoundly, thoroughly made first; the clavicles and arms gently but strongly raised, the arms extended sidewise and slightly upward as the finger ends are pressed firmly on the side of the upper dorsal spine, and the patient induced to deeply inhale at the same time. This tends to, and does, free the capillary congestion of the lungs, oxygenate



the blood and increase general circulation. The spine is to be stimulated by the vibratory sudden moves along each side of the processes, and lifting upward and outward, the muscular structure clear down the back. The entire general treatment should be given as far as possible each time, and treatment may be given at short intervals until decided amelioration ensues. The manipulations tend to increase the secretions for a short time, and the expectoration shows activity until the accumulation is expelled. Where hepatization results before osteopathic treatment is applied, a continuation or the institution of these manipulations soon removes the difficulty, and air begins to permeate the tissue, regeneration begins, health results. Foreign substances in the way of drugs do nothing but load the blood with impurities. The proper application of the principles of Osteopathy, as indicated and pointed out, satisfies patient and friends that Osteopathy is the *sine qua non*.

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### CATARRHAL PNEUMONIA.

SYNONYMS. Broncho-pneumonia; lobular pneumonia; capillary bronchitis (?).

DEFINITION. An acute catarrhal inflammation of the bronchioles and alveoli of the lungs, characterized by fever, cough, dyspnoea, copious expectoration, and great depression.

CAUSES. From an extension of a bronchial catarrh downward; following the eruptive fevers, especially measles; complicating whooping cough. Persons of the rickety or scrofulous diathesis, in whom there is a greater irritability of the epithelial elements, are particularly predisposed to this form of pneumonia on slight exposure; emphysema; diseases of the heart; most frequently seen in childhood and old age. Bacteriological investigations seem to indicate that secondary broncho-pneumonia is due to more than one germ.

PATHOLOGICAL ANATOMY. Hyperaemia of the mucous membrane of the bronchi, extending to the connective tissue of the bronchioles and accompanying arterioles and to the alveoli, with swelling and succulence of these tissues, accompanied by an abnormal secretion and an immense production of young cells from the proliferation of the bronchial and alveolar epithelium, admixed with a yellowish, creamy, mucoid material, which blocks up the bronchioles and air cells. The affected parts first have a reddish-gray, soon changing to a yellowish-gray color, due to



the rapid metamorphosis of the newly developed cells. If the fatty change be completed, absorption takes place, and the consolidation is removed; if it remain incomplete the cells atrophy, the little mass becoming caseous, and the disease passes into a chronic state. The bronchial tubes also participate in the disease, the walls become thickened, from a hyperplasia of the connective tissue (peri-bronchitis), and their caliber is often dilated.

**SYMPTOMS.** Catarrhal pneumonia begins as a catarrhal bronchitis. It may be either acute, subacute, or chronic in its course.

**Acute Variety.**—Its onset is announced by a gradual rise of temperature to 102-103 degrees F., the febrile phenomena assuming a typical remittent character, with rapid, laborious, and shallow breathing, as shown by the widely dilated nares and violent action of all the accessory muscles, while the insufficient distention of the lungs is shown by the great recession of the lower part of the chest walls and sinking in of the intercostal spaces. The inspiration is short and imperfect, the expiration noisy and prolonged; the pulse is frequent, 100-120 or more, and somewhat compressible; the cough, which, during the bronchitis, was loose, now becomes short, hacking, dry, and painful, soon followed by more or less copious muco-purulent expectoration; the appetite is impaired, bowels somewhat loose, urine scanty, high-colored, and the surface frequently covered with more or less profuse perspiration.

The subacute and chronic varieties have the same general symptoms, but the duration is longer and the exhaustion greater.

The progress of catarrhal pneumonia is sometimes, although not often, a very acute one. The disease may prove fatal in a few days, especially if it attack feeble children; in such the countenance becomes pale and livid, the lips bluish, the eyes dull, and a restlessness giving place to apathy, and a continually augmented somnolence. Resolution, when it occurs, is by lysis, several weeks elapsing before complete recovery.

**PERCUSSION.** Dullness, scattered in patches, over both lungs, the intervening healthy lung often giving a more or less hollow or tympanitic note.

**AUSCULTATION.** Vesiculo-bronchial breathing, changing to moist bronchial breathing, associated with small bubbling (subcrepitant) rales. As the disease progresses toward resolution, the rales become larger (large bubbling) and more copious. If

pneumonic phthisis result, physical signs indicative of that condition are soon evident.

**SEQUELÆ.** Attacks of catarrhal pneumonia complicated with atelectasis, or collapse of the lobules, when recovery occurs, are followed by emphysema of the lungs. If the catarrhal products which fill the alveoli and bronchioles and intervening connective tissue do not rapidly undergo complete fatty metamorphosis and consequent absorption, pneumonic phthisis results.

**DIAGNOSIS.** Ordinary bronchial catarrh differs from catarrhal pneumonia by the absence of dyspnoea, fever, and dullness on percussion, and the presence of the large bubbling rales, and also by the subsequent history of the two affections.

Croupous pneumonia is a unilateral disease; catarrhal pneumonia is bilateral and diffused over both lungs; the former a self-limited disease, the latter having no fixed duration.

Acute tuberculosis at its onset is characterized by the presence of a capillary bronchitis, a differentiation being possible only by a study of the clinical history and course of the two maladies and the presence or absence of the tubercular bacilli.

Œdema of the lungs is a bilateral disease associated with a short, dry cough, and dyspnoea, but lacks the previous catarrhal history and high temperature of catarrhal pneumonia.

**PROGNOSIS.** Fully one-half of the cases of true catarrhal pneumonia terminate fatally. The prognosis must be guarded in scrofulous or rachitic subjects, or those enfeebled by other diseases, for unless prompt resolution can be effected, it will terminate fatally early, or develop pneumonic phthisis. Have seen cases continuing up and down for eight and ten months, and finally make a good recovery.

#### THE TREATMENT.

When it is considered that fully one-half of the cases of this affection succumb under the ordinary treatment, and ninety per cent. are cured by proper Osteopathic manipulations, does it not stand to reason that merit settles the preference for it? We venture the assertion that not a single case of pneumonia ever occurred without pressure on some nerve or nerves leading to and controlling the lung tissue, or interfering with the return venous circulation. In this affection the same treatment that is recommended for croupous pneumonia should be made. The early institution of the treatment will most frequently abort the disease at once. There is no other means ever used that equals this process of curing these conditions. Every variety of lung

affection should receive the treatment indicated, to take off the pressure and re-establish normal circulation to and from the lungs and heart, and to stimulate the nerve terminals, and to arrest all muscular contracture and compression of the chest contents, including liver, diaphragm and abdominal muscles. The equalization of the circulation must be brought about and maintained to restore and perpetuate life and health. The general treatment, then, should be applied in this pathological condition as far as necessary to accomplish freedom of vessels and nerves and lymphatics. All these are accomplished by the application of the foregoing principles effectually. Treatment should be made every day, or oftener, should emergencies demand it, partial or complete.

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## PULMONARY TUBERCULOSIS.

**SYNONYMS.** Phthisis pulmonalis; phthisis; consumption; pneumonic phthisis; tubercular phthisis.

**DEFINITION.** An infective disease, caused by the bacillus tuberculosis, the lesions of which are characterized by nodular bodies called tubercles or diffused infiltrations of tuberculous tissue which undergo caseation or sclerosis, and may finally ulcerate, or in some situations calcify.—Osler.

**CAUSE.** It is now generally accepted that all varieties of pulmonary consumption are due to the active presence of the bacillus tuberculosis, discovered by Koch in 1881. The lung tissue must be in a receptive state, as the bacilli may be present in the respiratory tract without the development of the disease. Any condition that lowers the tone of the general system renders the tissues susceptible to the changes produced by the tubercle bacilli. These will be enumerated in speaking of the clinical varieties of the disease.

**CLINICAL VARIETIES.** 1. Acute miliary tuberculosis; 2. Pneumonic phthisis; 3. Tubercular phthisis; 4. Fibroid phthisis.

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### I. ACUTE MILIARY TUBERCULOSIS.

**SYNONYMS.** Acute phthisis; galloping consumption.

**DEFINITION.** An acute infective febrile affection, due to the rapid eruption in various parts of the body, but especially in the lungs, of miliary tubercles; characterized by high fever, rapid



PLATE XXXVIII.—Dorsum, Leg-Extension Treatment.





pulse, hurried respiration, pains in chest, cough, profuse expectoration, and rapid prostration.

**CAUSES.** In the majority of cases it is the result of an auto-infection, arising from either an active or latent tuberculosis focus. Cases develop in which no cause can be assigned. Often follows measles, whooping-cough, variola, and influenza. Most common between puberty and middle life.

"That the gray granulation is deposited throughout the body under the influence of certain conditions of irritation, it is necessary that a peculiar vulnerability of the constitution exist, in other words, that it be of the scrofulous type.

**CLINICAL FORMS.** General or typhoid, pulmonary and cerebral. The cerebral will be described in the section on nervous diseases.

**PATHOLOGICAL ANATOMY.** Pulmonary Form.—"The gray granulation or miliary tubercle consists of a fine reticulation of fibers, with a mass of epithelioid cells and granules, and often having a giant cell for its center." The deposit is generally over both lungs and the bronchial tubes, and is followed by hyperaemia, increase of secretion, having a viscid and adhesive character, and the destruction of all the tissue with which it comes in contact. Deposits also take the place in the brain, pleurae, intestines, peritoneum, and kidneys.

**GENERAL OR TYPHOID.** Symptoms.—Gradual progressive weakness, with loss of appetite, dry, clean tongue, costive bowels, flushed cheeks, fever, irregular in type, and rapid, feeble pulse. Rarely the temperature reaches 103 degrees F. to 104 degrees F., associated with mild delirium. The respirations are increased with slight or no cough, and little or no expectoration. As the symptoms continue the prostration increases, cyanosis develops, the patient growing stupid, gradually deepening into coma and death.

**Diagnosis.**—There are none or so slight local conditions, the symptoms pointing to an acute general infection, that the disease is apt to be mistaken for typhoid fever. The points of difference are, absence of the typical typhoid temperature record, the characteristic eruption, and the diarrhea.

**Prognosis.**—Recovery is the rarest termination.

**PULMONARY FORM.** Symptoms.—The onset is usually sudden, with a chill or chilliness, followed by fever, 102 degrees to 104 degrees F., rapid, dicrotic pulse, 120-140, cough, with scanty, glairy sputum, increased respiration, 30-50 per minute, pain in

the chest, hot skin, dry tongue, deranged digestion, and great prostration, the severity of the symptoms rapidly increasing, with evidences of cyanosis, the sputum becoming more abundant and often rusty in color, with more or less frequent attacks of hæmoptysis, soon followed by headache, vertigo, sleeplessness, often delirium, coma, and death. If deposits have occurred in the meninges, or the intestines, symptoms of these affections are superadded.

**PERCUSSION.** The percussion resonance is normal until considerable deposits have occurred, when it is either slightly impaired or even slightly tympanic. With the development of cavities the amphoric percussion note is present.

**AUSCULTATION.** Vesiculo-bronchial breathing, associated with large and small, moist or bubbling rales, soon followed by bronchial and broncho-cavernous breathing, with large and small, moist and circumscribed gurgling rales.

**DURATION.** Acute phthisis usually terminates fatally in from four to twelve weeks. Rarely of several months' duration.

**DIAGNOSIS.** Commonly mistaken for typhoid fever with lung complications, an error that is readily made unless a close study of the history, symptoms, physical signs, and sputum be made.

#### THE TREATMENT.

In the early stages of this affection much may be done by applying the principles of Osteopathy to the contingencies as they arise, lifting off the weights that obstruct the breathing and blood circulation to and from the lungs and throughout the general system. Treat patient according to indications, and as often as the circumstances permit. Aim to relieve pressure.

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## II. PNEUMONIC PHTHISIS.

**SYNONYMS.** Chronic catarrhal pneumonia; catarrhal phthisis; caseous pneumonia; caseous phthisis.

**DEFINITION.** A form of pulmonary consumption characterized by the destruction of the pulmonary tissue resulting from the action of the bacilli, causing the caseation or cheesy degeneration of inflammatory products in the lungs, and the subsequent softening and destruction of the caseous matter, with greater or less destruction of the pulmonary tissue; characterized by hectic fever, cough, shortness of breath, purulent expectoration, and more or less rapid prostration.

**CAUSES.** The predisposing factor in the etiology of pneumonic phthisis is a strumous or scrofulous diathesis, or a condition of lowered health, the result of various unfavorable hygienic influences. The exciting causes are: the irritation produced by the presence of the bacillus tuberculosis and a catarrhal pneumonia in any portion of the lung, but especially at the apex; inflammation occurring about a blood clot; inhalation of irritant particles occurring in certain occupations, to-wit: weavers, grinders, miners, hatters, millers, cigar-makers, and the like. Many cases of pneumonic phthisis can be traced to an attack of influenza a year or so before.

**PATHOLOGICAL ANATOMY.** When a pneumonia terminates in resolution the inflammatory products are absorbed by first undergoing a fatty metamorphosis. If the fatty metamorphosis be incomplete the cells are atrophied and undergo the caseous degeneration, which consists in the absorption of the watery parts, the fatty degeneration of the cellular elements, and the granular disintegration of the fibrinous material, so that ultimately a soft, solid mass is produced, yellowish in color, having the appearance of cheese. The destructive changes are thus described by Niemeyer: "Cells, the products of inflammation, accumulate in the alveoli, and minute bronchi crowd upon each other, becoming densely packed, and thus, by their mutual pressure, they bring about their own decay, as well as that of the lung textures, by interfering with their nutrition, the alveolar walls being also themselves damaged by the inflammatory process."

The position of the catarrhal pneumonia resulting in the above changes is usually at the apex, but it may occur at any portion of the lungs, or a whole lung becomes infiltrated, and undergoes the cheesy degeneration (phthisis florida).

**SYMPTOMS.** Pneumonic phthisis occurs in three forms, the chronic, the subacute, and the acute.

**Chronic Form.**—The origin is rather insidious, the individual being susceptible to "colds," or "catarrhs," on the slightest exposure; gradually a persistent cough, with the expectoration of mucopus, is established, each severe cold being accompanied with chill, fever, pain in the chest, and either slight hemorrhage or blood-streaked sputa. Finally, the catarrhal symptoms become persistent, with morning chills, evening fevers, and rather profuse night sweats, distressing cough, profuse muco-purulent sputa, containing the bacilli, great weakness and exhaustion, loss of appe-



tite and feeble digestion, the symptoms growing persistently worse, death occurring from exhaustion after one or two years' duration.

**Subacute Variety.**—History of an acute attack of pneumonia of one or two weeks' duration, followed by a decided improvement, but not complete recovery. After a lapse of some weeks or months, symptoms of pulmonary softening begin, destroying the lung structure and forming cavities, accompanied by chills, fever, night sweats, emaciation, cough, muco-purulent and blood-streaked expectoration containing the bacilli, the patient dying from exhaustion within a year.

**Acute Variety.**—The so-called phthisis florida, runs a rapid course, beginning either as a croupous or catarrhal pneumonia, involving the whole of one or part of both lungs, associated with rapid loss of flesh and strength, high but variable temperature, 103 degrees to 105 degrees F., with remissions, profuse night sweats, shortness of breath, severe cough, profuse, purulent, and blood-streaked sputa containing the bacilli, loss of appetite, and feeble digestion, the patient succumbing in a few weeks or months from exhaustion.

A decided remission in the local and general symptoms of the acute variety may occur, the disease afterward pursuing a more chronic course.

**INSPECTION.** Shows deficient respiratory movements of the diseased portion of the lungs.

**PALPATION.** Increased vocal fremitus over the consolidated lung tissue and cavities.

**PERCUSSION.** The percussion note varies from a slight impairment of the normal note to dullness, and when cavities are formed, associated with scattered points of the tympanitic or hollow note. If the cavities communicate with a bronchial tube the cracked-pot or cracked-metal sound is elicited. If the cavities are filled with pus the percussion note is dull. If the pus be expelled, the tympanitic or cracked-pot sound returns.

**AUSCULTATION.** The vesicular murmur is unimpaired in those parts free from disease; it is feeble or indistinct if many bronchioles are obstructed; and is harsh or blowing if the bronchioles are narrowed. The inspiratory sound will be jerking, and the expiratory sound prolonged and blowing when the lung has lost its elasticity. Associated with the impaired vesicular murmur is a fine, dry, crackling sound (crepitation), appearing at the end of inspiration. If bronchitis be associated, large and small

moist or bubbling rales are also heard during respiration. When cavities form, either bronchial or broncho-cavernous respiration is heard, associated with more or less distinct gurgling rales. If the cavity be free from pus and have rather firm walls, the breathing is more amphoric in character.

**DIAGNOSIS.** Catarrhal bronchitis has many points of resemblance to pneumonic phthisis. The subsequent course of the latter, with the high temperature, prostration, emaciation, sputa containing bacilli, and physical signs will prevent error.

Acute fibrinous and catarrhal pneumonia, often after a course of two or three weeks, show the bacilli and yet are not recognized as tuberculosis. It is a safe rule of practice to suspect tuberculosis and examine daily for the bacilli in all cases of pneumonia that show the least tendency to linger, and particularly where there are chills and a remittent temperature record.

**PROGNOSIS.** Acute variety, the phthisis florida, usually terminates fatally within a few months.

The subacute and chronic varieties may, under judicious treatment and favorable hygienic conditions, be arrested, the caseous matter partly expectorated and partly absorbed, leaving more or less loss of structure, cicatricial tissue supplying its place, which after a time contracts, causing more or less retraction of the chest walls.

Cases not properly treated, either from carelessness or poverty, succumb after a year or two.

#### THE TREATMENT.

The early and persistent application of these principles cures many cases, mitigates suffering, and lifts the clouds of despondency from many a sad heart. Living witnesses are numerous, whose lives are veritable evidences of the efficiency of applied Osteopathy. Its possibilities are beyond computation, wonderful, always a source of relief, often effectual in curing. Treatment applied every other day, persistently and intelligently, works wonders in the end. Take courage.

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### III. TUBERCULAR PHTHISIS.

**SYNONYMS.** Tuberculosis; consumption; incipient phthisis; chronic phthisis; chronic ulcerative phthisis.

**DEFINITION.** A chronic pulmonary disease caused by the bacillus tuberculosis, resulting in the deposition of tubercle in the

lung structure, which in turn undergoes ulceration and softening, which results in a septic infection, characterized by progressive failure of health, fever, cough, dyspnoea, emaciation, and exhaustion.

**CAUSES.** Hereditary and acquired susceptibility to the influence of the bacillus tuberculosis. It is questionable if an individual is born with pulmonary tuberculosis, or makes his advent with tissues that are a congenial soil for the growth and ravages of this wide-spread germ. Amongst the acquired causes are syphilis, alcoholism, chronic nephritis, certain occupations, and living in damp, overcrowded, dark, and illy ventilated locations. Debility following an attack of influenza predisposes to the deposition of tubercle.

**PATHOLOGICAL ANATOMY.** Tubercle is a grayish-white, translucent, and semi-solid granulation, about the size of a millet seed, most commonly deposited in the walls of the bronchioles, exciting a low form of inflammation, the result of its own death. The masses of tubercle soon undergo softening (cheesy transformation); the lung structure is secondarily affected, undergoes softening, which results in more or less destruction of the tissue, whence cavities are formed. The inflammation may extend to the small arteries, causing hemorrhage. The deposit of tubercle is generally at one of the apices, and "once present in an apex, the disease usually extends in time to the opposite upper lobe; but not, as a rule, until the apex of the lower lobe of the lung first affected has been attacked. Lesions of the base may be primary, though this is rare." Depositions may also occur in the brain, intestines, and liver. The pleura is usually the seat of a chronic inflammation (dry pleurisy, tubercular), resulting in the obliteration of the pleural cavity.

**SYMPTOMS.** The symptoms correspond closely to the stages of deposition, of softening, septic infection, and of the formation of cavities. The development is insidious, with increasing dyspepsia and anaemia, the loss of appetite, distress after meals, and feeling of weakness, often misleading the patient and physician for some time until the occurrence of an irritable heart, a slight, dry hacking cough, referred to the throat or stomach, scanty, glairy expectoration, gradual loss of weight, impaired muscular strength, pallid appearance, and a more or less copious haemoptysis. Pain, sharp in character, below the clavicles, is often present. These symptoms are characteristic of the development of the disease.

The beginning of softening is announced by increased cough, freer expectoration, showing under the microscope the bacilli, dyspnoea increased on exertion, morning chills, evening fever and night sweats—the so-called hectic fever, diarrhea, increased emaciation and weakness, the patient, however, continuing very hopeful.

With the formation of the cavities, the cough is more aggravated, with profuse and purulent expectoration, at times containing yellow striae, the amount depending upon the number and size of the cavities; haemoptysis is not common at this stage; the pulse rapid and weak, increased hectic, burning of the soles and palms, copious night sweats, greater debility and emaciation, with oedema of the feet and ankles, denoting failure of the circulation, death soon following from asthenia, the mind clear and hopeful to the end.

**INSPECTION.** First Stage.—Often shows slight depressions in the supra-clavicular, and at times in the infra-clavicular regions.

**PALPATION.** Second Stage.—The vocal fremitus is slightly increased.

**PERCUSSION.** First Stage.—Slight impairment of the normal percussion resonance can sometimes be elicited. Second Stage.—The resonance is impaired, and may be even dull. Third Stage.—Dullness, with circumscribed spots of the amphoric, or tympanitic or cracked-pot sound.

**AUSCULTATION.** First Stage.—Inspiration jerky, expiration prolonged, the pitch higher than normal, the inspiration associated with crackling rales. Second Stage.—Vesiculo-bronchial breathing, associated with subcrepitant and large and moist or bubbling rales. Third Stage.—Bronchial, broncho-cavernous, and cavernous respiration, associated with large and small moist or bubbling and localized gurgling rales.

Bronchophony in its various degrees is associated with the second and third stages of tuberculosis.

**COMPLICATIONS.** Tubercular diseases of the brain, larynx, pleura, intestines, and peritoneum; perineal abscess leading to fistula, endocarditis, and myocarditis.

**DIAGNOSIS.** The early diagnosis of tubercular phthisis rests mainly on the history, together with the symptoms and physical signs. In the first stage it is often mistaken for dyspepsia, anaemia, malarial fever, or disease of the heart; if the bacilli can be found in the sputum the diagnosis is settled.



**PROGNOSIS.** In the main unfavorable, although under proper treatment, change of climate and like favorable conditions, life may be prolonged for years.

**TREATMENT.** See Fibroid Phthisis.

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#### IV. FIBROID PHTHISIS.

**SYNONYMS.** Chronic intestinal pneumonia; cirrhosis of the lungs; Corrigan's disease.

**DEFINITION.** A hyperplasia (thickening) of the pulmonary connective tissue, resulting in atrophy and degeneration of the vesicular structure, associated with bronchial inflammation; characterized by cough, profuse expectoration containing the bacillus tuberculosis, fever, emaciation, and ultimately death by asthenia.

**CAUSES.** Hereditary predisposition; inhalation of irritants and associated with certain occupations, such as stone cutters, grinders, etc. Following lobar pneumonia; chronic bronchitis; alcoholism; syphilis; chronic nephritis.

**PATHOLOGICAL ANATOMY.** Thickening of the bronchial mucous membrane and dilatation of the air tubes; hyperplasia of the pulmonary connective tissue, resulting in the compression and consequent destruction of the vesicular structure, which is assisted by the contraction of the newly formed tissues. Sooner or later catarrhal pneumonia results, the product undergoing the cheesy degeneration, cavities being formed, and as a result of the long continued suppuration, tubercular depositions occur, hastening the destruction of the lung tissue.

Professor Da Costa has reported a number of cases of "grinders' phthisis," in whose sputum was found the "bacillus tuberculosis," and in whose family history there were no traces of consumption.

**SYMPTOMS.** The course is chronic, beginning as a bronchial catarrh, worse in winter, better in summer, when, after several years, the cough becomes more continuous, the expectoration freer and muco-purulent, containing the bacillus tuberculosis in large numbers, hectic fever develops, night sweats, dyspnoea, and rapid emaciation, soon followed by oedema of the feet and ankles, the result of failing circulation, death occurring by asthenia.

**INSPECTION.** Depression of the chest walls.

**PERCUSSION.** Impaired resonance, followed by dullness,



PLATE XXXIX.—Dorsum Treatment of Kidneys.



with irregular spots of amphoric or tympanitic percussion note over the points of depression.

**AUSCULTATION.** First Stage.—Vesiculo-bronchial, or harsh respiration associated with large and small, moist or bubbling rales, followed by bronchial, broncho-cavernous, and cavernous respiration, with circumscribed gurgling rales.

**DIAGNOSIS.** Beginning as a bronchial catarrh, slowly progressing, with the remission of the symptoms during the summer months, finally becoming progressively worse, the discovery of the bacilli in the sputum, with the formation of cavities, and symptoms of asthenia, are the chief points in the diagnosis.

**PROGNOSIS.** The duration of fibroid phthisis is most protracted, six to twelve years being the average duration; death, however, is the inevitable termination.

Professor Da Costa has records from one hundred deaths from "grinders' consumption" whose average life was twelve years.

#### THE TREATMENT.

To presume to assert that Osteopathy in any way favorably affects tuberculosis at once brings down upon the head of the manipulator supreme contempt. The habit of taking medicine (although without a cure) is so deeply rooted in the mind, that to pretend to benefit anybody otherwise seems the height of supreme ridiculousness to nearly everybody! When it is recognized that blood "is the life of man," and that it must be kept up to a normal and perfect standard, and that this can only be done by uninterrupted circulation and contact with oxygen, and that for the most part in the lungs, there will not be so much wonder at the idea of adjustment of the system so to itself as to promote it; and there will be less opposition manifest along these lines. To keep up a normal circulation means health, and however prone by heredity to take on this affection, from undue exposure or otherwise, a constant regard to the circulation and to the respirations will be had, and early promotion of these two essentials will ward off the disease; and when disease is noticed, especially in its early stages, many cases can be permanently cured, and others greatly relieved. The whole system should be adjusted to itself as often as twice or three times a week, and the patient instructed how to breathe correctly, to live long on earth. The various manipulations recommended to promote and keep up a normal circulation should be repeatedly and scientifically applied, ad libitum.



## DISEASES OF THE PLEURA.

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### PLEURISY.

**SYNONYMS.** Pleuritis; "stitch in the side."

**DEFINITION.** A fibrinous inflammation of the pleura, either acute, subacute, or chronic in character, occurring either idiopathically or secondarily; characterized by a sharp pain in the side, a dry cough, dyspnœa, and fever. It may be limited to a part, or may involve the whole of one or both pleural membranes.

**CAUSES.** Idiopathic pleuritis is said to be due to cold and exposure, to injuries of the chest walls, or the result of muscular exertion. Tuberculosis is the cause of a few acute pleurisies. Secondary pleuritis occurs during an attack of pneumonia, pericarditis, rheumatism, variola, scarlatina, measles, Bright's disease, or puerperal fever. Chronic pleurisy follows an acute attack or is the result of tuberculosis, Bright's disease, or alcoholism.

**PATHOLOGICAL ANATOMY.** The course pursued by an inflammation of a serous membrane is hyperaemia followed by exudation of lymph, the effusion of fluid, its absorption, and the adhesion of the membranes. The first or dry stage is a hyperaemia or diffused irregular redness of the membrane, with little specks of exudation. The second stage is characterized by the copious exudation of lymph, more or less completely covering the membrane, giving it a dull, cloudy, or shaggy appearance. If the inflammation ceases at this point, it is termed dry pleurisy. The third, or stage of effusion, is characterized by the pouring out of a semi-fibrinous liquid, more or less completely filling and distending the pleural cavity, and floating in the fluid are fibrinous flocculi, blood, and epithelial cells. Absorption of the fluid and more or less of the exudative lymph soon occurs, the unabsorbed portion becoming organized, forming adhesions which obliterate the pleural cavity. The effusion, if on the right side, pushes the heart further to the left; if on the left side, the heart is displaced to the right, the impulse often being seen to the right of the sternum. The lungs are also compressed and displaced upward and against the spinal column, and, on removal of the fluid, expand again, except in cases of chronic pleurisy, when the functional activity of the pulmonary structure is more or less permanently impaired.

Chronic pleurisy results when the fluid is not absorbed or

when it is effused into the cavity in a slow and insidious manner. The membrane is irregularly thickened, with firm adhesions, fluid being found in the meshes; depressions of the thoracic walls also occur. The fluid may be serum, pus (empyema), or pus and blood. Openings may form, through which there is a permanent discharge, either externally (fistulous empyema) or into the bronchi, or, rarely, into the bowels.

**SYMPTOMS.** *Acute Variety.*—Begins with a chill, followed by a sharp lancinating pain (stitch) near the nipple or in the axilla, aggravated by coughing and breathing, associated with slight tenderness on pressure. The respirations are rapid and shallow, 30-35 per minute, a short, dry, hacking cough, moderate fever, compressible pulse, 90-120. With the effusion of liquid the dyspnoea becomes aggravated, the cough more distressing, the cardiac action embarrassed, the countenance wearing an anxious expression, the patient usually lying on the affected side. With the absorption of the fluid the symptoms gradually ameliorate, convalescence being more or less rapid.

*Subacute Variety.*—Begins insidiously after cold, exposure, and fatigue in those enfeebled. Patients usually complain of a sense of weariness, shortness of breath, aggravated on exertion, evening fever, followed by night sweats, short, harassing cough, none or very scanty sputum; the pulse is small, feeble, but frequent, 100-120 beats per minute. The characteristic pain in the side is usually wanting.

*Chronic Variety.*—Irregular chills, fever, night sweats, dyspnoea, palpitation, embarrassed circulation, with more or less prostration.

**INSPECTION.** *First Stage.*—Deficient movement of the affected side, on account of the pain induced by full breathing. *Second Stage.*—Bulging or fullness of the affected side, with obliteration of the intercostal spaces and displacement of the cardiac impulse.

**PALPATION.** *Second Stage.*—Vocal fremitus feeble or absent over the site of the effusion, exaggerated above the site of the fluid. Rarely, fluctuation may be obtained.

**PERCUSSION.** *First Stage.*—May be slightly impaired. *Second Stage.*—Dullness or even flatness over the site of the effusion; tympanitic percussion note above the fluid.

**AUSCULTATION.** *First Stage.*—Feeble vesicular murmur over the affected side, the patient breathing superficially, to prevent the pain; a friction sound, slight and grating or creaking,

becoming louder as the exudation of lymph increases, limited usually to the angle of the scapula of the affected side, rarely heard over the entire side, accompanies the respiratory movements. Second Stage.—Feeble or absent vesicular murmur on the affected side, depending upon partial or complete compression of the lungs by the fluid. Above the fluid puerile breathing, and just at the upper margin of the fluid, a friction sound may be heard. The vocal resonance is diminished or absent over the site of the fluid and markedly increased above, aegophony being present at the upper margin of the fluid. With the absorption of the fluid the vesicular murmur gradually returns, associated with a moist friction sound.

DIAGNOSIS. Acute pneumonia is often mistaken for the effusion stage of pleurisy. The points of distinction are, in pneumonia there are the pronounced chill, high fever, characteristic sputa, bronchial breathing, exaggerated vocal fremitus and resonance, and no displacement of the heart, the reverse occurring in pleurisy.

Enlargement of the liver may be mistaken for pleurisy with effusion, the chief point of distinction being that, in enlargement of the liver, the superior line of dullness is depressed upon full inspiration, while in pleurisy with effusion inspiration does not modify the location of the dullness.

PROGNOSIS. Idiopathic pleurisy usually terminates in recovery within three weeks. Pleurisy the result of constitutional causes has its prognosis modified by the condition with which it is associated. Empyema, unless the result of a diathesis, terminates favorably. Double pleurisy is unfavorable. The etiological factor of tuberculosis must always be borne in mind in making a prognosis in pleurisy, whether acute or chronic.

#### THE TREATMENT.

The same as for Asthma, the object being to take off the pressure. Daily manipulations, or even twice a day in acute forms, will relieve all the difficulty at once, within a day or two, and disperse the effusion so as that all further trouble is removed—arrested. The usual six weeks' suffering is aborted. The pleura acting as an assistant to expiration, it can be easily understood why breathing is limited to short and quick exhalations, attended with pain, in infiltrations of this organ. The closure of the lymph tubes causes accumulation, lessens action of the muscles of respiration, crowds other organs, fills the chest cavity, holds taut the intercostal muscles, and as the accumulation



increases the pain keeps intensifying, until partial paralysis of sensory and sympathetic nerves ensues. Relaxation allows transudation and exudation and gradual absorption of fluid. The remedy with the Osteopath is, take off the pressure and open up the outlets (the channels that are closed, causing the accumulation), and the effects at once subside—the relief comes at once. Any objection to this? Why didn't this occur to the physician a long time ago? Why doesn't it occur to him now? The raising of the arm on the side of the pain, as STRONGLY as the patient can well bear, whilst a long and as deep inspiration as possible for the patient to bear is made, and a strong pressure is made with the fingers at the side of the spine about the seventh and eighth dorsal vertebrae, held there a moment, and then quickly returned to the side, clears out the intercostal spaces of venous blood, opens the tubes in the pleura itself, relaxes the muscular fibers of the two walls of the pleura, and disengorgement takes place as if by magic—the condition is changed, a cure is effected. One or two treatments usually suffice to clear out the whole of the obstruction. The general treatment of the upper portion of the body is well enough to make, for equalization of all the forces is an essentiality to right the malcondition of the blood and other fluids involved. In chronic pleurisy a repetition of the same treatment soon restores the parts to a normal state. These treatments should be mild, slowly performed, and thoroughly done, and the results are invariably satisfactory. Every other day is often enough to treat the patient for chronic pleurisy. The head, neck, chest and spine should receive particular and special attention each time. Do not fail to use vibratory manipulations over the painful parts. Rapid circular vibratory movements are most effectual.

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### HYDROTHORAX.

**SYNONYM.** Dropsy of the pleura.

**DEFINITION.** The effusion of the fluid into the pleural cavities (bilateral), the result of a general dropsy from renal or cardiac disease.

**PATHOLOGICAL ANATOMY.** More or less clear serous fluid in both pleural sacs, compressing the lung. No signs of inflammation are present.

**SYMPTOMS.** Following dropsy of the abdomen occurs



dyspnœa, with signs of deficient blood aeration, both lungs being compressed.

PALPATION. Absent vocal fremitus over the site of the fluid.

PERCUSSION. Dullness over the site of the fluid.

AUSCULTATION. Absent vesicular murmur over the site of the fluid.

DIAGNOSIS. Easily determined by association of the symptoms with a general dropsy.

PROGNOSIS. Controlled by the cause producing the general dropsy.

#### THE TREATMENT.

The treatment for the affections causing it is the rational course to pursue. If the heart is affected, direct attention to it. If the kidneys are diseased, use the means provided therefor. As in all cases of dropsy, the effusion comes from obstructed venous return circulation. That may result from nerve pressure, arresting capillary circulation, and the watery portions (70 per cent.) of the blood exuding through the walls of the capillaries; or, if from engorgement of veins, the broken-down tissue can not escape through the lymph canals, and the fluid increases, hence the dropsy of the pleura. The relief may be afforded in two ways: One by paracentesis thoracis, and the other by general treatment, to open the outlets through which the fluids normally escape. The pressure is due to contraction of the chest walls, and preventing escape from the intercostal veins into the azygos veins, thus preventing chest expansion, hence closure of outlets—tubes. The treatment must be directed especially to the respiratory muscles, to the ribs, clavicles, neck and spinal and abdominal muscles. Also see to the veins of the lower limbs (the saphenous) and lumbar and sacral nerves, and especially relieve the kidneys, at the renal splanchnic—the lower splanchnic area, twelfth dorsal. Institute stated acts of respiration and see to it that all the large veins are properly relieved of their accumulated contents. The liver should not be slighted. Frequent bathing of the whole body with tepid water, to keep the skin healthy, is essential.

The tissue elements should be supplied also. The potass. chloride is one of the elements needed to aerate the blood. The sodium sulph. becomes the remedy when the areolar tissue is involved, and the sodium chloride is indicated where the subcutaneous tissue is involved; calcium phos., if from non-assimilation of food; ferric phos., if from loss of blood; calcium fluoricum, if

from heart disease, dilatation of cavities; and potass. sulph. after scarlatina and where there is deficiency of perspiration.

These belong to no system of medication, are not medicines, but simply elements of the system, which, when deficient, should be supplied.

It will be found of great importance to know when to supply these elements, and to be informed on this subject the reader should study Schussler's "Biochemic Treatment," which may be obtained at almost any Homeopathic pharmacy in the country, by M. Docetti Walker, M.D.; compiled by Drs. Boericke and Dewey, San Francisco, California. Luyties' Hom. Phar. Co., 306 N. Broadway, St. Louis, Mo., sell it. \$1.50.

Our success depends largely on what we know. The physician's quiver should be full of arrows. This life is one of warfare with the enemy that has great power, and persistently claims his victim, and at the last "mows him down." All are his subjects. Our time is set. He is the executioner. Be ready.

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## PNEUMOTHORAX.

**SYNONYMS.** Air in the pleural cavity; hydropneumothorax.

**DEFINITION.** The accumulation of air in the pleural cavities, with the consequent development of inflammation of the membranes; characterized by sharp pain, followed by rapidly developing dyspnoea and cough.

**CAUSES.** Generally the result of tubercular phthisis, causing perforation of the pleura. Perforation may take place from the pleura into the lung, in connection with empyema or abscess of the chest wall. Direct perforation from without, by laceration of a fractured rib or severe contusion.

**PATHOLOGICAL ANATOMY.** The gas in the pleural cavity consists of oxygen, carbon anhydride, and nitrogen in variable proportions. It may fill the pleural sac completely, compressing the lung, or is sometimes limited by adhesions. The gas tends to excite inflammation, the resulting effusion being either serous or purulent.

**SYMPTOMS.** Symptoms of pneumothorax, the result of perforation, are sudden or sharp pain in the side, intense dyspnoea, attended with symptoms of collapse, coldness of the surface, and cold sweats. These symptoms, in many instances, follow a severe or violent paroxysm of coughing. In severe cases there is never

a moment's cessation of the acute pain and distressing dyspnoea, causing orthopnoea from the onset until death.

**INSPECTION.** Enlargement of the affected side, the intercostal spaces being widened and effaced or even bulged out so that the surface of the chest is smooth. Respiratory movements of the affected side are diminished or absent.

**PERCUSSION.** Immediately after the rupture the percussion note is hyper-resonant, or even tympanitic or amphoric in quality. If the amount of air in the pleural cavity becomes extreme, there is dullness on percussion, associated with a feeling of great resistance or density. When effusion of blood occurs, dullness is observed over the lower part of the chest, hyper-resonant or tympanitic percussion note over the upper portions of the chest, these sounds changing as the patient changes position.

**AUSCULTATION.** The normal vesicular murmur may be diminished or absent. The typical amphoric respiratory sound is heard when the fistula is open, usually associated with a metallic echo. Metallic tinkling, or the bell sound, is sometimes distinctly produced by breathing, coughing, or speaking, after the development of inflammation of the pleura. The vocal resonance may be diminished or absent, or, rarely, it may be exaggerated, with a distinct metallic echo. After the development of inflammation in the pleura, suddenly shaking the patient gives rise to a splashing sensation, the succussion sound, if both air and fluid are present in the pleural cavity.

**PROGNOSIS.** When occurring as the result of tuberculosis, the prognosis is extremely unfavorable; rarely, the fistulous opening being inclosed by inflammatory action; the case then becomes one of chronic pleurisy.

#### THE TREATMENT.

The first thing to be done is to use the aspirator, to relieve the pressure. Close up the orifice in which air enters, expand the chest walls on both sides and use the arm movements, inhalations and dorsal manipulations to induce absorption of the air. If the pleura is inflamed, treat the patient as directed for it. The application of the principles of Osteopathy is to be studied in all cases, and skill is required in this, as in all other sciences, to succeed. The desideratum to achieve lies in removing the pressure, as every one should understand. Raising the clavicles, arms, ribs, diaphragm, and the vibratory manipulations over the part affected result most satisfactorily, generally. The cases are rare, but when met with, must be met understandingly or censure is sure to be heaped upon you.



PLATE XL.—Scapula, Dorsum and Shoulder Treatment.





# DISEASES OF THE CIRCULATORY SYSTEM.

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The methods employed in making a physical examination of the heart are: 1. Inspection. 2. Palpation. 3. Percussion. 4. Auscultation.

## INSPECTION.

INSPECTION indicates the exact point of the cardiac impulse, and the presence or absence of any abnormal pulsations or any change in the form of the præcordium. Normally, the impulse is visible only in the fifth interspace, midway between the left nipple and the left border of the sternum, its area covering about one square inch, most distinct in the thin, while often barely seen in the very fleshy; often displaced downward by full inspiration and elevated by complete expiration. Disease may alter the position and area of the impulse.

The position of the impulse is moved to the right by left pleuritic effusions; downward by cardiac hypertrophy or pulmonary emphysema; upward by a pericardial effusion.

The area of the impulse is changed and enlarged by pericardial adhesions, cardiac dilatation, or hypertrophy.

## PALPATION.

PALPATION confirms the observations of inspection, and also determines the force, frequency, and regularity of the cardiac impulse. The force of the impulse is diminished by cardiac dilatation, fatty and fibroid degenerations of the heart, emphysema, pericardial effusion, and adynamic diseases. The impulse is increased by cardiac hypertrophy, during the first stage of endocarditis and pericarditis, functional cardiac disturbances and sthenic inflammations.

## PERCUSSION.

PERCUSSION will determine the boundaries of the superficial and deep cardiac space, the so-called præcordium. It is essential that the upper, lower, and two lateral boundaries of the pericardial region be memorized, to-wit: superior boundary, the upper edge of the third rib; the lower boundary is a horizontal line passing through the fifth intercostal space; the left lateral boun-

dary is about or a little within a vertical line passing through the nipple, the *linea mammalis*; and the right lateral boundary is an imaginary vertical line situated one-half an inch to the right of the sternum. These boundaries vary somewhat in health, but are sufficiently accurate for all practical purposes.

The superficial cardiac space represents that portion of the heart uncovered with lung; it is triangular in form, its apex being the junction of the lower border of the left third rib with the sternum, its area not exceeding two inches in any direction. The superficial space is increased by cardiac hypertrophy, dilatation, or pericardial effusion. Diminished at the end of full inspiration or by emphysema.

The deep cardiac space represents that portion of the heart covered by lung, and extends from the upper border of the third rib to the lower edge of the fifth interspace, and from half an inch to the right of the sternum to near the left nipple. It is increased by hypertrophy or dilatation of the heart, left pleuritic effusion, and apparently increased by consolidation of the anterior border of the investing lung.

#### AUSCULTATION.

AUSCULTATION indicates the character of the normal cardiac sounds, and the point at which they are heard with greatest intensity, and should be thoroughly familiarized if abnormal sounds are to be fully appreciated.

The ear or stethoscope applied to the *præcordium* distinguishes in health two sounds, separated by a momentary silence—the short pause, and the second sound followed by an interval of silence—the long pause.

The first sound, corresponding to the contraction of the heart—the systole—is louder, longer, and of a lower pitch and a more booming quality than the second sound, and has its point of greatest intensity at the cardiac apex or a little to the left. It corresponds closely in time to the pulsations as felt in the carotid or radial arteries.

The second sound is shorter, weaker, and higher in pitch than the first sound, and has a clicking or valvular quality, having its point of greatest intensity at the second right costal cartilage and a little above, and corresponds to the closure of the aortic and pulmonary valves. The sound made by the closure of the tricuspid valves is best isolated at the ensiform cartilage. The sound made by the closure of the pulmonary valves at the third left costal cartilage.

The extent of surface over which the cardiac sounds are heard varies, according to the size of the heart and the condition of the adjacent organs for transmitting sounds. These sounds may be altered in intensity, quality, pitch, seat, and rhythm, or they may be accompanied, preceded, or followed by adventitious or new sounds, the so-called endocardial or cardiac murmurs. The intensity is increased by cardiac hypertrophy, irritability of the heart, or consolidation of adjacent lung structure. The intensity is diminished by cardiac dilatation or degeneration, during the course of adynamic fevers, emphysematous lung overlapping the heart, or pericardial effusion.

The quality and pitch of the first sound may be sharp or short and of higher pitch when the ventricular walls are thin, or have undergone beginning fibroid change, the valves being normal; its pitch and quality are also raised during the course of low fevers. The second sound becomes duller and lower in pitch when the elasticity of the aorta is diminished or the aortic valves thickened. Either or both sounds have a more or less metallic quality in irritable heart and during gaseous distention of the stomach.

The seat of greatest intensity of the cardiac sounds is changed by displacement of the heart, pleuritic effusion, pericardial effusion, and abdominal tympanites.

The rhythm is often interrupted by a sudden pause or silence, the heart missing a beat, or the sounds are irregular, confused and tumultuous, the result of organic changes in the cardiac muscle, valves, or orifices; or a reduplication of one or both sounds of the heart may occur.

The adventitious cardiac sounds or murmurs are of two kinds, those made external to the heart, as pericardial, exocardial, or frictional murmurs, and those made within the cardiac cavity, endocardial murmurs.

Pericardial murmurs, or friction sounds, are made by the rubbing upon one another of the roughened surfaces of the pericardial membrane during the early stages of inflammation. The sounds have a rubbing, creaking, or grating character, and are differentiated from a pleural friction sound by their being limited to the praecordium, synchronous with every sound of the heart, and not influenced by respiration. They are distinguished from an endocardial murmur by their superficial rubbing, creaking, or grating character, and by not being transmitted beyond the limits



of the heart, either along the course of the vessels, or to the left axilla, or back.

Endocardial murmurs are of two kinds, to-wit: organic and functional.

Functional endocardial or blood murmurs are the result of changes in the natural constituents of the blood. Their character is soft, they are heard most distinctly at the base to the left of the sternum, during the systole, are not transmitted beyond the limits of the heart, either to the left axilla or the back, and are associated with general anaemia.

Organic endocardial murmurs are produced by blood currents pursuing either a normal or an abnormal direction.

In health there are two direct blood currents upon each side of the heart, to-wit: the current from the left auricle to the left ventricle, the mitral direct current; the current from the left ventricle to the aorta, the aortic direct current; the current from the right auricle to the right ventricle, the tricuspid direct current, and the current from the right ventricle to the pulmonary artery, the pulmonic direct current.

When, from disease, the valves are not properly closed, the blood is allowed to flow back against the direct current, producing abnormal blood currents, to-wit: when the mitral valve is incompetent, the blood flows from the left ventricle back into the left auricle during the cardiac systole, producing the mitral regurgitant or indirect current; when the aortic valves are incompetent, the blood is permitted to flow from the aorta into the left ventricle during the cardiac diastole, producing the aortic regurgitant or indirect current; when the tricuspid valves are incompetent, the blood flows from the right ventricle back into the right auricle during the systole, producing the tricuspid regurgitant or indirect current; when the pulmonary valves are incompetent, the blood flows from the pulmonary artery into the right ventricle, producing the pulmonic regurgitant or indirect current.

The mitral direct current occurs during the contraction of the left auricle, or just before the first sound of the heart and immediately after its second sound. The aortic direct current is produced by the contraction of the left ventricle, and occurs with the first sound of the heart. The tricuspid direct current occurs during the contraction of the right auricle, or just before the first or immediately after the second sound. The pulmonic direct current is produced by the contraction of the right ventricle, occurring during its first sound.

The mitral direct or presystolic murmur occurs before the first sound of the heart and immediately after the second sound. It is caused by a narrowing of the mitral orifice, has a blubbery quality, well imitated by throwing the lips into vibration by the breath, of a low pitch, and it has its seat of greatest intensity at the cardiac apex, and is not transmitted to the left axilla or to the base of the heart.

The mitral regurgitant or systolic murmur occurs with the first sound of the heart, resulting from the failure of the mitral valves to close the mitral orifice during the systole, in consequence of which the blood flows back, or regurgitates into the left auricle. It is usually of a blowing or churning character, and has its seat of greatest intensity at the cardiac apex, being well transmitted to the left axilla and inferior angle of the left scapula.

The aortic direct murmur occurs with the first sound of the heart. It is caused by a narrowing of the aortic orifice, has a rough or creaking character, is of high pitch, having its seat of greatest intensity in the second intercostal space, to the right of the sternum, and is well transmitted over the carotid artery.

The aortic regurgitant murmur occurs with the second sound of the heart, and is caused by the failure of the aortic valves to close the aortic orifice during the diastole, permitting the blood to flow back or regurgitate into the left ventricle. It is usually of a blowing or churning character and of low pitch, having its seat of greatest intensity over the base of the heart, and is well transmitted downward toward or below the cardiac apex. It is the only organic murmur produced in the left side of the heart which occurs with the second sound of the heart.

The tricuspid direct murmur occurs before the first sound of the heart, the result of the failure of the tricuspid valves to close by a narrowing of the tricuspid orifice, has a blubbery quality, and is low in pitch, having its seat of greatest intensity near the ensiform cartilage. This murmur is exceedingly rare.

The tricuspid regurgitant murmur occurs with the first sound of the heart, the result of the failure of the tricuspid valves to close the tricuspid orifice during the systole, thus allowing the blood to flow back or regurgitate into the right auricle. It is usually of a blowing or soft, churning character, having its seat of greatest intensity at the ensiform cartilage. This murmur is also very infrequent, and occurs mostly when the right ventricle is considerably dilated, and without the existence of any valvular disease.

The pulmonic direct murmur occurs with the first sound of the heart. It is generally connected with congenital lesions. It occurs at the same instant that the aortic direct murmur occurs, and is distinguished from the latter by its not being transmitted into the carotid artery, whereas the aortic direct murmur is always thus transmitted.

The pulmonary regurgitant murmur occurs, like the aortic regurgitant murmur, with the second sound of the heart. This murmur is exceedingly rare, and its presence is only positively differentiated from the aortic regurgitant murmur by the absence of aortic lesions and symptoms.

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### ACUTE PERICARDITIS.

**DEFINITION.** An acute fibrinous inflammation of the pericardium; characterized by slight fever, pain, praecordial distress, and disturbed cardiac action and circulation. If the inflammation be limited to the parietal or visceral layer, or to a part of either, it is termed partial or circumscribed pericarditis; if it involve the whole of both surfaces it is termed general or diffused pericarditis. The inflammation may be primary or secondary.

**CAUSES.** Primary pericarditis is rare, resulting directly from cold and exposure or injuries. Secondary pericarditis follows, or is associated with, rheumatism, influenza, scarlatina, variola, puerperal fever, tuberculosis, septicaemia, Bright's disease, gout, scurvy, and diabetes. It is frequently associated with pneumonia and pleuro-pneumonia, particularly in alcoholics.

**PATHOLOGICAL ANATOMY.** The same as of serous membranes in other situations. The morbid changes may be seen, as (1), acute plastic, or dry pericarditis (frequently tubercular), (2), pericarditis with effusion, sero-fibrinous, hemorrhage, or purulent.

Hyperaemia of the membrane, most marked on the visceral layer, followed by the exudation of lymph scattered in irregular patches, giving it a rough and shaggy appearance (dry pericarditis), followed by the effusion of a sero-fibrinous fluid, with flocculi floating in it, and at times mixed with blood. Rarely, the fluid is purulent.

The fluid and lymph undergo absorption with resulting adhesions identical with those described under pleurisy.

**SYMPTOMS.** Acute pericarditis may be well marked and still



present none of the characteristic subjective symptoms. It usually begins with rigors, fever of the remittent type, frequently nausea and vomiting, praecordial distress, and tenderness, acute shooting pains, increased by breathing and coughing, dry, suppressed cough, increased cardiac action, and sometimes violent palpitation. An attack of pericarditis secondary to an existing disease presents no marked symptoms other than those mentioned to indicate its onset. Attacks of nausea and vomiting occurring during the course of rheumatism, pneumonia, pleurisy, and nephritis, should call attention to the heart. Duration of this early stage from a few hours to a day or two.

**Effusion Stage.**—The symptoms of this stage are in keeping with the amount and rapidity of the effusion: praecordial oppression, tendency to syncope, dyspnoea, sometimes amounting to orthopnoea, dysphagia, hiccough, nausea and vomiting, feeble, irregular pulse, sometimes either melancholia, delirium, or acute maniacal excitement.

Absorption is generally rapid, the heart remaining "irritable" for a long time after. If, instead of absorption, the fluid accumulates, and life is not destroyed, the pericardial sac becomes dilated, chronic pericarditis resulting.

**INSPECTION.** Early Stage.—Excited cardiac action is evidenced by the impulse. Effusion Stage.—Feeble, undulatory or absent impulse, its position displaced upward, or, rarely, downward, bulging of the praecordium and protruding abdomen.

**PALPATION.** Early Stage.—Excited or tumultuous impulse; pericardial friction fremitus rare. Effusion Stage.—Feeble or absent impulse, and if present its position is changed.

**PERCUSSION.** Early Stage.—Normal. Effusion Stage.—Cardiac dullness enlarged vertically and laterally, and if considerable fluid, of a triangular shape, with the base of the triangle on a line with the sixth or seventh rib, extending from the right of the sternum to the left of the left nipple, narrowing as it proceeds upward to the second rib, or above, which represents the apex of the triangle. The shape of the dullness is sometimes altered by changing the position of the patient.

**AUSCULTATION.** Early Stage.—Excited cardiac action, and usually a friction sound (exocardial murmur) synchronous with cardiac sounds and uninfluenced by respiration, but often increased by pressure with the stethoscope. Effusion Stage.—Cardiac sounds feeble and deep-seated at the cardiac apex, becoming louder and distinct toward the cardiac base. The friction



sound is sometimes heard at the cardiac base. If absorption occur, the above signs gradually give place to the normal, the friction sound returning, of a churning, or clicking, or grating character, gradually disappearing.

**DIAGNOSIS.** Endocarditis is often confounded with pericarditis, the points of distinction between which will be pointed out when discussing that affection. Cardiac hypertrophy or dilatation is sometimes confounded with pericardial effusion, the differences between which will be pointed out when discussing those affections. Hydro-pericardium may be mistaken for pericardial effusion; see that affection.

**PROGNOSIS.** Controlled by the severity of the inflammation, causes, and coexisting affections. If slight effusion, favorable. Death has quickly occurred when a large quantity of fluid has been rapidly effused, the patient being really drowned in his own fluid. Adherent pericardium is a frequent sequela.

#### THE TREATMENT.

The results of venous obstruction are seen here as in all other parts of the system. The obstruction is usually due to compression of the upper chest walls, due to contraction of the pectoral and intercostal muscular fibers, causing contraction of space for the action of the heart, hence venous obstruction and engorgement of the covering of the heart—pericardium. The most wonderful results attend the lifting off of the pressure, as indicated above—the only thing to do in the case. Such measures as seem indicated should be instituted, and gently, persistently applied, and relief is at once obtained. The medication used to promote circulation and to reduce inflammation needs proof of its efficacy before further trifling with life, waiting on a supposed probability of its curative powers. What else is needed than to open the channels closed by pressure, and let the pent-up foreign fluids be carried out, healthy arterial blood come in and supply the normal elements to build up the waste and repair the damages sustained? Think of it! Many a “heart failure” is recorded that need not have been, had Osteopathy been known and applied. Lift off the pressure. Let circulation proceed.



PLATE XI. — Spinal Concussion, Knuckle Treatment.



## CHRONIC PERICARDITIS.

**DEFINITION.** A chronic inflammation of the pericardium, with either distention of the sac by fluid or adhesions of the pericardium (adherent pericardium); characterized by impaired cardiac action and disturbances of the circulation.

**CAUSES.** Almost always the result of an acute attack.

**PATHOLOGICAL ANATOMY.** If the effusion be absorbed, the pericardial surfaces are agglutinated by several layers of lymph, which increase the thickness of the membranes half an inch or more, and the outer surface of the pericardium becomes adherent to the chest walls. If the fluid be not absorbed, it may progressively accumulate, distending the sac in all directions, displacing the diaphragm and interfering with the functions of the surrounding viscera, or a low grade of inflammation supervenes, the fluid becoming purulent, the disease terminating fatally after a variable period. As much as eight to ten pints of fluid have accumulated in the sac.

**SYMPTOMS.** Praecordial pain and distress, irregular, feeble cardiac action, dyspnoea aggravated by movement, and disturbed circulation. An agglutinated pericardium seriously increases the danger from an attack of any pulmonary inflammation.

**INSPECTION.** If the effusion be present, bulging of the praecordium and displacement of the impulse. If adhesions are formed between the pericardial surfaces as well as with the chest walls, inspection reveals depression of the praecordium, narrowing of the spaces, increased extent but displaced impulse, uninfluenced by deep inspiration, and recession of the intercostal spaces (systolic dimpling) and epigastrium with every systole of the heart, the result of the adhesions.

**PALPATION.** If effusion, displaced, feeble or absent impulse; if adhesions, displaced and tumultuous impulse; occasionally a pericardial fremitus is distinguished.

**PERCUSSION.** If effusion, the dullness has more or less the character described for acute pericarditis. If adhesions, the cardiac dullness is but slightly modified.

**AUSCULTATION.** If effusion, cardiac sounds feeble and deep-seated at the apex, louder and more distinct at the cardiac base. If adhesions, cardiac sounds are heard with equal distinctness in their several positions, associated with a rough friction sound (exocardial murmur).

**TREATMENT.** Same as for Acute Pericarditis.



## HYDRO-PERICARDIUM.

SYNONYM. Pericardial dropsy.

DEFINITION. The accumulation of water in the pericardial sac, minus inflammation; characterized by praecordial distress, disturbed cardiac action, dyspnoea, and dysphagia.

CAUSES. Usually a part of a general dropsy; Bright's disease; sudden pneumothorax; pressure of an aneurism or other mediastina tumor; disease or thrombosis of the cardiac veins.

PATHOLOGICAL ANATOMY. The fluid may range in quantity from an ounce to one or two pints, and is of a clear, yellowish or straw-colored serum, at times turbid or bloody, and of an alkaline reaction. If the amount of fluid be large the sac is dilated, its walls thinned by the pressure, and has a sodden appearance.

SYMPTOMS. Dropsy of the pericardium is so generally associated with hydrothorax that the symptoms are but an aggregation of those attending upon that condition, to-wit: disturbed cardiac action, dyspnoea, dysphagia, dry cough, and feeble circulation. The physical signs are exactly those of the stage of effusion of pericarditis, minus a friction sound.

DIAGNOSIS. Pericarditis with effusion and hydro-pericardium present nearly the same signs and symptoms, a differentiation being possible only by a history of the case and the symptoms of the attack.

TREATMENT. Same as for Acute Pericarditis.

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**ACUTE ENDOCARDITIS.**

SYNONYMS. Valvulitis; exudative endocarditis.

DEFINITION. An acute fibrinous inflammation of the serous membrane lining the cavity of the heart and forming its valves, in severe cases the chordae tendinae being involved, resulting in changes in the valves or orifices of the heart, or both; characterized by cough, dyspnoea, disturbed cardiac action, nausea, vomiting, and more or less marked febrile reaction. Acute endocarditis occurs in two distinct forms: plastic or simple exudative endocarditis; ulcerous or diphtheritic endocarditis.

CAUSES. Usually secondary to acute articular rheumatism, pleuritis, pneumonia, pericarditis, Bright's disease, scarlatina, influenza, and diphtheria. The association of acute endocarditis and chorea is frequent. While as yet no specific micro-organism

has been discovered, the view is gaining ground that it is a microbic affection.

**PATHOLOGICAL ANATOMY.** Inflammation of the endocardium is usually limited to the left side of the heart after birth, during foetal life the reverse being the case. The inflammation is limited or especially marked at the valvular portions of the endocardium, owing probably to the presence of fibrous tissue beneath the membrane in these situations, and to the strain which falls upon the valves during the performance of their functions.

Hyperaemia from congestion of the vessels beneath the membrane, with considerable swelling of the valves, the result of an exudation of lymph and serum beneath and on the free surface of the membrane covering the valves and chordae tendineae, resulting in the roughening of the surfaces and the agglutination of the mitral valves to each other, and of the aortic segments to the walls of the aorta, or the proliferation of the endocardial connective tissue, forming the nuclei of the so-called warty excrescences or vegetations, their size being increased by the deposition of fibrin from the blood within the cavities of the heart. These vegetations may be detached by friction, giving rise to emboli which may be washed by the blood current to the left side of the brain, or into the kidneys and the spleen.

In the ulcerative variety a process of softening takes place in the fibrinous deposits, leading to ulcerations and perforations.

**SYMPTOMS.** The affection is usually masked by the course of another disease until disturbances of the circulation direct attention to the heart. The onset is often by increase of temperature, praecordial distress, short cough, slight dyspnoea, more or less persistent vomiting, increased cardiac action, often rapid and tumultuous, with throbbing carotids and noises in the ear. As the inflammation progresses, the cardiac action and pulse decline in rapidity, with more or less congestion of the lungs and venous stasis.

**AUSCULTATION.** Shows a change in the character of the sounds or the development of murmurs at the various orifices, the character and points of distinction between which will be pointed out when discussing valvular diseases of the heart.

**DURATION.** Between one and three weeks.

**DIAGNOSIS.** Unless it is a rule of practice to always auscult the heart, many cases will pass unobserved or undetected. Pericarditis is distinguished from endocarditis by the character of the physical signs. In pericarditis the murmur or friction sound is

heard with either sound, is near to the ear and influenced by the pressure of the stethoscope, besides being associated with more or less alteration in the size and shape of the cardiac dullness, and is not transmitted, while in endocarditis the murmur takes the place of, or is associated with, the cardiac sounds, and is transmitted, with the absence of change or increased dullness on percussion. If embolism occur, a new set of symptoms develop; embolism of the kidneys causes sudden, deep-seated lumbar pain, with albuminuria and even haematuria; embolism of the brain, sudden palsies and sudden disturbance of consciousness; of the spleen, sharp pain and tenderness in the splenic region; of the skin, petechial or purpuric spots.

**PROGNOSIS.** Acute endocarditis is not very dangerous to life, hence a favorable prognosis may be given; regarding the ultimate results of valvular lesions, however, the prognosis is grave.

**TREATMENT.** The same as for Acute Pericarditis. Use the treatment that lifts off the pressure, which is the only thing to be done.

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### MALIGNANT ENDOCARDITIS.

**SYNONYMS.** Ulcerative endocarditis; septic, mycotic, and diphtheritic endocarditis.

**DEFINITION.** An acute septic inflammation of the lining membrane of the heart, with a strong tendency to ulceration; characterized by depression of the vital forces with more or less cardiac distress.

**CAUSES.** The specific micro-organism has not yet been determined. Frequently complicates pneumonia. Associated with acute rheumatism. Cases have been reported associated with or following influenza.

**PATHOLOGICAL ANATOMY.** The changes are those of acute endocarditis up to the development of the thickening of the endocardium lining the valves, and the development of the vegetations. Instead of the poison spending its force and the chronic condition obtaining, a process of softening, ulceration, development of abscess and perforation of leaflets follows, resulting in loss of structure, general septic infection, and the development of emboli, which lead to infarctions, with their results in either brain, kidney, spleen, eye, or skin.

**SYMPTOMS.** Vary greatly, but always associated with con-

stitutional signs of sepsis—a typhoid state, such as headache, restlessness, varying delirium, coated, dry tongue, sordes on teeth and lips, nausea, vomiting, loose or disordered stools, enlarged spleen, albumen in urine, and an irregular temperature record, varying from 100 degrees F. to 104 degrees F., or higher, associated with rigors and heavy sweating. The cardiac action is rapid, irregular, and weak—a compressible pulse. In the notes of twelve cases observed in the Philadelphia Hospital are the following symptoms: attacks of prolonged dyspnœa with paroxysms of intensity, or a slightly quickened respiration with paroxysms of dyspnœa occurring every few days. In four cases the paroxysms occurred three times daily, with respirations under twenty-five between the paroxysms, for three weeks preceding death. Usually the respirations are so oppressed that the recumbent position is impossible for long periods. Another frequent symptom is marked cyanosis, either transient or lasting for days before the end. A frequent symptom of ulcerative endocarditis is a peculiar facies, indicative of a sense of impending danger, great anxiety, or terror. If embolism occur, there are superadded symptoms varying with the organ affected. If the brain, rapidly developing palsies with disorder of consciousness; if the kidneys, deep-seated lumbar pains with hæmaturia or disordered urinary flow; if the spleen, pain and tenderness of the splenic region, with increase of temperature record.

**AUSCULTATION.** The booming, muscular, first sound is superseded by a feeble, irregular cardiac pulsation. Generally, a murmur may be detected.

**DIAGNOSIS.** One of the most difficult. Remembering the diseases with which malignant endocarditis may occur, and particularly pneumonia or sepsis, and the dyspnœa, the cyanosis, the facies, and the temperature record, it may be possible to diagnose the disease much more frequently than is done.

**PROGNOSIS.** Unfavorable. Recovery the rarest termination.

**TREATMENT.** Same as for Acute Pericarditis.

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### CHRONIC ENDOCARDITIS.

**SYNONYMS.** Sclerotic endocarditis; interstitial endocarditis; chronic valvular disease.

**DEFINITION.** Alterations in the cardiac valves or orifices, rendering the former incapable of properly closing the orifices, or



causing the narrowed orifice to interrupt the blood current in its normal movement. The lesions are of two kinds: obstructive and regurgitant.

A regurgitant lesion, termed also insufficiency, is such change in the valves as to permit a portion of the blood to flow backward instead of onward, the true direction of the blood current. An obstructive lesion, termed also stenosis, is a narrowing of the orifice, thereby obstructing the onward passage of the blood.

VARIETIES. 1. Mitral regurgitation. 2. Aortic regurgitation. 3. Tricuspid regurgitation. 4. Pulmonary regurgitation. 5. Mitral obstruction. 6. Aortic obstruction. 7. Tricuspid obstruction. 8. Pulmonic obstruction.

CAUSES. The great majority of cases are the result of acute endocarditis following rheumatism, chorea, or the infectious diseases. Chronic endocarditis from the onset is caused by alcoholism, syphilis, gout, and excessive muscular labor. Chronic Bright's diseases are also exciting causes. Professor Da Costa has clearly established the development of aortic disease in early life by overwork and strain of the heart. In the elderly, chronic endocarditis is the result of atheromatous or fibroid changes.

#### MITRAL REGURGITATION.

This form, also termed insufficiency, is the most frequent of all the varieties.

PATHOLOGICAL ANATOMY. The most common conditions observed are more or less contraction and narrowing of the tongues of the valves, with irregular thickening and rigidity; atheroma or calcification of the segments; laceration of one or more segments; adhesion of one or more segments to the inner surface of the ventricle; thickened and stiffened or rupture of the chordae tendineae, and also contraction and hardening of the musculi papillaries. As a result of the regurgitation of the blood into the left auricle, there is dilatation of the auricle, followed by slight hypertrophy.

SYMPTOMS. Insufficiency of the mitral valves soon leads to cardiac hypertrophy, to compensate for the diminished amount of blood sent onward by the ventricular systole. This condition causes quickened and strong pulse with some shortness of breath on severe exertion. When the "compensation ruptures" there occur praeordial distress, cough, dyspnoea, feeble, soft, rapid, irregular pulse; finally pulmonary congestion, oedematous limbs and general cyanosis, the abdominal cavity filled, liver congested,

urine scanty and albuminous, the patient dying "drowned in his own fluid."

**INSPECTION.** Cardiac impulse (apex-beat) displaced to the left and downward. In children and youths, bulging of the *præcordia* and increased cardiac impulse.

**PALPATION.** Displaced cardiac impulse, early stage being forcible and diffused; as compensation fails, impulse feeble or absent.

**PERCUSSION.** Transverse and vertical cardiac dullness increased.

**AUSCULTATION.** Systolic blowing or churning murmur, audible in the mitral area, propagated to the apex, left axilla, and under the angle of the scapula, either occurring with or taking the place of the first sound of the heart; the second sound being markedly accentuated.

**PROGNOSIS.** So long as the compensating hypertrophy can be maintained the prognosis is not unfavorable; when dilatation supervenes, however, the patient soon perishes, either from congestion of the lungs or dropsy and exhaustion.

#### AORTIC REGURGITATION,

Termed also, aortic insufficiency, is next in frequency to mitral insufficiency.

**PATHOLOGICAL ANATOMY.** The valves or segments adhere to the walls of the aorta, or a segment is lacerated or may be perforated, or, more commonly, the segments are shrunken, deformed, and rigid, permitting the regurgitation of the blood. These deficiencies in the valves are usually associated with more or less narrowing of the orifices. The inability of the aortic valves to close the aortic orifice at the proper moment allows the blood that should go onward to flow back into the left ventricle, and the normal flow of blood from the left auricle continuing, causes overfilling of the ventricle, which results in a dilatation of its cavity, and the extra effort of the ventricle to empty itself results in hypertrophy of the walls. In no other condition does the dilatation and hypertrophy of the cardiac walls reach such a degree. The older writers named this enormous enlargement of the heart *cor bovinum*.

**SYMPTOMS.** Those of marked hypertrophy, to-wit: forcible cardiac action, headache, tinnitus aurium, congestion of the face and eyes, with pulsating vessels, even small ones pulsating that before were not visible to the eye; pulsations of the retinal vessels can be recognized with the ophthalmoscope; the receding pulse,

which is particularly characteristic—forcible impulse but rapidly declining, called “water-hammer” pulse; also, the “Corrigan pulse.” When “compensation ruptures,” dyspnœa, cough, cyanosis, hepatic enlargement, congestion of the kidneys, with scanty, albuminous urine, ascites, and dropsy. If mitral insufficiency is now superadded, general venous stasis and death rapidly occur. Praecordial pain is usually present in aortic disease. It may be a sensation of constriction in the cardiac region, or sharp, shooting pains extending to the arms—anginoidal attacks.

INSPECTION. Forcible cardiac impulse.

PALPATION. Strong, full cardiac impulse.

PERCUSSION. Cardiac dullness increasing transversely and vertically.

AUSCULTATION. First Sound.—Forcible. Second Sound.—Replaced or associated with a churning, rushing, or blowing murmur of low pitch, distinct at the second right costal cartilage, but most distinct at the junction of the sternum and the fourth left costal cartilage, transmitted downward toward and below the apex.

PROGNOSIS. The one valvular disease most likely to occasion sudden death; still, so long as the compensating hypertrophy remains intact, compatible with quite an active life.

#### TRICUSPID REGURGITATION.

PATHOLOGICAL ANATOMY. This form of valvular insufficiency is either associated with right-sided cardiac dilatation from pulmonary obstruction, or is the result of mitral disease. The tricuspid orifice is dilated in the majority of cases; occasionally the segments of the valves are contracted or adherent to the ventricle.

SYMPTOMS. Venous stasis with its various consequences, and especially pulsation of the jugulars, synchronous with the cardiac movement, and, finally, general venous pulsation, especially of the liver, pulmonary congestion, engorgement of the kidneys, and dropsy. These symptoms are superadded to those of the affections with which tricuspid insufficiency is always associated.

INSPECTION. Diffused, wavy, cardiac impulse; jugular pulsation synchronous with the cardiac movement, uninfluenced by respiration, also more or less prominent hepatic pulsation.

PALPATION. The cardiac impulse extended, but feeble.

PERCUSSION. Dullness on percussion, extending to the right and below the sternum.



PLATE XLII.—Liver, Chest and Side Treatment.





**AUSCULTATION.** The first sound is accompanied by a blowing murmur most intense at the junction of the fourth and fifth ribs with the sternum, distinct over the xiphoid appendix, becoming feeble or lost in the left axillary region; often associated, however, with a mitral systolic murmur.

#### PULMONIC REGURGITATION.

**PATHOLOGICAL ANATOMY.** Insufficiency of the pulmonary valves is of rare occurrence, but when present the changes correspond more or less with those described for aortic regurgitation.

**SYMPTOMS.** Those of dilatation of the right side of the heart and consequent pulmonary congestion, to-wit: dyspnœa, deficient aeration of the blood and cyanosis, distention of the superficial vessels, palpitation of the heart, præcordial distress, sudden suffocative attacks, and dropsy.

**PERCUSSION.** The cardiac dullness extending to the right of the sternum.

**AUSCULTATION.** A loud, blowing murmur associated with the second sound of the heart, most distinct at the junction of the third left costal cartilage and the sternum.

**PROGNOSIS.** Death results, sooner or later, from dropsy and exhaustion.

#### MITRAL OBSTRUCTION.

Mitral obstruction or stenosis is not as frequent as regurgitation, and is very often associated with the latter.

**PATHOLOGICAL ANATOMY.** Mitral stenosis is caused by deposits around the orifice, the result of endocarditis, or else the segments of the valves are "glued together by their margins," leaving but a funnel-shaped opening, the so-called "buttonhole" mitral valve. Vegetations on the valves lead to more or less obstruction to the blood-current.

**SYMPTOMS.** Hypertrophy of the left auricle results from obstruction at the mitral orifice, followed in time by dilatation, the symptoms of stenosis being unobservable until the "compensation ruptures," or until dilatation becomes excessive, when occur irregular, small, and feeble pulse, dyspnœa, cough, bronchorrhœa the result of bronchial congestion; dilatation of the right side of the heart, soon leading to general venous stasis, dropsy, and death.

**INSPECTION.** Normal until auricular hypertrophy, when an undulatory impulse is observed over the left auricle.

**PALPATION.** When cardiac dilatation occurs, a diffused,

feeble, and irregular cardiac impulse is felt near the xiphoid appendix.

**AUSCULTATION.** First sound normal in character, but often irregular in rhythm. The second sound normal. A blowing, sometimes rasping, sound is heard, immediately after the second sound of the heart ceases, and immediately before the first sound begins—a presystolic murmur, heard most distinctly in the mitral area, lessening in intensity toward the cardiac base. The cardiac sounds are all more or less enfeebled if cardiac dilatation occur.

**PROGNOSIS.** The prognosis is controlled by the duration of the hypertrophy. Under favorable circumstances mitral stenosis is compatible with a long and rather active life.

#### AORTIC OBSTRUCTION.

**PATHOLOGICAL ANATOMY.** Stenosis of the aortic orifice is caused by the projection of the valves inward, and their becoming rigid and thickened, or atheromatous or calcareous, so that they can not be pressed back by the blood, but remain constantly in the current of the circulation. Occasionally the valves are covered with fibrinous masses, the opening into the artery being thus more or less completely closed, or the segments may be adherent by their lateral surfaces, leaving a central opening, which may be so contracted as to permit the passage of only the smallest probe.

**SYMPTOMS.** Hypertrophy of the left ventricle rapidly supervenes upon aortic stenosis. The pulse is small, slow, and hard. The supply of blood to the brain is insufficient in many cases, and hence attacks of vertigo, syncope, or slight epileptiform seizures occur; finally, dilatation of the left ventricle and incompetence of the mitral valve result, with subsequent pulmonary congestion, dyspnoea, and general venous stasis, the pulse soft and feeble.

**PALPATION.** Lowered cardiac impulse, strong in the early stage, feeble when dilatation occurs.

**PERCUSSION.** The cardiac dullness is increased vertically, the transverse dullness being slightly affected.

**AUSCULTATION.** The first sound replaced or associated with a harsh, rasping sound, whistling at times, having its greatest intensity at the junction of the second right costal cartilage with the sternum, transmitted along the vessels; the murmur may sometimes be heard a short distance from the patient. Usually aortic stenosis is associated with more or less aortic regurgitation, whence a double murmur occurs, having its greatest intensity at the base of the heart, the so-called to-and-fro, or see-saw murmur.

PROGNOSIS. So long as compensation is maintained the condition of the patient is comfortable, if a quiet life be followed. When the compensation is ruptured, the usual symptoms of dilatation, venous stasis, and dropsy soon ensue.

#### TRICUSPID OBSTRUCTION.

This condition is one of the rarest affections of the heart, and if it ever does occur with or following an attack of endocarditis, the anatomical changes are similar to those of mitral obstruction. This condition soon leads to auricular dilatation; venous stasis rapidly supervenes, associated with venous pulsations similar to those described when speaking of tricuspid regurgitation.

#### PULMONIC OBSTRUCTION.

PATHOLOGICAL ANATOMY. Always a congenital malady, the changes consisting in "constriction of the pulmonary artery, unclosed foramen ovale, unclosed ductus Botalli, stricture at the ductus Botalli, with hypertrophy of the right cavity and frequent association with tuberculosis of the lungs." Hypertrophy of the right ventricle may ensue, the walls becoming almost as thick as those upon the left side. Those in whom these congenital defects in the cardiac structure occur are otherwise weak. Develop slowly, have flabby tissues, soft bones, and seem poorly nourished.

SYMPTOMS. The hypertrophy which often ensues may keep life apparently comfortable for some time, but sooner or later "compensation ruptures," when cough, dyspnoea, cyanosis, and death occur.

PROGNOSIS. The duration of these congenital affections is short, usually from a few days to a few months; although several well authenticated cases record a much longer duration.

#### DIAGNOSIS OF THE VALVULAR DISEASES.

In making a differential diagnosis between the various forms of valvular disease of the heart, strict attention must be paid to the points of greatest intensity at which the several murmurs are heard.

A murmur occurring with or taking the place of the first sound of the heart—the ventricular systole—heard most distinctly at the apex, transmitted to the left axilla, and to the inferior angle of the scapula, signifies mitral regurgitation—a mitral systolic murmur. A murmur occurring with or taking the place of the first sound of the heart, with its point of greatest intensity at the xiphoid appendix, signifies regurgitation at the tricuspid orifice—tricuspid systolic murmur. A murmur heard with the first sound



of the heart, high-pitched, rasping or grating in character, with its point of intensity greatest at the second right costal cartilage, signifies obstruction at the aortic orifice—an aortic systolic murmur. A murmur heard with the first sound of the heart, soft in character, with its point of intensity most distinct at the junction of the third left costal cartilage with the sternum, signifies obstruction at the pulmonic orifice—a pulmonic systolic murmur. A murmur occurring immediately after the second sound of the heart, and immediately before the beginning of the first sound of the heart, signifies obstruction at the mitral orifice—a presystolic mitral murmur. A murmur heard with or taking the place of the second sound of the heart, most distinct at the second costal cartilage, to the right of the sternum, and well transmitted toward the apex or below, signifies insufficiency or regurgitation at the aortic orifice—an aortic regurgitant or diastolic murmur.

Although eight distinct valvular murmurs have been described as occurring in the heart, those on the right side are of rare occurrence, and hence of little clinical importance.

If a murmur be heard with the first sound of the heart, it is almost certainly aortic obstructive or mitral regurgitant; and if heard with the second sound, it is probably aortic regurgitant. A presystolic mitral murmur is also of comparatively rare occurrence, the force with which the blood passes from the left auricle into the left ventricle being, under ordinary circumstances, insufficient to excite sonorous vibrations.

Functional or anaemic murmurs may be confounded with the various forms of valvular disease of the heart. The chief points of distinction between them are, that an anaemic murmur, which is always heard at the base of the heart, is always systolic in time, not transmitted away from the heart, and is soft in character, low in pitch, and of variable intensity, now being heard, now entirely absent.

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### CARDIAC HYPERTROPHY.

**DEFINITION.** An overgrowth or increase in the muscular tissue which forms the walls of the heart; characterized by forcible pulse, over-fullness of the arteries, diminished blood in the veins, and accelerated circulation.

**CAUSES.** Obstruction to the outflow of blood, resulting from valvular disease of the heart; emphysema; Bright's disease;

arterio-fibrosis; functional over-action; excessive use of tobacco, tea, coffee, or excessive muscular action.

**VARIETIES.** 1. Simple hypertrophy, or a simple increase in the thickness of the cardiac walls. 2. Eccentric hypertrophy, increase in the cardiac walls and dilatation of the cavities, to-wit: Dilated hypertrophy. 3. Concentric hypertrophy, increase in the cardiac walls, with decrease of the cavities, a very rare form.

**PATHOLOGICAL ANATOMY.** Hypertrophy of the heart is usually limited to the left side, the ventricles more commonly than the auricles, the latter dilating. The shape of the heart is altered by hypertrophy; if the right ventricle, the heart is widened transversely and the apex blunted; if the left ventricle, the heart is elongated and, as a rule, the cavity is dilated; if both ventricles are hypertrophied, the heart has a globular shape. From increase in weight the heart may sink lower during the recumbent position, thereby lessening the area of cardiac dullness, but during the sitting or upright posture it sinks lower in the chest and to the left, causing more or less prominence of the abdomen. The increase in the size of the organ is a true increase or hypertrophy of the muscular tissue, and not a hyperplasia. The tissue is firmer and the color brighter and fresher than when the size of the organ is normal. The *cor bovinum* of the old writers is an enormous hypertrophy of the heart with dilatation of its cavities.

**SYMPTOMS.** Depend upon the amount of hypertrophy. The most common are increased and forcible cardiac action, the arteries becoming fuller, the veins less full, and the circulation accelerated, pulsating carotids and aorta, headache, often vertigo, frequent epistaxis, congestion of the face and eyes, tinnitus aurium, dyspnoea on exertion, dry cough, restless nights, with more or less jerking of the limbs, occasional praeordial pains shooting toward the left axilla, full, firm, bounding pulse, and pulsations in the superficial arteries.

A sphygmographic tracing shows the line of ascent vertical and abrupt, but the apex is rounded, and the line of descent is oblique, unless there is more or less insufficiency of the valves.

**INSPECTION.** Often fullness or prominence of the praeordium, with distinct impulse.

**PALPATION.** The impulse is felt one or two intercostal spaces lower down and to the left, and is stronger and more or less diffused—the heaving impulse.

**PERCUSSION.** The area of cardiac dullness is increased vertically and transversely upon the left side of the sternum, unless

the right ventricle is also hypertrophied, when the cardiac dullness is increased to the right of the sternum.

**AUSCULTATION.** If simple hypertrophy without any coexisting changes in the valves or orifices, the first sound has a loud and somewhat metallic quality, the second sound being strongly accentuated.

**SEQUELÆ.** Cerebral hemorrhage; miliary cerebral aneurisms; dilatation of the heart; fatty changes of the cardiac tissue.

**DIAGNOSIS.** Hypertrophy of the heart can scarcely be mistaken for any other disease if a careful study of the physical signs be made.

**PROGNOSIS.** When the result of valvular disease, the hypertrophy is said to be compensatory. If the result of Bright's disease, emphysema of lung, or if occurring late in life, or associated with atheromatous degeneration of the vessels, the prognosis is unfavorable; when the result of functional over-action in the strong and robust, a further enlargement can often be prevented by active and persistent treatment.

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## DILATATION OF THE HEART.

**DEFINITION.** An increase in the size of one or more of the cavities of the heart, without any increase or thickening of the cardiac walls; in fact, the walls are frequently thinner—stretched; characterized by feebleness of the circulation, terminating in venous stasis, cyanosis, œdema, and exhaustion.

**CAUSES.** Over-exertion in those of feeble resisting powers, as youths or soldiers, as first pointed out by Professor Da Costa; chronic valvular disease; emphysema; chronic bronchitis; gout; Bright's disease; alcoholism; syphilis.

**VARIETIES.** 1. Simple dilatation, the cavities being enlarged, the walls normal. 2. Active dilatation, corresponding to eccentric hypertrophy; the cavities being enlarged and the walls increased in thickness, the so-called "dilated hypertrophy." 3. Passive dilatation, the cavities being enlarged and the walls thinned or stretched.

**PATHOLOGICAL ANATOMY.** The right side of the heart is far more frequently involved than the left side. The shape of the organ is altered, depending on the part affected. The weight of the organ is, as a rule, increased, as hypertrophy almost always accompanies or precedes dilatation.



The muscular tissue is generally pale, mottled, and softened, and under the microscope presents evidences of degeneration. The orifices also participate, and especially the auriculo-ventricular, resulting in the valves becoming incompetent to close the orifices, and this latter effect is added to by the removal of the basis of the papillary muscles a greater distance from the orifice, in consequence of the extension of the wall. When the auricles dilate, the large venous trunks opening into them unprotected by valves commonly participate in the dilatation, and may become greatly enlarged. The passive congestion of the organs that follows the feeble circulation produces changes in their structure.

**SYMPTOMS.** Those associated with enfeebled circulation, to-wit: feeble pulse, veins distended, arteries emptied; headache, aggravated by the upright position; attacks of syncope, cough, with any of the following phenomena of venous congestion: of the lungs, dyspnoea; liver, jaundice; stomach, dyspepsia; intestines, constipation; kidneys, scanty, often albuminous urine; brain, dullness of the mind and vertigo, often relieved by a copious epistaxis; and, finally, dropsy, beginning in the lower extremities, the patient dying from exhaustion.

Great relief often temporarily follows the above symptoms under treatment; sooner or later, however, the venous stasis produces the final symptoms noted.

**INSPECTION.** Veins of the surface distended and enlarged; indistinct cardiac impulse, often diffused and wavy; if associated with tricuspid insufficiency, there is pulsation of the jugular.

**PALPATION.** Feeble and irregular fluttering but heaving impulse.

**PERCUSSION.** Cardiac dullness extended transversely, and especially increased on the right side.

**AUSCULTATION.** If no valvular lesion accompany the dilatation, the cardiac sounds are weaker than normal, the first sounds having a sharper quality than normal; if accompanied by valvular lesions, cardiac murmurs are present.

**DIAGNOSIS.** Hypertrophy of the heart shows increased cardiac dullness, and is a disease of powerful cardiac action, while dilatation is an affection of feeble action associated with dropsy.

Pericardial effusion has many points of resemblance to cardiac dilatation, but it begins suddenly, associated with some acute malady; and while the heart sounds are indistinct or feeble at the apex, they both have their normal qualities at the cardiac base, while dilatation of the heart has a chronic history, results in



general venous stasis, the cardiac sounds being of the same intensity over the entire *praecordia*.

PROGNOSIS. Unfavorable, death resulting from gradual exhaustion, or suddenly by cardiac paralysis if there be some undue excitement.

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### ACUTE MYOCARDITIS.

SYNONYMS. *Carditis*; abscess of the heart.

DEFINITION. An inflammation of the muscular tissue of the heart, by extension from an inflamed pericardium or endocardium, or secondary to *pyaemia*; characterized by pain, feeble circulation, symptoms of blood poisoning, and collapse.

CAUSES. The result of endocarditis or pericarditis; *pyaemia*; typhoid fever; emboli of the coronary arteries.

PATHOLOGICAL ANATOMY. Discoloration and softening of the cardiac substance and the infiltration of a sero-sanguineous fluid, fibrinous exudation and pus, leading to the formation of abscesses in the muscular structure of the heart.

The disease leads to the formation of either a cardiac aneurism or to rupture of the walls of the heart. If recovery occur, cicatrices or depressed scars may mark the site of a former abscess.

SYMPTOMS. The clinical evidences of inflammation of the cardiac muscles are very obscure. If, during the course of one of the maladies mentioned, there are developed *praecordial* pain, irregular and feeble cardiac action, cardiac dyspnoea, pyrexia of a low type, with symptoms of blood poisoning, and a tendency to collapse, or the symptoms of the so-called typhoid state, myocarditis may be suspected.

DIAGNOSIS. The existence of myocarditis can scarcely ever be anything but a presumption, the signs being all negative rather than positive. If during the course of rheumatism, *pyaemia*, puerperal fever, typhoid fever, pericarditis, or endocarditis, symptoms of cardiac failure appear suddenly, associated with signs of blood poisoning and collapse, inflammation of the cardiac muscle may be suspected.

PROGNOSIS. The course of acute myocarditis is vary rapid, death being the usual termination, in from three to five days. Chronic myocarditis pursues a very latent course.



PLATE XLIII.—Manipulation of Spine, Dorsal Treatment.



## CHRONIC MYOCARDITIS.

**SYNONYMS.** Fibroid heart; chronic interstitial myocarditis; fibrous myocarditis; chronic carditis; cardio-sclerosis.

**DEFINITION.** A slowly developing hyperplasia of the interstitial connective tissue of the heart, leading to induration of its substance; characterized by shortness of breath on slight exertion, attacks of tachycardia, praecordial pain, disordered circulation, and vertigo. It is proper to state that many cases present no symptoms whatever.

**CAUSES.** The most frequent cause is sclerosis of the coronary arteries, leading to imperfect blood supply to the cardiac muscles. Amongst other frequent causes are diseases of the kidneys, alcoholism, excessive use of tobacco, syphilis, secondary to pericarditis, endocarditis, and acute myocarditis. There is, undoubtedly, often an inherited predisposition to fibroid changes in the vessels, in which cases the causes named would act as exciting causes. It is a disease of the aged, save in those instances resulting from excesses. The old saying, "A man is as old as his arteries," is applicable to this disease.

**PATHOLOGICAL ANATOMY.** The heart is enlarged and dilated. The morbid changes may be diffused, or limited to the walls of the left ventricle, the papillary muscles, and the septum. There is always more or less atheromatous deposit or changes in the aorta. All cases show atheroma in one, more, or all of the coronary arteries. Complete closure of one coronary artery, if produced suddenly, is usually fatal. On section the cardiac wall cuts with a distinct resistance. The changes in the heart wall are an "overgrowth of the interfibrillar connective tissue, with development of fibrous tissue. These changes may be uniformly distributed through the substance of the heart when some intoxication, as by alcohol, or some general disturbance of the cardiac nutrition, has led to the myocardial disease; or they may be seen in circumscribed areas when embolic or thrombotic occlusion of branches in the coronary arteries has occasioned anaemic infarction and subsequent sclerosis. In either case the microscope reveals masses of wavy fibrous tissue between the muscular bundles, and often slow degeneration or atrophy of the fibers themselves." (Pepper.) The terminal branches of the coronary arteries are narrowed and sclerotic to the point of obliteration, particularly in cases resulting from syphilis.

"Aneurism of the heart is commonly due to localized cardio-sclerosis. The inelastic fibrous tissue gradually gives way before



the intracardial pressure, and saccular dilatation results." (Pepper.)

Atheromatous changes are often found in other than the coronary vessels, particularly the aorta. Various degenerative changes occur in other organs, the result of disturbed circulatory action.

**SYMPTOMS.** The great majority of patients having chronic myocarditis present no symptoms until an extra cardiac effort is called for. An early symptom is breathlessness on slight exertion, with either cardiac palpitation or a feeble, irregular pulse. Anginal attacks (cardiac pain) or a sensation of constriction or pressure over the praecordia are frequent, often following some exertion or an attack of indigestion. The pulse-rate is decreased in number in cases which present no other symptom. A frequent symptom is syncope, coming without warning or after sudden exertion, the result of sudden failure of the cerebral circulation. Amongst other periodical symptoms are cardiac asthma, pseudo-apoplectic attacks, hepatic, gastric, and nephritic disorders.

As the fibroid changes progress, there develops progressive weakness, dyspnœa, insomnia, disordered digestion, and cerebral weakness, often showing itself as mania, delusional attacks, or dementia.

**PERCUSSION.** Increased praecordial dullness is usually present, due to the dilated hypertrophy.

**AUSCULTATION.** The first sound of the heart is valvular in character, the booming or muscular quality having disappeared. Murmurs are very frequent, the result of valvular disease. A very characteristic point is the irregularity in rhythm and in force, one contraction being fairly forcible, another weak or feeble, and so on.

**DIAGNOSIS.** A proper appreciation of chronic myocarditis is one of the most important questions in clinical medicine. The term Heart Failure is the opprobrium of the profession, and yet chronic myocarditis is one of the great causes of cardiac failure during the prevalence of some over-exertion, in acute pneumonia, typhoid fever, and other like diseases. The points of value in arriving at a diagnosis are: a careful study of the first sound of the heart at the apex; the character of murmurs if present, the condition of the arteries, the dyspnœa, the feeble, irregular pulse in patients past fifty years, and the occurrence of anginal attacks after exertion or mental worry.

**PROGNOSIS.** This is controlled by the habits of the patient.

The disease is incurable, but life may be fairly comfortable for many years if care be exercised.

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### FATTY HEART.

**SYNONYMS.** Fatty degeneration of the heart; chronic myocarditis.

**DEFINITION.** A change in the muscular fibers of the heart, in which the transverse striae are replaced by granules and globules of fat; characterized by feeble cardiac action, venous stasis, and dyspnoea.

**CAUSES.** Impaired nutrition in the elderly; prolonged anaemia; chronic gout; alcoholism; phosphorus poisoning; cancer; tuberculosis and scrofula; diseases of the coronary arteries.

**PATHOLOGICAL ANATOMY.** The distinction must be made between a deposit of fatty tissue upon or around the heart, and the degeneration of its muscular tissue.

The fatty metamorphosis may affect the whole organ, or the entire ventricular walls, or be limited to portions of them. If the degeneration be marked, the color is yellowish, the tissues soft and easily torn, and to the touch have a greasy feeling, oil being yielded on pressure.

The microscopic changes are characteristic. The striae of the muscle are easily rendered indistinct by fat and oil globules, gradually becoming more and more obscured, and finally disappearing altogether, the fibers being replaced by fat granules.

**SYMPTOMS.** Those of weak heart, anaemia of organs, and venous stasis, to-wit: feeble, irregular, but slow cardiac action, compressible pulse, praecordial distress, often aggravated by attacks of angina pectoris; dyspnoea, aggravated on exertion, with anaemia of the various organs from the feeble propulsive power; if of brain, vertigo, swooning, or pseudo-epileptic attacks, especially marked on suddenly rising from a recumbent position; if of lungs, dry, hacking cough; if of gastro-intestinal tract, dyspepsia and constipation; if of kidneys, scanty urine, at times albuminous; and finally dropsy, beginning in the lower extremities.

A formidable symptom, causing much inconvenience as well as alarm to the patient, is what he will term his constant "sighing," the Cheyne-Stokes breathing—"A pause in the breathing, a complete suspension of the respiratory acts for a period of time

(during which breathing might occur several times in the normal manner), then the resumption of respiration very feebly and slowly, and a gradual and progressive increase in the number and depth of respirations until the maximum is reached, and then again a gradual and progressive diminution, in the same order, in the number and depth of the respirations, until another pause occurs"—the "oscillating respiration."

Concomitant symptoms are atheromatous changes in the vessels, and the arcus senilis.

PALPATION. Weak cardiac impulse.

PERCUSSION. Not markedly changed unless preceded by enlargement of the heart

AUSCULTATION. First sound feeble, toneless, almost inaudible, the second sound being normal, unless changes in the valves are present.

DIAGNOSIS. Feeble cardiac sounds, with slow pulse, attacks of cardiac asthma or Cheyne-Stokes breathing, with evidences of arcus senilis, make the diagnosis very certain. The question of fibroid heart must always be considered.

PROGNOSIS. Incurable, the affections pursuing a more or less chronic course. Life may be prolonged at times by treatment, but death finally results from exhaustion, or suddenly, from cardiac paralysis or rupture of the heart.

## PALPITATION OF THE HEART.

SYNONYM. Irritable heart.

DEFINITION. A functional disturbance of the heart, characterized by increasing frequency of its movements, and more or less irregularity of the rhythm, with a strong tendency toward hypertrophy.

CAUSES. Over-exertion, "the heart strain" of Da Costa; dyspepsia; uterine diseases; excesses in tea, coffee, tobacco, alcohol, or venery; moral and emotional causes, grief, anxiety, and fear.

SYMPTOMS. Usually palpitation of the heart has a sudden onset after some one of the causes mentioned, praecordial oppression or pain, rapid, tumultuous beating, the impulse being visible through the patient's clothing, dyspnoea, anxiety, and a sense of choking or fullness in the throat, the recumbent position impossible, vertigo, faintness, flashes of light, the pulse full and strong

or feeble, the face flushed or pale, the patient having a feeling of anxiety with a sense of impending danger and fear of sudden death. These attacks are paroxysmal, lasting from a few moments to several hours, or a day, the patient often voiding a large quantity of limpid urine after the paroxysm has subsided, when there is a strong tendency to sleep.

**DIAGNOSIS.** Irritability of the heart is differentiated from the various forms of cardiac disease by the absence of all the physical signs mentioned as occurring in those conditions.

**PROGNOSIS.** If early and properly treated, favorable.

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### TACHYCARDIA.

**SYNONYMS.** Rapid heart; quick heart; paroxysmal rapid heart.

**DEFINITION.** Paroxysmal rapid cardiac action minus or with subjective symptoms, the result of excessive cardiac rapidity.

**CAUSES.** Tachycardia is one of the "crises" of cerebral or spinal diseases. Menopause. Neuritis of the pneumogastric nerve; chronic myocarditis; neurasthenia; chronic gastritis; excessive use of tobacco.

**PATHOLOGICAL ANATOMY.** No characteristic lesions. There may be paralysis of the inhibitory fibers of the vagus, an irritation of the accelerators of the sympathetic, or reflex action from some lesion in the cardiac wall or elsewhere.

**SYMPTOMS.** The paroxysm is sudden in its onset, with or without "warnings"—if these latter, they are in the shape of vertigo, ringing in the ears, and a sense of impending danger. The cardiac action is increased to 150, 175, 200, rarely 250 beats per minute. The pulse is small, weak, easily compressible, and often irregular. The respiration is slightly increased; rarely there is dyspnoea. The surface is at first pale, but soon becomes flushed. The expression is anxious and denotes suffering. There is a feeling of praecordial constriction, with more or less smothering. Rarely, there are no subjective symptoms. The duration is from a few minutes, to hours, or days.

**AUSCULTATION.** The first sound is clear and ringing, but not strong and booming. The second sound is weak and lacks the valvular quality of the normal. A murmur is often heard at the apex.

**DIAGNOSIS.** The differentiation between tachycardia and



palpitation is to be made, as also the rapid heart of valvular disease and of irritable heart. The chief point is that in tachycardia the attack is paroxysmal, and the number of pulsations exceeds the rapid heart of other conditions.

**PROGNOSIS.** As a rule, it is an unfavorable symptom of some central lesion. If it develops in patients suffering from chronic myocarditis or atheroma of vessels, the fatal result may be sudden.

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### BRADYCARDIA.

**SYNONYM.** Brachycardia.

**DEFINITION.** A paroxysmal or permanent slowness in the cardiac action.

**CAUSES.** Often associated with organic nervous diseases. It is a symptom of such cardiac diseases as fibroid and fatty heart and atheroma of the coronary arteries. It frequently occurs during convalescence from infectious diseases, such as diphtheria, pneumonia, typhoid fever, erysipelas, and rheumatism; uraemia, lead poisoning, anaemia, and chronic alcoholism are often causes.

**SYMPTOMS.** Slow action of the heart is the chief symptom, varying from 50, 40, 30, 20, to 10 or 8 beats per minute. The pulse is weak, small and slow. As results of the slow cardiac action are vertigo, noises in the ears, syncopal attacks, and rarely convulsions. The onset may be either sudden or follow "warnings."

**AUSCULTATION.** The first sound is soft and feeble, and often the second sound is not heard. As a rule, with reduction in the number of contractions is an increase in their force; this not obtaining in bradycardia determines its central origin.

**DIAGNOSIS.** A feeble cardiac contraction, with less than fifty beats per minute, determines the diagnosis.

**PROGNOSIS.** Sudden death a very frequent termination. The cause controls the prognosis.

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### ARRHYTHMIA.

**SYNONYMS.** Arrhythmia cordis; irregularity of the pulse.

**DEFINITION.** A lack of cardiac rhythm, or irregularity in the cardiac pulsations. It is a symptom rather than a disease.

**CAUSES.** Valvular diseases; myocardial diseases; cardiac

dilated hypertrophy; atheroma of coronary arteries and aorta; excessive use of tobacco, tea, coffee; flatulent dyspepsia. Neurasthenia, hysteria, and melancholia.

**SYMPTOMS.** An irregularity in cardiac action, either in the rhythm or the regularity in the force of the beats, or an intermission in the cardiac contractions. The sphygmograph gives the exact condition of the cardiac pulsations and should always be used in cardiac diseases. Other symptoms that may be present are due to the condition producing the arrhythmia.

**DIAGNOSIS.** An examination of the pulse, auscultation of the heart, and the use of the sphygmograph determine the arrhythmia.

**PROGNOSIS.** Depends upon the cause. In functional cases favorable, in organic cases unfavorable.

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## ANGINA PECTORIS.

**SYNONYM.** Neuralgia of the heart.

**DEFINITION.** Paroxysms in which there occur sharp cardiac pains, extending usually into the left shoulder and down the left arm, accompanied by a feeling of constriction of the thorax and a strong fear of impending death.

**CAUSES.** Depending upon the variety, whether of nervous or organic origin. Often hereditary; associated with chronic cardiac changes, as diseases of the coronary arteries or calcification of the valves; the excessive use of tobacco; syphilis; according to Trousseau, it is a form of masked epilepsy, and may alternate with true epileptic attacks; often associated with hysteria.

**PATHOLOGICAL ANATOMY.** A disease of the arteries, ossification and occasionally obliteration of the cardiac arteries, producing ischaemia.

“The pathological changes which stand in a causative relation to the attacks are those of the cardiac plexus of the phrenic and of the pneumogastric nerves. Pressure of enlarged lymphatics, inflammation of parts of the cardiac plexus, with changes in the coronary arteries, seem to be most constant.”

**SYMPTOMS.** A paroxysmal affection, the attacks occurring irregularly; in the interval entire absence of symptoms, or the symptoms of the organic disease causing the paroxysms.

“The patient suddenly sits up in his bed; with a cry of horror

indicates the sense of pain at the *praecordium*. The pain is of great intensity, but is of a cold and sickening character; the chest is fixed, the breathing quickened, and the hand placed over the *praecordia* finds that the heart's action is slight and enfeebled. The face wears a look of horror, pale and slightly leadened; a cold sweat breaks out upon the forehead; worse than the pain is the feeling of fearful sickness and depression. The poor patient gasps, 'I shall die! I shall die!' and sometimes his short but concentrated sufferings in a few moments end in death. The attack ends suddenly with vomiting, or great flow of urine."

The unpleasant sensations of these patients during an attack and the nervous disorder associated with it, slowly bring about a mental change. They are depressed and gloomy, sometimes suicidal, and often developing epilepsy.

Attacks of angina in nervous women and children, the hysterical or pseudo-anginal attacks, come on gradually with distention of the abdomen, eructations of gas, excessive restlessness, flushed face, irritable pulse, diffused *praecordial* pain, and general hysterical phenomena.

**DIAGNOSIS.** The points to be remembered are that the attacks are always paroxysmal, the patient having a sense of coldness, and frequently a cold sweat, the heart's action not increased, the chest fixed, and the breathing slow.

**PROGNOSIS.** True angina pectoris is unfavorable, the patient, sooner or later, either succumbing during the paroxysm or from exhaustion, the result of the cardiac changes.

Pseudo-angina is always favorable.

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## ARTERIO-SCLEROSIS.

**SYNONYMS.** Atheroma; arterio-capillary fibrosis (Gull and Sutton); endocarditis chronica deformans (Virchow).

**DEFINITION.** An overgrowth of the connective tissue of the arteries followed with calcareous deposits. The changes may extend to the capillaries and veins. As a result of the impairment of the arterial circulation occur fibroid degenerations in other organs, resulting in loss of elasticity in the walls of the vessels, increase of arterial tension, narrowing of the caliber of smaller arteries, and impairment of the nutrition of the organs supplied.

**CAUSES.** Old age, alcoholism, syphilis, lead-poisoning, diabetes, malaria, rheumatism. Heredity is a predisposing factor in



PLATE XLIV.—Arm Extension, Upright Treatment.





some cases. Chronic nephritis. More common in men than in women.

**PATHOLOGICAL ANATOMY.** The atheromatous changes are most frequent in the aorta. Other arteries affected are the coronary, the radial, ulnar, brachial, iliac, femoral, and the arteries of the brain.

The internal surface of the affected vessels is irregularly thickened with either gelatinous and translucent, or dense and fibrous, or calcareous deposits or products. If the calcification is extensive, the vessel is changed into a hard, stiff tube. Often the surface of the thickening or deposit is destroyed, presenting the so-called "Atheromatous ulcers," which may be covered with masses of thrombus.

The above changes are the result of inflammatory change in the intima of the affected vessel. This appears three or four times as thick as normal, due to the swelling of its elements, the new growth of connective tissue, and the deposit of round cells. Fatty degeneration of the inflammatory products results.

The result of the changes in the arteries is a loss of their elasticity, thus hindering the propulsion of the blood current and raising the arterial tension, leading to hypertrophy of the left ventricle. The changes finally affecting the coronary arteries lead to changes in the myocardium. If the intima of the smaller vessels be involved the blood supply to the organs supplied is lessened, resulting in disturbance of their nutrition.

**SYMPTOMS.** Not always apparent. The symptoms vary with the arteries involved, and the organs whose blood supply is lessened or cut off. Cardiac hypertrophy from the increased resistance to the arterial circulation. The peripheral arteries involved in the atheromatous changes can be determined by palpation, they having a hard, bony feeling, much like whip-cord. Attacks of vertigo, pseudo-apoplectic attacks, or spells of unconsciousness in the aged or those having superficial hardened arteries are generally due to changes in the cerebral vessels. Evidences of myocarditis and angina pectoris point to atheroma of the aorta and coronary arteries. Gangrene of the extremities in the old—senile gangrene—point to atheroma or thrombi, the result of the fibrosis.

**PALPATION.** Hard, superficial arteries, those at the wrist feeling like a string of beads, pulsating. The cardiac impulse is forcible in the early stages.

**PERCUSSION.** Increased præcordial dullness, particularly over left ventricle.

**AUSCULTATION.** In the early stages the first sound of the heart is prolonged, the second sound accentuated over the aortic cartilage. As the heart dilates and the walls become diseased, the sound becomes feeble and often irregular and intermittent.

**DIAGNOSIS.** Only determined by a close study of the various symptoms and sequelæ.

**PROGNOSIS.** Incurable.

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## ANEURISM OF THE AORTA.

**VARIETIES.** 1. Aneurism of the arch of the aorta. 2. Aneurism of the thoracic aorta. 3. Aneurism of the abdominal aorta.

The arch of the aorta is divided by Gray into three parts, the ascending, the transverse, and the descending. The ascending portion is two inches in length, arising from the left ventricle, on a level with the lower border of the left third costal cartilage, behind the left edge of the sternum. It ascends obliquely upward to the right to the upper border of the right second costo-sternal articulation. The transverse portion commences at the upper border of the right second sternal articulation, and, arching to the left and forward, passes in front of the trachea and œsophagus to the left of the third dorsal vertebra. The descending portion extends downward to the left side of the fourth dorsal vertebra.

The thoracic aorta extends from the left lower border of the fourth dorsal vertebra, and ends in front of the body of the twelfth dorsal vertebra, at the aortic opening in the diaphragm.

The abdominal aorta begins at the aortic opening in the diaphragm, descends a little to the left side of the vertebral column, and terminates over the body of the fourth lumbar vertebra, where it divides into the two common iliac arteries.

**DEFINITION.** A circumscribed dilatation of some portion of the aorta, the result of disease of the vessel wall weakening its resistance to the blood pressure.

**CAUSES.** Those causing arterio-sclerosis are the chief causes. Exertion is an exciting cause. Aneurisms occur in early middle life rather than in old age, when the force of the heart has decreased. More common in men than in women.

**PATHOLOGICAL ANATOMY.** All aneurisms may be divided into two classes, dissecting and circumscribed.

Dissecting Aneurism—false aneurism—is the result of fatty changes in the internal and middle coats of the artery. The shape may be sacculated, fusiform, or cylindrical. A disease of the aged. Circumscribed Aneurism may be true or false, depending on the rupture of the walls or not. It is a disease of middle life or under. Most frequent in men, usually a true dilatation. Syphilis is a most frequent cause.

#### I. ANEURISM OF THE ARCH.

**SYMPTOMS.** The onset is usually gradual, with evidences of arterio-sclerosis and failing health.

Pain, either paroxysmal or constant, is a constant symptom, with increasing dyspnoea. The difficulty in breathing may be constant with exacerbations, or it may be remittent. Rarely dysphagia occurs. A slight cough from pressure on the laryngeal nerve with more or less alterations in the voice may be present. The pupils are dilated or contracted or are irregular, in some cases due to pressure on the sympathetic nerve. There is a gradual loss of flesh, disorders of the circulation, and a careworn expression of the face.

**INSPECTION.** Negative until the appearance of a pulsating tumor.

**PALPATION.** A pulsation over the tumor expansive in character (Corrigan's sign). If the aneurism is situated at the transverse portion of the arch, the left pulse and the left carotid are smaller and weaker than those on the right side. Tracheal tugging is a diagnostic sign (Page). "Place the patient in the erect position with his mouth closed and chin elevated to the fullest extent. Then, on grasping the cricoid cartilage between the fingers and thumb and making gentle traction upward, the pulsations of dilated aorta or aneurism, if any exist, will be distinctly felt, in most cases transmitted through the trachea to the hand."

**PERCUSSION.** Dullness, the extent depending on the size of the tumor. Dullness, other than cardiac, across the sternum is diagnostic of a mediastinal tumor.

**AUSCULTATION.** Over the tumor a murmur or bruit is usually heard, synchronous with the first sound of the heart. It is louder than the systole, lower in pitch, and of a blowing character.

**DIAGNOSIS.** If the tumor can be seen or felt, the diagnosis is made, its location being determined by a study of the physical signs.



## II. ANEURISM OF THE THORACIC AORTA.

**SYMPTOMS.** The most constant symptom is deep-seated thoracic pain, constant or paroxysmal. Dysphagia is a frequent condition. There is seldom dyspnoea, and alterations of voice and pupils do not occur. Physical signs are usually wanting, and the diagnosis is rarely made during life.

## III. ANEURISM OF THE ABDOMINAL AORTA.

**SYMPTOMS.** The chief and most constant symptom is pain at a circumscribed spot in the abdomen, or diffused. Other symptoms depend upon the location of the aneurism, as they are the result of pressure. There is a gradual loss of health.

**INSPECTION.** Usually negative unless the aneurism reach an enormous size.

**PALPATION.** A pulsating tumor in the abdomen to the left of the median line. The pulsation is synchronous with the first sound of the heart, and is expansile (Corrigan's sign) in character.

**PERCUSSION.** Dullness may be elicited if the tumor is large and the abdomen emaciated.

**AUSCULTATION.** Rarely a murmur or bruit is heard, systolic in time.

**DIAGNOSIS.** Abdominal aneurism and pulsating abdominal aorta may be mistaken for each other. The point of difference is, in the aneurism, the presence of the tumor with an expansile pulsation, while in pulsating abdominal aorta the beating is like a pulsating cord, an up-and-down movement, not expansile. The condition of the patient is also important; aneurism in males, at middle life, with changes in the vessels; abdominal pulsation occurring in nervous women or effeminate men.

Tumors located over the abdominal aorta may give rise to an apparent pulsation, causing them to be mistaken for an aneurism. The rule is in all cases of abdominal pulsation to place the patient in the knee-chest position; if the tumor is aneurismal, the expansile pulsation continues; if not an aneurism but a cancer, impacted faeces, or other tumor, the pulsation at once ceases.

**PROGNOSIS OF AORTIC ANEURISMS.** Unfavorable. The duration of life after the development of the aneurism is from one to four years.

TREATMENT FOR ALL HEART AFFECTIONS.

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The equalization of the circulation throughout the body should be promoted as much as possible.

These affections demonstrate the variableness of the symptoms according as different nerve filaments are involved, in the different structures, and yet the removal of the venous obstruction leaves the channels free to carry off the waste, and makes room for capillary circulation; that brings in arterial blood to rebuild the waste tissue, caused by degenerative tissue metamorphosis. Keep lifting off the pressure. The treatments should be applied according to conditions, effects, etc.

The condition recognized as Palpitation (the most common of all complained of) is relieved almost instantaneously by steadily and strongly raising the left arm, and lifting the clavicle in the usual way, and pressing the knee between the scapulae, while the arms are drawn upward and backward a time or two.

The other affections of the heart require a very special attention, recognizing the fact that too much or too severe treatment should be avoided, and always to endeavor to do all that is possible to regulate and equalize the circulation as much as can be under the circumstances, persistently, repeatedly.

# DISEASES OF THE NERVOUS SYSTEM.

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The diseases of the nervous system will be described under the following named headings:

1. Diseases of the cerebral membranes.
  2. Diseases of the cerebrum.
  3. Diseases of the spinal cord.
  4. Diseases of the nerves.
  5. General or nutritional diseases.
  6. Mental diseases.
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## DISEASES OF THE CEREBRAL MEMBRANES.

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### PACHYMENINGITIS.

**SYNONYMS.** Meningitis; haematoma of the dura mater.

**DEFINITION.** Inflammation of the dura mater; when the external layer is primarily involved it is termed pachymeningitis externa; when the internal layer is primarily involved it is termed pachymeningitis interna.

**CAUSES.** Pachymeningitis externa is a surgical malady, excited by fractures, penetrating wounds, and other injuries of the skull.

Pachymeningitis interna is due to blows upon the head without injury to the skull. A predisposition may be created by chronic alcoholism, scurvy, Bright's disease and syphilis. Chronic internal otitis and suppurative inflammation of the orbit may cause it, also inflammation in the venous sinuses the result of a thrombus undergoing suppurative changes.

**PATHOLOGICAL ANATOMY.** Pachymeningitis Interna.—Hyperaemia of the membrane, followed by an exudation which develops into a membranous new formation, containing a great number of vessels of considerable size, but having very thin walls.

Hemorrhages from these new vessels are of frequent occurrence, which increase the size and thickness of the neo-membrane.

The usual position of the neo-membrane or new formation is on the upper surface of the hemispheres, extending downward toward the occipital lobe. The changes in the adjacent portion of the brain are dependent on the size and thickness of the neo-membrane. Bartholow observed a case in which the "cyst" was half an inch in thickness at its thickest part, and it depressed the hemisphere correspondingly, the convolutions being flattened, the sulci almost obliterated, and the ventricle lessened one-half in size.

In Pachymeningitis syphilitica, the pathological lesion is in the form of gummatous tumors or masses which may degenerate and become either cheesy masses or be converted into a purulent looking fluid. In old age the dura mater becomes thick, cartilaginous, and of a dull, white color. The sheaths of the arteries are also thickened.

**SYMPTOMS.** Very obscure; principally those of cerebral pressure. Cases of persistent headache, vertigo, photophobia, anorexia, insomnia, gradual impairment of intellect and locomotion, followed by delirium, and convulsions and coma, or by apoplectic attacks and paralysis; in the aged, or those in whom some one of the causes of the affection are present, an inflammation of the dura mater may be suspected. Circumscribed painful œdema behind the ear and less fullness of the jugular of the corresponding side, the phlegmasia alba dolens en miniature of Griesinger, are indicative of thrombosis in the transverse sinus, as was first shown by Virchow.

**DIAGNOSIS.** Always problematical, as the symptoms are masked and so obscure that a positive diagnosis is impossible.

**PROGNOSIS.** Most unfavorable for either forms, although the course of the malady is usually slow. Surgical treatment in traumatic cases offers some hope.

**TREATMENT.** See General Treatment for Brain Troubles.

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## ACUTE MENINGITIS.

**SYNONYMS.** Acute leptomeningitis; cerebral fever; arachnitis.

**DEFINITION.** An acute exudative inflammation of the cerebral pia mater and arachnoid membranes, usually limited to the convexity of the cerebrum; characterized by fever, vomiting,



headache, delirium, and followed by symptoms of general collapse.

**CAUSES.** During the course of the acute infectious diseases; erysipelas; associated with or a sequela of influenza. Cerebral overwork; prolonged wakefulness; acute alcoholism; exposure to the sun; disease of the internal ear; secondary to diseases of serous membranes. Most frequently in early adult life and in young children, and in males rather than females. "The micro-organisms found in meningitis are the pneumococcus, streptococcus pyogenes, intracellular diplococcus, the pneumo-bacillus, and a bacillus resembling that of typhoid fever." (Dana.)

**PATHOLOGICAL ANATOMY.** The inflammatory changes may be limited either to the convexity or to the base of the brain, but more frequently both portions are involved.

Intense hyperaemia of both membranes, followed by a purulent and fibrinous exudation. The ventricles may be filled with fluid, compressing and flattening the convolutions.

In twenty-five post-mortem examinations at the Philadelphia Hospital a meningo-encephalitis was present in fourteen.

**SYMPTOMS.** Vary according to the stages:—

**Prodromes**—Headache, vertigo, cerebral vomiting, more or less feverishness, continuing from a few hours to one or two days, when occurs the

**Stage of Invasion.**—Onset sudden, with chill, high fever, 103 degrees to 104 degrees, pulse 100-120, face flushed, with congested eyes, headache, most intense and continuous, ringing in the ears, photophobia, vertigo, the nausea aggravated, projectile vomiting, with delirium.

**Stage of Excitation.**—General sensibility of the body increased, sensitiveness to light, and acuteness of hearing, delirium furious, often resembling mania, continual jerking of the limbs, oscillations of the eyeballs—nystagmus—twitching of the muscles, even to the extent of opisthotonos, and in children convulsions. Duration, from one day to a week or two. The finger drawn across the surface leaves a red line—the *tache cerebrale*.

**Stage of Depression or Collapse.**—The patient gradually becomes more quiet, the delirium subsiding, as well as the muscular agitation; somnolence develops, passing into coma, at times temporary consciousness, coma soon following again; pulse irregular and slow, fever less; various palsies, to-wit: strabismus, ptosis, pupils uninfluenced by light, mouth drawn to one side,



PLATE XLV.—Method of Stimulating Vaso-motor Nerves.



urine and faeces involuntarily discharged. Death following, either by convulsions or by deepening coma with cyanosis.

**DIAGNOSIS.** The characteristic symptoms indicating the existence of acute meningitis are headache, vomiting, fever and delirium, all developing rather rapidly. The headache is more persistent, the vomiting not due to gastric trouble. The absence of any one of the four characteristic symptoms named above does not prove the absence of meningitis, nor does the combination of delirium and fever alone determine the presence of meningeal disease.

Cerebro-spinal fever closely resembles acute meningitis, the points of distinction between which are the first named occurring epidemically, associated with marked spinal symptoms and an eruption. Meningitis and abscess of the brain are apt to be mistaken for each other, the differential diagnosis being pointed out in that disease.

The cerebral symptoms of rheumatism are differentiated from idiopathic meningitis by the association of the joint trouble. Cerebral symptoms of typhoid and typhus fever have a close resemblance to idiopathic meningitis, and are only determined by a study of the clinical history.

In acute uraemia the face is turgid, oedematous, with puffiness of the eyelids; in meningitis the face is pale and no oedema; uraemia has decided albuminuria; it is slight or absent in meningitis; meningitis has chills followed by fever; uraemia has irregular temperature record rapidly rising to 104 degrees F. to 106 degrees F., and dropping to 99 degrees F., to as rapidly rise again, and usually associated with convulsions.

In delirium tremens the delirium is a busy one, the patient imagining persons and animals around him, and is wild in his gestures and utterances; the temperature is normal or subnormal, the skin wet and clammy. In meningitis the delirium is mild but incoherent, the surface is hot and dry, and there are severe vomiting and headache.

**PROGNOSIS.** Not very favorable. If recognized early and treated, a fair number of recoveries occur, but it usually leaves the patient subject to attacks of epilepsy or with a persistent headache, and more or less mental impairment.

**TREATMENT.** See General Treatment for Brain Troubles.



## TUBERCULAR MENINGITIS.

**SYNONYMS.** Basilar meningitis; acute hydrocephalus.

**DEFINITION.** An inflammation of the leptomeninges (soft membranes), most particularly the basal pia mater, attended with or due to the deposit of gray miliary tubercle; characterized by gradual decline of the bodily and mental powers.

**CAUSES.** Usually a secondary affection, a sequel to tubercular disease of some other organ. Most frequently occurs in children between two and six years of age, although numerous cases are reported occurring between twenty and thirty years; scrofulous diathesis; inherited diathesis. The "gelatinous children of albuminous parents," as the phrase goes, possess a special susceptibility to tubercular meningitis.

**PATHOLOGICAL ANATOMY.** The deposition of tubercle usually occurs at the base of the brain.

Depositions of grayish-white granules, of a translucent, somewhat gelatinous appearance—miliary tubercle, are distributed along the vessels of the pia mater, resulting in inflammation and the exudation of lymph, with the consequent thickening and opacity of the membranes. The cerebral tissue is not usually involved, although on section the lines indicative of blood vessels are very much increased in number. The ventricles are distended by a clear, or milky, or even bloody serum. Tubercular deposits occur in the lungs, intestines, and, at times, in other organs. The presence of the tubercles alone may give rise to no symptoms until the exudative products of the resultant inflammation develop.

**SYMPTOMS.** The advent is either gradual and insidious, or with convulsions, in which cases the after progress is rapid.

**Prodromes.**—The child grows irritable, with loss of appetite, loss of flesh, swollen abdomen, constipation alternating with diarrhea, irregular attacks of feverishness, with attacks of grinding its teeth during sleep, or sleeplessness. Headache occurs, as shown by the child, even when at play, suddenly stopping and resting its head on its hand or on the floor. Duration of this stage is from one week to a month or two.

**Stage of Excitation.**—The onset is rather sudden, with obstinate vomiting, severe headache, convulsions, fever, 102 degrees to 103 degrees in the evening, falling to 99 degrees in the morning, pulse soft and compressible, with irregular rhythm. On drawing the finger nail lightly over the surface a red line results, "the cerebral stain" of Trousseau. The symptoms grow progressively

worse with exaltation of the special general senses; the least pinch or even touch causing exquisite pain; spasmodic movements of the muscles, with contraction and rigidity, at times opisthotonos. Duration of this stage is about two weeks.

Stage of Depression.—The result of the pressure of the exudation; the pulse slow and compressible, with irregular rhythm; temperature depressed; tendency to somnolence alternating with quiet delirium, mental stupor, continual movement of the fingers, as in picking up objects; convulsions from time to time, strabismus, oscillation of the eyeballs, followed by intervals of wakefulness, when the headache is excruciating, causing the peculiar, unearthly shrill cry or shriek, "the hydrocephalic cry," associated with contraction of the muscles of the face, as if suffering were experienced; finally collapse, occurring with the "Cheyne-Stokes" respiration, the coma deepening, followed by death, convulsions ending the scene. Duration, from a day or two to two weeks.

DIAGNOSIS. Acute meningitis and tubercular meningitis have closely analogous symptoms during the stage of excitation, but the history and clinical course of the two maladies determine the diagnosis.

PROGNOSIS. Unfavorable. Usual duration, three or four weeks after fully developed prodromes. If ushered in by convulsions, the duration is shorter.

TREATMENT. See General Treatment for Brain Troubles.

## DISEASES OF THE CEREBRUM.

### CONGESTION OF THE BRAIN.

SYNONYMS. Cerebral hyperaemia; cerebral congestion.

DEFINITION. An abnormal fullness of the vessels (capillaries) of the brain; active, when arterial fullness; passive, when venous fullness; characterized by headache, vertigo, disorders of the special senses, and, if hyperaemia be decided, convulsions.

CAUSES. Active.—Increased cardiac action, the result of hypertrophy of the left ventricle; general plethora; excesses in eating and drinking; acute alcoholism; sunstroke; prolonged mental labor: diminished amount of arterial blood in other parts, the result of the compression of the abdominal aorta; ligation of

a large artery, and the suppression of an habitual bleeding hemorrhoid are examples. Passive.—Dilatation of the right heart; pressure upon the veins returning the cerebral blood.

While congestion of the brain is not so common as was once supposed, the view that it can not occur is disproven by the results following the inhalation of a full dose of amyl nitris. The relief of head symptoms after a free epistaxis and the distress resulting if it does not occur is another instance.

**PATHOLOGICAL ANATOMY.** The post-mortem appearances are, overloading of the venous sinuses and of the meningeal vessels, including the finer branches; the pia mater appears vascular and opaque; the gray matter of the convolutions unduly red; the convolutions may be compressed and the ventricles contracted, with the displacement of a corresponding amount of cerebro-spinal fluid. Long continued or repeated congestions lead to enlargement and tortuosity of all the vessels, a moist and slimy condition (œdema) of the cerebral substance, and an increase in the sub-arachnoid fluid.

**SYMPTOMS.** "Rush of blood to the head" may be gradual or sudden in its onset, the symptoms aggravated by the recumbent position. Headache, with paroxysmal neuralgic darts, disorders of vision and hearing, buzzing in the ears and sparks before the eyes, contracted pupils, vertigo, blunted intellect, inability to concentrate the mind, irritable temper, and curious hallucinations. The face is red, the eyes congested, and the carotids pulsating. The sleep is disturbed by dreams and jerkings of the limbs. If the attack be sudden (apoplectiform), sudden unconsciousness with muscular relaxation occur. Cerebral hyperaemia in children often presents alarming symptoms, such as great restlessness, insomnia, night terrors, gnashing of the teeth during sleep, vomiting, contraction of pupils, followed by general convulsions. Any or all of these symptoms may continue more or less marked from an hour or two to a day, the child enjoying its usual health, after a sound sleep, save some fatigue.

**PROGNOSIS.** Mild cases terminate favorably in a few hours to a day or two, but show a strong tendency to recur. Severe cases (apoplectiform) may terminate in health, but usually foretell cerebral hemorrhage.

**TREATMENT.** See General Treatment for Brain Troubles.

## CEREBRAL ANÆMIA.

**DEFINITION.** An abnormal decrease in the quantity of blood in the cerebral vessels; general, when the diminished supply includes all the vessels; partial, when the diminished supply is limited in area; characterized by pallor, headache, vertigo, some loss of power, and, rarely, convulsions.

**CAUSES.** Partial cerebral anaemia results from obstruction of a vessel, from embolism or thrombosis. General cerebral anaemia results from hemorrhages, wasting diseases, during convalescence from severe attacks of fevers, sudden shock, feeble cardiac action, and general anaemia.

**PATHOLOGICAL ANATOMY.** The blood in the brain is contained in the arteries, capillaries, and veins. The functional condition of the brain depends on the quantity and quality of the blood circulating in the cerebral capillaries. Any decrease in the normal quantity or impairment in the quality produces the symptoms of cerebral anaemia. The brain is pale and milky in color, and on transverse section there are no bloody points; the ventricles and perivascular lymph spaces are well filled with fluid. In partial anaemia the local conditions differ somewhat from the above.

**SYMPTOMS.** General.—Headache, relieved by the recumbent position; vertigo, aggravated by exertion; general pallor, and anaemia, with attacks of fainting; when the general cerebral anaemia is sudden and decided, convulsions occur. In partial anaemia, sudden loss of power, of limited muscular area, gradually returning to the normal condition.

**PROGNOSIS.** Favorable in all cases save those the result of severe and repeated hemorrhages.

**TREATMENT.** See General Treatment for Brain Troubles.

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CEREBRAL HEMORRHAGE.

**SYNONYMS.** Apoplexy; "a stroke."

**DEFINITION.** The sudden rupture of a cerebral vessel and escape of blood into the cerebral tissue, causing pressure and more or less destruction of the brain substance; characterized by sudden unconsciousness, irregular, noisy respiration, and complete muscular relaxation.

**CAUSES.** Rare under forty years of age. The principal cause is disease of the vessels—the development of miliary aneu-



risms, or a chronic endarteritis with an associated cardiac hypertrophy; hereditary tendency; Bright's disease; syphilis; alcoholic and dietary excesses; gout. More frequent in the spring and autumn.

**PATHOLOGICAL ANATOMY.** The most common locations of cerebral hemorrhage are the internal capsule, corpus striatum, and thalamus opticus; less common the anterior and middle cerebral lobes and the cerebellum; next in frequency the pons and medulla oblongata; and rarely on the convexity of the brain, termed meningeal hemorrhage. When the hemorrhage is large, the blood may break into the ventricles and pass by the iter from the third to the fourth ventricle. A recent clot is dark in color, and in consistency a soft, grumous mass, composed of coagulated blood and brain substance in varying proportions, at whose center is the opening into the ruptured vessel. The clot excites inflammation around it, resulting in its being encysted, by the development of new connective tissue from the neuroglia, and then gradually absorbed, leaving a cicatrix; or the brain tissue around the clot softens and degenerates—localized softening.

**SYMPTOMS.** The attack may occur suddenly as an apoplectic shock or stroke, or slowly with prodromes or "warnings."

**Prodromes.**—Headache, vertigo, transient deafness or blindness, sensation of numbness of the extremities, with local palsies, together with the constant dread of an attack.

The attack begins with vomiting, followed by either partial or complete insensibility; respiration slow, irregular, and noisy; during the inspiration the paralyzed cheek is drawn in, and puffed out in expiration; pulse slow and full; pupils uninfluenced by light, the face flushed, the eyes congested and the carotids throbbing; the temperature declines below the normal, a degree or two, but rises within twenty-four hours to 100-101 degrees F°. In fatal cases it may rapidly rise to 107-108 F°.

The muscular system is profoundly relaxed, and the reflex movements are abolished. The head and eye deviate, in many cases, toward the affected side in the brain, or from the paralyzed side. Rarely convulsions occur.

Ingravescent apoplexy begins as a mild stroke with a rapid return to consciousness and power, except, perhaps, of speech. Headache is present with some one or more local symptoms, and in a few hours to a few days consciousness gradually becomes impaired, the loss of power again occurs, the coma deepens, the patient dying comatose. If the unconsciousness continues longer

than twenty-four hours, death is the usual termination, preceded by pale face, irregular and rapid pulse and respiration, and rise of temperature.

Reaction obtains in from a half to three hours, consciousness returning, reflex excitability reviving, associated with headache, confusion of mind, and more or less paralysis of motion, and sensibility of one side of the body, termed hemiplegia.

The electro-excitability of the paralyzed parts is preserved.

Recovery may be delayed by inflammatory symptoms, the temperature rising to 101-104 degrees F., with tonic contractions (early rigidity) of the paralyzed muscles and severe neuralgic pains.

Localization of the lesion of a cerebral hemorrhage is of great practical importance.

Capsular hemorrhage, the most frequent, causes loss of consciousness, of sudden or rapid onset, hemiplegia, involving face, arm, and leg, with motor aphasia if the hemiplegia be on the right side. There is also a unilateral loss of reflex action, conjugate deviation of the eyes from the paralyzed side, and unilateral defective movement with flaccidity of the limbs.

Cortical hemorrhage, localized unilateral paralysis of the face, the arm, or the leg, with local convulsions or convulsions that have a local beginning, or profound unconsciousness.

Centrum ovale hemorrhages resemble the cortical with the local convulsions.

Crus-cerebri hemorrhage, loss of consciousness with hemiplegia involving the lower half of the face and the limbs, with paralysis of the third nerve on the opposite side, or the side of the lesion. The unilateral third nerve symptoms are ptosis, external strabismus, dilatation of the pupil, and loss of accommodation for near objects. The paralysis is termed "crossed" or "alternate" hemiplegia.

Pons hemorrhage causes either general convulsions or irregular convulsions in the legs, bilateral motor paralysis, bilateral anaesthesia, either contracted or dilated pupils, embarrassed respiration, repeated non-gastric vomiting, and high temperature. If the hemorrhage is large, death is sudden or within a few hours, and even if small the prognosis is unfavorable.

Ventricular hemorrhages are generally of the ingravescens variety, and are characterized by a second apoplectic seizure soon after the first, with extension of the hemiplegic symptoms or a relaxation of the muscles from one side to both sides of the body.

Cerebellar hemorrhage varies so greatly in the symptoms that a positive diagnosis can seldom be made.

Meningeal or dural hemorrhage, usually due to a trauma. Two varieties: 1. Infantile meningeal hemorrhage, occurring during labor. 2. Extra-dural hemorrhage, the result of direct injury to the head. The infantile variety presents symptoms of irritation and compression of the cortex, such as convulsions, general or unilateral, rigidity, opisthonos, and either hemiplegia or diplegia. The extra dural variety is almost always the result of fracture or trauma of the skull, resulting in an extravasation of blood between the dura and the skull from the middle meningeal artery; the hemorrhage may be on one or both sides. The symptoms may develop at once or after some days, and are those of pressure, hemiplegia, partial or complete, convulsions, impaired or absent reflexes, dilatation with loss of reaction of pupil of opposite side, stupor gradually deepening into coma and death.

SEQUELÆ. Paralysis of the muscles of the face, tongue, body and extremities of one side, opposite to the location of the hemorrhage, termed unilateral paralysis or right or left hemiplegia. Paralysis of both sides of the body, due to simultaneous hemorrhage on both sides, termed bilateral hemiplegia, or diplegia.

Paralysis of one side of the face and the extremities of the opposite side, due to hemorrhage into the pons Varolii, termed alternating or crossed paralysis. Occasionally tonic contractions occur in muscles long paralyzed, termed late rigidity, and is evidence of a secondary degeneration of the nerve fibers. Chronic movements in paralyzed muscles are termed post-hemiplegic chorea, due, according to Charcot, to changes in the motor centers. The mental powers are always more or less permanently impaired, the patient irritable and emotional, and the same holds good concerning the memory.

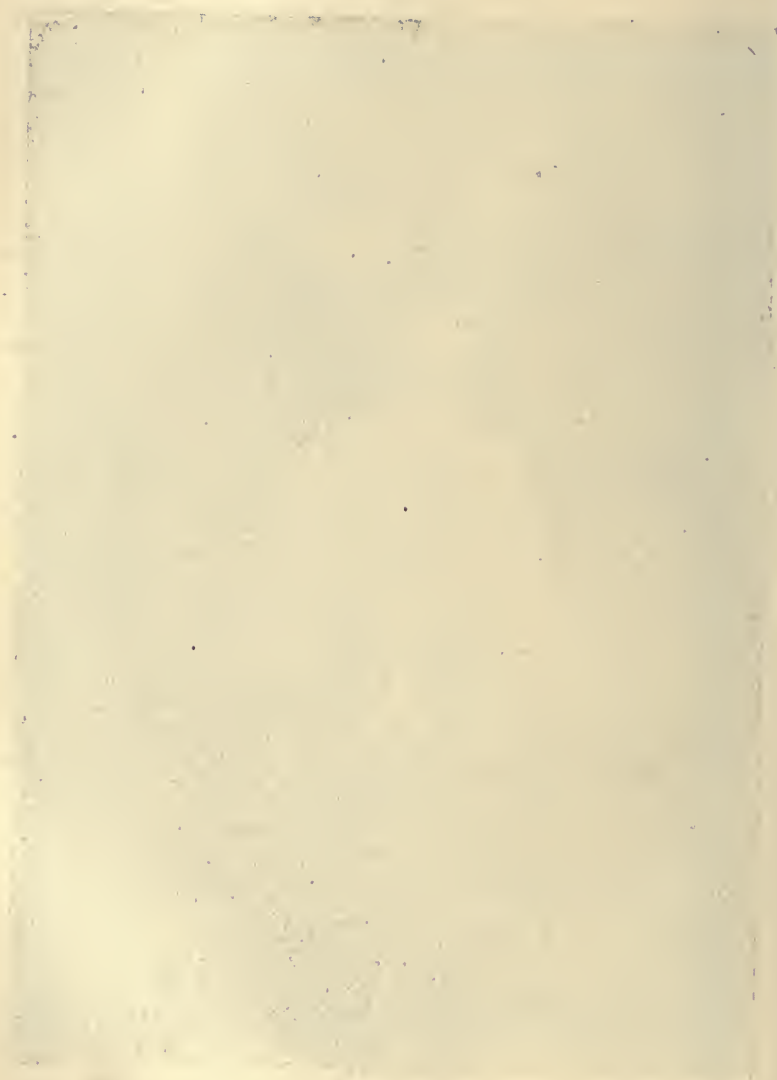
DIAGNOSIS. The diagnosis of the apoplectic seizure is often one of the most difficult questions in medicine, and yet of the greatest importance, as the treatment hinges on it. The diagnosis of the sequelae is comparatively easy.

Insensibility from drink differs from apoplexy in the following points, to-wit: insensibility is not so complete, no drawing in and puffing out of one cheek with respiration, the pulse frequent instead of slow, the pupils influenced by light; upon raising both legs no difference is apparent on allowing them to drop; the eyes and head are not turned to one side, and lastly, the condition is ameliorated on the inhalation of ammonia. I have satisfactor-



PLATE XLVI.—Extenso-rotary Neck Treatment.





ily used Dr. Von Wedekind's test for temulence, to-wit: "By simply pressing on the supraorbital notches with a steadily increasing force you may, with certainty of success, bring an unconscious alcoholic to his senses, and thus differentiate between alcoholic and other comas."

Opium poisoning differs from apoplexy by the gradual approach of the coma, and that the patient can be momentarily aroused, and also by the absence of the heavy stertor of apoplexy.

Uraemia causes a coma that closely resembles apoplexy. A history of Bright's disease at once clears up the case; again, uraemic coma is generally preceded by convulsions, a rapid rise of temperature as shown by the thermometer, often 104 to 106 degrees F., while to the hand the surface appears but little, if at all, above the normal; the pulse is usually weak with irregular force, the respirations averaging twenty-five to thirty per minute, the face having a glossy appearance.

Cerebral embolism can not always be differentiated from apoplexy. We may suspect cerebral plugging, if the patient be young; if he be laboring under acute or chronic cardiac valvular trouble; if, within brief periods, several incomplete attacks have occurred before a complete comatose condition obtains; or, if hemiplegia results with passing or slight unconsciousness; or, if the phenomena are sooner or later followed by cerebral softening, as embolism and thrombosis are the most common causes of softening.

Syncope or a fainting fit is of sudden onset, but being due to a failure of the circulation, the pulse is feeble, the face pale, the respiration quiet, and the duration of unconsciousness short, all the very opposite of an apoplectic attack.

PROGNOSIS. If the patient survive the immediate effects of a cerebral hemorrhage, he is always in danger of a new attack, since the causes of the original attack still remain. Another attack or two is the usual course, a fatal termination ultimately occurring.

The hemiplegia is uncertain; a partial recovery may occur within a few months, or it may continue for years.

TREATMENT. See General Treatment for Brain Troubles.

## CEREBRAL THROMBOSIS AND EMBOLISM.

**SYNONYMS.** Partial cerebral anaemia; occlusion of cerebral vessels; cerebral apoplexy (?).

**DEFINITION.** The occlusion of a cerebral vessel, from the formation of a thrombus, or the presence of an embolus, thus causing anaemia of some portion of the brain; characterized by the gradual—when the result of thrombosis, and the sudden, when due to embolism—development of headache, vertigo, disorders of intelligence, with more or less complete insensibility and paralysis.

**CAUSES.** Thrombosis, or the formation of a clot in the vessel—an ante-mortem coagulation—is almost always the result of chronic endarteritis, as seen in the aged, together with a showing and weakening of the blood current. Chronic alcoholism and syphilis are the usual causes when occurring in young adults. Emboli, in the great majority of instances, result from an endocarditis—cardiac emboli; small particles of the exudation being carried into the circulation and deposited in the brain. Emboli may also be derived from aortic aneurism, or syphiloma of the great vessels.

**PATHOLOGICAL ANATOMY.** The cerebral arteries may be obstructed by emboli or thrombi; the cerebral veins and sinuses by thrombi only. The changes in the cerebral tissue are those of anaemia of the part or parts supplied by the occluded vessels. The subsequent changes depend upon the anatomy of the vessels. If the obstructed artery has anastomoses, the collateral circulation is soon established and the brain tissue assumes its normal condition. If, on the other hand, the occluded vessel be one of "Cohnheim's terminal arteries"—arteries without anastomoses—the blood in the whole extent of the occluded vessel coagulates, thus preventing the backward flow of blood from the surrounding capillaries, and so obstructing collateral circulation, whence the anaemic tissue dies or undergoes necrobiosis, followed by yellowish-white softening; or, if the vessel beyond the seat of the occlusion remains pervious, blood flows back through the capillaries from the nearest artery or vein; the parts that a short time before were bloodless now become deeply engorged, the succeeding changes in the vessels permitting diaporesis of the red blood globules; the tissues which are undergoing disintegration are colored by the red globules, causing the appearance entitled "red softening," which after some weeks becomes "yellow softening," finally changing to "white softening," when there is a milky, or

rather creamy, fluid mixed with masses or particles of broken-down nerve elements.

The vessel most commonly occluded is the left middle cerebral artery, which sends branches to the second and third frontal convolutions, the anterior and superior portions of the three temporal convolutions, the island of Reil, the parietal convolutions, part of the external and all of the internal capsule, the lenticular nucleus, and most of the corpus striatum—the motor centers.

**SYMPTOMS.** Two distinct modes of onset: gradual, when the result of thrombosis; sudden or apoplectic, when due to embolism.

**Cerebral Thrombosis.**—Most common in the aged. Persistent headache and vertigo, at one time severe and at another mild. Next, alterations in patient's character; irritable, morose and despondent, with periods of absent-mindedness, disorders of vision, and impairment of memory, speech becoming hesitating and mumbling. Impaired locomotion, the result of the vertigo, and of muscular weakness and trembling, followed sooner or later by hemiplegia, which may be preceded by sudden insensibility or occur gradually, the symptoms slowly proceeding to senile dementia and death from exhaustion; or, rarely, the symptoms are not so grave, and partial or complete recovery occurs after the hemiplegia, from establishment of the "collateral circulation."

**Cerebral Embolism.**—The symptoms are sudden, but either mild or grave in character.

**Mild Variety.**—Sudden and severe vertigo, confusion of mind, muscular twitchings, usually one-sided, and vomiting, followed by hemiplegia, most frequently of the right side, the intellect clear but hesitating. After some weeks or months the paralysis usually disappears and recovery is complete.

**Grave or Apoplectic Variety.**—Sudden headache, vertigo, flushing or pallor of the face, or the patient may utter a sharp cry, fall to the ground with sudden unconsciousness and complete muscular relaxation, followed by death, or a gradual return of consciousness with hemiplegia, which is generally right-sided, with aphasia, remaining for several weeks or months, or is persistent, the mind remaining normal or enfeebled and the emotional nature highly excitable and the reason and judgment clouded, continuing thus for years, or gradually developing into dementia, exhaustion and death.

The following are some of the symptoms of "localization" if particular vessels are blocked:

Vertebral artery, the left most frequently, which results in



acute bulbar paralysis from involvement of the nuclei in the medulla, associated or not with hemiplegia.

Basilar artery, which causes diplegia with bulbar symptoms. There is rapid rise of temperature. Death follows within a day or two, or suddenly, if respiratory centers are involved.

Middle cerebral artery is the most frequent seat of embolic or thrombotic occlusions. The symptoms depend upon the exact branch involved: if plugged before the central arteries are given off, the internal capsule is deprived of its blood supply and permanent hemiplegia may follow; if the blocking is in the central branches the hemiplegia involves the arm and face, and if left side, aphasia occurs. The individual branches passing to the third frontal (aphasia), the ascending parietal (hemiplegia, particularly hand), supra-marginal and angular gyri (word blindness), and the temporal gyri (word deafness), may be plugged.

**DURATION.** Thrombosis, essentially an affection of the elderly, has a chronic course. Months and years may be occupied with the various symptoms until the phenomena of senile dementia develop. Embolism is of sudden onset, and may be followed by a rapid recovery.

**DIAGNOSIS.** Thrombosis is associated with changes in the vessels, the arcus senilis, and other evidences of senile degeneration.

Embolism may be mistaken for cerebral apoplexy, and while a positive differentiation can not always be made, the chief point to be considered is the presence of cardiac murmurs.

**PROGNOSIS.** Thrombosis is a permanent and progressive condition in the majority of instances. Recovery is a rare termination. Embolism may be followed by a perfect recovery. Usually, however, some evidences of the plugging remain permanently. Death may be the result within a day or two, from the plugging of a large vessel, the patient never emerging from the coma. In other cases the patient arouses from the coma, the hemiplegia with aphasia persisting, and the case pursues the usual course of localized cerebral softening.

**TREATMENT.** See General Treatment for Brain Troubles.

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### CEREBRAL ABSCESS.

**SYNONYMS.** Acute encephalitis; suppurative encephalitis.

**DEFINITION.** An acute suppurative inflammation of the brain structure, either localized or diffused, primary or secondary;

characterized by impairment of intellect, sensation, and motion.

**CAUSES.** Primary cerebral abscess is exceedingly rare. Pyaemia; glanders; embolus from ulcerative endocarditis. Secondary cerebral abscesses result from injuries to the cerebral tissues, to-wit: apoplexy, embolism, thrombosis, and injuries to the cranial bones. Chronic ear disease; chronic suppuration in some other portion of the body.

**PATHOLOGICAL ANATOMY.** Abscess of the brain affects the left side more frequently than the right. They are usually encysted or inclosed in a limiting membrane. Abscesses of the brain may be single or multiple, varying in size from an almond to an egg. It occupies a limited and well-defined region of the cerebral tissue, to-wit: either corpora striata, optic thalami, gray matter of the cortex, the cerebellum, or the white matter of the hemispheres.

"The initial stage at the site of the abscess is hyperaemia. Minute extravasations take place (capillary hemorrhages), giving to the inflamed area a dark, reddish color, whence the term red softening. Migration of white corpuscles, diapedesis of some red corpuscles and exudation of serum holding albumen and fiber in solution, occur simultaneously. The brain tissue, being soft and easily broken up, is rapidly dissociated and its elements disintegrated, and in a short time a soft, pultaceous, red mass results, which more and more assumes a purulent character, becoming first reddish-yellow, then yellow or greenish-yellow, ultimately almost white. The injury caused by an abscess is not limited to the portion of the brain inflamed, but the neighboring territory is in the condition of collateral hyperaemia and oedema." (Bartholow.)

**SYMPTOMS.** A concise description of the symptoms of abscess of the brain is very difficult, on account of the wide variations dependent on its location, and also the difficulty of isolating it from the affections to which it is secondary. The onset varies according to the cause, although all cases are associated with headache, irritative fever, vomiting, persistent and spreading paralysis, convulsions, optic neuritis, mental apathy, delirium, and coma. If following apoplexy, thrombosis, or emboli, there occur fever and delirium, the paralysis remaining and spreading with spasmodic contractions of the affected muscles.

Occasionally cases run a chronic course, the onset rather insidious; dull, persistent headache, changed disposition, peevish,

irritable, unreliable, with decline of moral sensibility; easily fatigued by mental work; inability to stand exertion; memory impaired; vertigo; dyspepsia, soon followed by slight palsies, which progressively increase, becoming general, with involuntary discharges, death following from exhaustion.

Of the focal symptoms, hemiplegia, of incomplete character, occurs in about one-half of all cases of abscess of the brain. A very constant symptom of diagnostic value, when hemiplegia is very marked, is exaggerated knee-jerk with pronounced ankle clonus.

**DIAGNOSIS.** A positive diagnosis is only possible by a close study of the causes and the clinical history, as the symptoms at times indicate meningitis and again cerebral tumor.

Purulent meningitis may follow trauma to the brain or chronic ear disease, making the diagnosis impossible. The chief points of distinction are, the subacute or chronic course of abscess (rarely an acute course), slight involvement of cranial nerves, hemiplegia, and the presence of an active, persistent, unilateral ankle clonus and exaggerated knee-jerk on paralyzed side.

**PROGNOSIS.** The usual termination is in death. The course depends upon the character and extent of the injury, varying from a few days to several months.

**TREATMENT.** See General Treatment for Brain Troubles.

## INTRA-CRANIAL TUMORS.

**SYNONYM.** Cerebral tumors.

**DEFINITION.** Tumor of the brain is either a growth in the cerebral tissue, on the meninges, or in the vessels; characterized by symptoms of pressure upon the brain structure.

**CAUSES.** Injuries to the head; syphilis; changes in the vessels; tubercle and cancer; heredity.

**PATHOLOGICAL ANATOMY.** The size of tumors vary, and may become as large as an orange before they will give rise to symptoms. Tumors of the brain are of various kinds, to-wit: vascular tumors—aneurisms; parasitic tumors—cysticercus; diathetic tumors—tubercle or syphilis; accidental tumors—glioma. Whatever the character of the growth, it produces irritation of the surrounding parts, and by pressure, destruction of the tissues, or it interferes with the arterial or venous flow.

**SYMPTOMS.** Those common to tumors in general are, head-



ache, persistent and increasing in intensity, defects of vision, even blindness, due to an optic neuritis, a very constant symptom; defects of hearing, taste, and of speech, the result of paresis of the vocal cords; vertigo, associated with nausea and vomiting; convulsions, epileptiform in character, usually limited to one side of the body, occurring at regular intervals, or confined to the eyeballs (nystagmus), or one limb, with no loss of consciousness; palsies, beginning first as strabismus, ptosis and dilatation of the pupil, of the facial muscles, paraplegia and general hemiplegia; defects of sensibility, to-wit: sensations of numbness, and coldness in the limbs and body. Occasionally disturbances of equilibrium, manifested by a tendency to go backward or turn to the right or left; intellectual faculties well preserved until late in the affection, when the memory becomes impaired or lost for certain articles, and finally a gradually advancing imbecility.

**DIAGNOSIS.** Rarely can a positive diagnosis be made. The following points will aid: long-continued, persistent headache, without appreciable cause, epileptiform convulsions, unilateral, without loss of consciousness, difficulty of vision, hearing, and speech, associated with nausea and vomiting, and local and general palsies.

The location of the tumor may be determined by the more or less pronounced character of certain symptoms. The diagnosis of the character of the growth can only be determined by a close study of the history.

According to Herter, "the indications that suggest that the tumor is a syphilitic growth are as follows: Syphilitic history, symptoms of irritative disease of cortex rather than destructive, evidences of rapid growth at the onset, followed by a period of slow progress or stationary symptoms, gradual improvement under anti-syphilitic treatment, development between twenty and forty-five years of age."

Indications suggesting tubercular growth are: family history of tuberculosis in some other organ of the patient, rapid development of symptoms, indications of the growth in the cerebellum or in the pons, early appearance of the symptoms, especially before the tenth year, and history of injury to head.

Indications suggesting sarcoma or cancer are: the presence of a sarcoma elsewhere and rapidly failing health, with cerebral tumor symptoms in patient over fifty years.

Indications suggesting glioma: sudden loss of consciousness with exacerbation of all symptoms in the clinical history of



cerebral tumor, cortex irritative symptoms as in syphiloma, developing under fifty years of age, and the absence of all evidences of tubercle, syphilis, sarcoma, and cancer.

The focal symptoms of intracranial tumors are so important in diagnosis that the following summary is given of symptoms caused by brain tumors: Prefrontal Region.—Mental impairment, pressure in central region, causing aphasia, Jacksonian epilepsy, and disturbances of smell. Central Region.—Motor aphasia, monoplegia, partial anaesthesia, Jacksonian epilepsy. Posterior Parietal Region.—Word-blindness, homonymous hemianopsia, disturbed muscular sense. Corpus Callosum.—Progressive hemiplegia. Crus Cerebri.—Crossed paralyzes of oculo-motor nerve and limbs. Corpora Quadrigemina.—Oculo-motor paralyzes, reeling gait, possibly blindness and deafness. Pons and Medulla.—Crossed paralyzes of face and limbs, or tongue and limbs. Other lesions in cranial nerves. Cerebellum.—Marked cerebellar ataxia, vomiting, convulsions, coma. Base, Anterior Fossa.—Mental enfeeblement, and disturbances of smell and vision, exophthalmos. Base, Middle Fossa.—Impairment of vision; hemiplegia; oculo-motor disturbances. Base, Posterior Fossa.—Trigeminal neuralgia; neuro-paralytic ophthalmia; paralyzes of the face and tongue; impaired hearing; crossed paralyzes.

Diagnosis Between Cerebral Tumor and Abscess.—Both may have any or all of the following symptoms: headache, vomiting, double optic neuritis, and mental failure. Tumor has in addition, marked focal symptoms, monoplegia, hemiplegia, paralysis of cranial nerves, and marked optic neuritis; the absence of these favor abscess, or if hemiplegia the ankle clonus and knee-jerk are exaggerated. Fever and rigors point to abscess. The causes of abscess are very clear, those of tumor often uncertain.

PROGNOSIS. Unless of syphilitic origin, unfavorable; but it is to be borne in mind that all syphilitic tumors of the brain do not have a favorable termination.

TREATMENT. See General Treatment for Brain Troubles.

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## APHASIA.

DEFINITION. The inability to use spoken language or give vocal utterance to ideas. Amnesic Aphasia.—Or loss of the memory of words by which ideas are expressed. Ataxic Aphasia.—The inability to combine the different parts of the vocal appar-



PLATE XLVII.—Manipulating Muscles of Back of Neck.



atus for vocal expression, although the memory of words still remains, so that the afflicted person can write his ideas intelligently. *Agraphia*.—The inability to recognize and make the signs by which ideas are communicated in written language. *Amnesic Agraphia*.—The inability to combine the muscular apparatus—"writer's cramp." *Paraphasia*.—The mental state in which the wrong words are used to express the idea. *Paragraphia*.—The state in which wrong or meaningless written signs are used to express the idea.

**PATHOLOGICAL ANATOMY.** The distinction between aphasia and aphonia must be clearly determined.

Aphasia is not the result of any one specific lesion, but occurs during the course of several, to-wit: occlusion of certain cerebral vessels; cerebral hemorrhage; cerebral abscess or softening; meningitis; tumors; mental or moral causes; hysteria.

It is now almost definitely determined that lesions of the left middle cerebral artery, island of Reil, third frontal convolution, and parts of the corpus striatum, are associated in the production of aphasia. The lesions are usually upon the left side of the brain, the aphasia being associated with right hemiplegia.

**SYMPTOMS.** The degree to which articulate language is impaired varies from the loss of a few words to complete inability to communicate ideas. The intellect does not suffer in proportion to the loss of words; for, showing the individual an article, while he may miscall it, if you call it by name he will recognize it. This inability to convey thoughts is a source of great mental suffering, in some leading to a suicidal tendency.

A strange clinical fact is the strong tendency to profanity shown by aphasic patients.

**DIAGNOSIS.** Aphonia, or loss of voice, should not be confounded with aphasia, or the inability to remember words. Paralysis of the tongue, or inability to move this organ, thereby interfering with articulate language, should not be confounded with aphasia, which, as a rule, is not associated with paralysis of the tongue.

**PROGNOSIS.** Controlled entirely by the cause. If the result of congestion of the brain or a syphilitic tumor, the prognosis is favorable. If associated with hemiplegia, the clot may undergo absorption, and recovery follow. If associated with softening of the brain, however, the disease grows progressively worse.

**TREATMENT.** See General Treatment for Brain Troubles.



## VERTIGO.

SYNONYM. Dizziness.

DEFINITION. Vertigo or dizziness is a subjective state, in which the individual affected, or the objects about him, seem to be in rapid motion either of a rotary, circular, or a to-and-fro character.

CAUSES. The etiology of an attack of vertigo depends upon the particular variety.

Ocular vertigo results from the paresis of one or more of the ocular muscles, eye-strain, or astigmatism.

Aural or Auditory vertigo, or Meniere's disease, results from disease of the semicircular canals and cochlea. Meniere's disease, properly so-called, is a sudden severe vertigo, the result of either a hemorrhage or a serous or purulent exudation into the semicircular canals.

Gastric vertigo is the most common variety, and results from either stomachic or intestinal dyspepsia, disordered hepatic function, or constipation. "The mechanism of the vertigo is complex. There are two factors: one consists in the toxic effect of the imperfectly oxidized materials which accumulate in the blood; the other is reflex. An impression made on the end organs of the pneumogastric in the stomach is reflected over the sympathetic ganglia." (Bartholow.)

Nervous vertigo is associated with migraine, sick or nervous headache, and is also caused by physical or nervous excesses, also by the immoderate use of tea, coffee, alcohol, and tobacco. It is also a result of many of the organic diseases of the brain.

Senile vertigo is the result of the disordered cerebral circulation resulting from changes in the heart and vessels.

SYMPTOMS. In all varieties of vertigo, the symptom of a sensation of objects moving around the patient, or the patient moving around objects which remain stationary, is present in some degree. The attack of giddiness comes on suddenly, with an indistinctness of vision and slight confusion of the thoughts. The patient may fall unless he grasps something to steady himself. Nausea and vomiting and cardiac palpitation with tinnitus aurium are often associated with the vertiginous sensations. There is no loss of consciousness.

In the ocular vertigo the attack is usually the result of reading, writing, sewing, or other close application of the eyes, the ordinary symptoms of vertigo being preceded by headache, nausea, specks before the eyes, and pain in the eyeballs.

In Meniere's disease the vertigo is associated with serious tinnitus aurium and the vertiginous sensations are of various forms, such as a see-saw movement, a gyratory motion, right or left; a vertical whirl, or a sensation of rising and falling like unto the swell of the ocean. The symptoms are of long duration, becoming marked in paroxysms. The attack of aggravated vertigo is so sudden and overwhelming at times that the person is suddenly thrown to the ground as if struck with a blow, associated with nausea and vomiting. As the condition continues the character of the individual changes, becoming morose, irritable, and suspicious. Not all cases of Meniere's disease become permanent, but it may occur in isolated attacks, the interval being free from all sensations.

Gastric vertigo is by far the most frequent variety. Persons subject to vertigo of this kind live in constant dread of cerebral disease, which frequently results in true melancholia. The vertiginous sensations usually occur during the course of well-marked and long-standing stomach and intestinal disorders, such as pain or oppression after meals, nausea, pyrosis, heartburn, frequent eructations and constipation or rarely diarrhea. The abdomen is often distended with flatus. Great pain in the nucha is a very frequent occurrence. The attack may be associated with either hyperaemia or anaemia of the brain. The symptoms are not constant, but recur at intervals, sometimes remote, at others very close on each other.

In nervous vertigo the vertiginous symptoms are usually associated with more or less irritability of temper, restlessness, and insomnia. The onset is sudden, after some one of the etiological factors. In megrim there are headache, nausea, and vomiting. This form of vertigo often precedes or replaces the epileptic convulsion; it also often precedes softening of the brain.

In senile vertigo the vertiginous symptoms are the result of anaemia of the brain. The attacks are developed by any exertion, often by merely assuming the erect posture. There is a swimming sensation in the head, darkness falls on the eyes, with a sensation of chilliness and prostration.

**DIAGNOSIS.** The diagnosis of the various forms of vertigo can only be determined after a close study of the history and course of attack. The existence of organic cerebral disease must always be kept in mind in solving any case.

**PROGNOSIS.** This will be influenced by the variety of the vertigo. The prognosis is favorable in ocular and gastric vertigo.

Unless the result of organic disease, the prognosis is good in nervous vertigo. In auricular vertigo the prognosis is fair, but in genuine Meniere's disease the prognosis is unfavorable, as it is also in senile vertigo.

TREATMENT. For ocular vertigo, rest for the eyes and properly adjusted glasses. See General Treatment, etc., especially of neck and spine.

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### MIGRAINE.

SYNONYMS. Megrin; hemicrania; sick headache; bilious headache; blind headache.

DEFINITION. A unilateral paroxysmal pain in the head, periodical, accompanied with nausea, often vomiting, intolerance of light and sound and incapability of mental exertion, the brain for the time being temporarily prostrated and disturbed.

CAUSES. In the majority of patients the nervous predisposition to migraine is inherited, but whether inherited or acquired, it commonly develops before the age of thirty.

Among the many exciting causes are disturbances of digestion, irritation of the ovaries or womb, worry, exacting mental labor, sexual excesses and insufficient sleep, and eye strain. The causes of many attacks, however, are wrapt in mystery.

SYMPTOMS. Attacks of migraine occur in irregular paroxysms, the intervals between being free from pain or nervous disturbance. For a day or two preceding the paroxysm, it will be ascertained, on close questioning, that there was a feeling of fatigue without apparent cause, heaviness over the eyes, with some flatulency and indigestion. The attack proper is ushered in by chilliness, nausea, often vomiting, yawning, and general muscular soreness, with intolerance of light and noises in the ears and incapability for mental exertion and pain of a sharp, shooting character, of great intensity and persistency, localized most frequently in either the frontal, temporal, or occipital regions of the left side; at the same time there is tenderness over the whole side of the head. Rarely the pain is felt on the right side, and still more rarely on both sides at the same time. The nausea and other digestive symptoms may follow the onset of the pain instead of preceding it. There is more or less disturbance of the circulation, temperature, and secretions of the affected parts. At times there is a marked contraction of the vessels, when the face is pale, the eyes shrunken, and the pupils dilated; again, the vessels may

be dilated, when the face is flushed, the conjunctivae injected and the pupils contracted. Motion, sound and light aggravate the acute suffering.

The attack may continue with more or less intensity from a few hours to two or three days, the average duration being twenty-four hours.

**DIAGNOSIS.** The symptoms are so characteristic that an error seems impossible. It may, however, be confounded with anaemic headache, hyperaemic headache, dyspeptic or bilious headache, and neuralgic or rheumatic headache. The pains of organic brain disease must be excluded.

**PROGNOSIS.** While few cases of true migraine are permanently cured, the affection is free from danger to life. In a fair number of cases the susceptibility to attacks declines as the person advances in years, it being rarely seen after fifty years. "Cases of migraine of the ophthalmic variety appear to be not rarely followed by general paralysis of the insane." (Herter.)

**TREATMENT.** See General Treatment for Brain Troubles.

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## TREATMENT FOR ALL BRAIN TROUBLES.

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Whether we consider congestion in the arachnoid or in the substance of the gray or white matter, or simply a venous congestion that produces megrim, the principles involved in the treatment are the same. To repeatedly specify the course to pursue in each particular affection would not only presume stupidity of intellect on the part of the reader, the student of "forces," who has traveled thus far with us in the application of this philosophy, but would increase the size of this volume out of proportion.

The thing to do is plainly stated in other parts of this volume—Take Off the Pressure! This is to be done in the neck, for the most part; for failure in emptying the veins causes all the troubles enumerated in the foregoing pages concerning brain trouble, from a slight headache to a cerebral abscess. To relieve the veins of engorgement means much.

### *The Manner of Treatment.*

To relieve Common Headache occupies but a moment. It is accomplished as follows: The patient sitting down, lying down, or standing up, makes no difference. The operator places the fingers of both hands on either side of the cervical spines, the



upper portion, close to the occiput, and covering the vaso-motor area, with the thumbs on the side of the neck, covering the pneumogastric nerve (in sheath of carotid artery); now press gently on the neck with the fingers, and at the same instant with the thumbs press on the nerves above mentioned. Headache ceases.

Sick headache is treated in the same way, but may require further general treatment—stretching of the neck, manipulating the muscles of the neck, stimulating the spinal accessory nerve, raising the clavicles, treating the chest, liver, stomach and bowels; in fact, for chronic headaches a general treatment is always proper to administer.

Aphasia, Every Variety.—The treatment should be general, from the upper cervix to and including every part of the body. Remember that this affection, like paralysis, is due to extravasation of blood around the terminal footlets of the motor and sympathetic nerves, separating them, incoordinating communication of forces, or intelligence, from and through sympathetic to motor, hence confusion. The rational treatment is, therefore, to unite the footlets by removing the fluids that separate them. The proper way is to open the channels of outlet, the veins, let the venous blood be returned, let the waste material flow through the lymphatics into the veins, thereby removing pressure and reinstating normal conditions. The treatment should begin, then, at the back of the neck (vaso-motor area), then spring the neck strongly as recommended in general treatment, stretch the whole spinal cord, putting one hand at the occiput, the other under the chin; pull gently until the feet are seen to move, rotate the head while extension is being made, and at the same time the head is turned press the fingers of the hand under the neck strongly against the sides of the vertebrae, just back of the mastoid process. Change hands and repeat the process. Then give general treatment.

Locomotor Ataxia.—General treatment every other day is required for months (perhaps years) in long-standing cases. The higher up the lesion, the lower the effect. The treatment is to be thorough, freeing all pressure everywhere in the body. The only way to reach these lesions is through the sympathetic nerves, reflexly; and the great trunks coming out of the skull should be especially looked after. Spinal accessory, pneumogastric and cervical ganglia on both sides of the neck and clear down the spinal column, including ganglion impar, as well as those in the sphincters of the lower outlets of the body, remembering that

sympathetic nerve filaments exercise a controlling influence all over the body, and we reach the nerve centers only through the terminal ends or footlets of nerves. To specify each particular move seems superfluous, and, should the reader feel at a loss to know what to do in a particular case or condition, by reference to illustrations and studying them, the movements necessary in each indicated case may be readily selected, or the general treatment understood. Attention is always to be directed to the parts obstructed or structure involved, and how to reach it through the nervous system or circulatory apparatus easily, for the illustrations represent all the movements for the general and special, practical application of the science in the treatment of diseases. The general treatments covering the parts affected usually suffice in any given case. Therapeutic suggestion is a valuable means, deserving special consideration.

Cerebro-Spinal Ganglia.—The reflexes are forcibly illustrated in the irritation of the clitoris, sending a thrill all over the system, and when long irritated, exercises a prostrating influence upon the whole spinal nervous system. Moderately but firmly pressed upon, produces great contractive influence upon the fundus of uterus, producing expulsive parturient pains, both for delivery of foetus and afterward for disengaging and expelling the placenta. Contraction on the ends of the sympathetic filaments in the external uterine sphincter muscle causes sickness at the stomach. Sudden jerking of cilia (a wisp of) on the mons veneris immediately arrests uterine, post-partum hemorrhage. These actions show us some effects the sympathetic nervous system produces when we know how to use it, or suggest to it what our desires are, and how to utilize forces that are not found in medicines. These are only a few of the marvelous effects derivable from this same set of tubes called nerves. If the pressure on these end filaments produces such marvelous effects, imagine a pressure on millions of these nerves along the spinal column and over the whole body, for this same system of influences predominates everywhere in our bodies, superintending and controlling them whether we wake or sleep, provided the communication continues intact. To know how to use this marvelous system correctly, gives us complete control over disease.

## ALCOHOLISM.

VARIETIES. Acute alcoholism; chronic alcoholism.

SYNONYMS. Acute variety, *temulentia*; *mania-a-potu*. Chronic variety, *delirium tremens*; *dipsomania* or *oinomania*. It would hardly be correct to consider these terms interchangeable; they are rather names applied to various conditions due to acute or chronic alcoholic poisoning.

DEFINITION. Alcoholism is the term used to designate the physical and mental phenomena induced by the use of alcohol.

*Temulentia*, meaning drunkenness; *mania-a-potu* is an acute mental derangement, occurring in those of strong neurotic tendencies; *delirium tremens* is an attack of delirium associated with tremors in persons with the numerous changes resulting from chronic alcoholism. *Delirium tremens* results in alcoholics suffering from some form of nephritis, preventing the elimination of some poison developed from the ingested alcohol. *Dipsomania* or *oinomania*, an alcoholic insanity in which an individual at longer or shorter intervals has paroxysms of alcoholic desires, between which he neither wishes nor craves alcohol.

CAUSES. Predisposing causes are influences arising from unfavorable moral, social, and personal conditions. Heredity. Exciting causes are the immoderate use of alcoholic beverages, of which there are three groups: 1. Spirits, or distilled liquors. 2. Wines, or fermented liquors; and, 3. Malt liquors.

PATHOLOGICAL ANATOMY. Acute Alcoholism.—The brain is the seat of an active hyperaemia; the mucous membrane of the stomach and duodenum is markedly injected and covered with aropy mucus slightly tinged with blood, and the gastric juice is altered in quality and quantity. The kidneys are also the seat of an active hyperaemia.

Chronic Alcoholism.—In this condition of the economy there are no organs or tissues which do not present morbid changes. The gastro-intestinal mucous membrane presents the changes of chronic catarrhal inflammation; the liver, the first organ to receive the poison after the stomach, presents the changes of congestion, cirrhosis, or fatty degeneration; the kidneys show chronic congestion, and often the changes are incident to chronic interstitial nephritis. The post-mortem results found in twenty-five cases of *delirium tremens* dying in the Philadelphia Hospital, were fourteen with the changes of interstitial nephritis, eight with chronic parenchymatous nephritis, and three with fatty kidney; all showed chronic gastric catarrh and changes in the myocar-



PLATE XLVIII.—Chin—Occipital—Neck Extension.





dium and the arteries of the heart, brain, and the aorta. The muscular structure of the heart may undergo fatty degeneration and the vessels the senile changes of the aged. The brain structure presents the changes of sclerosis in various stages, and there may be chronic meningitis and pachymeningitis with haematoma. The nerves are altered, atrophied, and hardened, and the neuroglia, vessels, and ganglion cells of the spinal cord show similar changes.

**SYMPTOMS.** Acute alcoholism, resulting from the use of a large quantity of alcoholic fluid, occurs with symptoms of mild intoxication, to drunkenness passing to acute delirium and acute coma. The condition begins with a period of exhilaration, passing to semi-delirium, and ending in an acute coma, when the breathing is stertorous, the face bloated and congested, the lips swollen and purplish, the pupils contracted, the pulse feeble and slow, the skin cold and clammy, the temperature depressed and frequently control of sphincters lost. An individual so affected is said to be "dead drunk." The cases of ordinary drunkenness do not often pass beyond the stage of exhilaration, ending in a mild coma or sleep.

**Mania-a-potu**—Or acute alcoholic delirium, is the direct result of alcoholic excess in those engaged in a sudden debauch, or who have drunk alcoholic beverages very "hard" for a comparatively short period. The individuals grow more and more excitable, lose all desire for food, are unable to sleep, become the prey of horrible hallucinations—"the horrors"—finally terminating in mania which resembles delirium tremens in all save the tremor, which is absent.

**Chronic Alcoholism.**—The condition to which this term has been given is truly a disease. It is the result of the continued use of alcoholic beverages until one or more of the morbid organic changes have occurred. These persons are markedly dyspeptic, with coated tongue, fetid breath, and early morning vomiting, straining, or retching, attended with much distress. There is a gradually developing muscular tremor, progressing to the ataxic gait, and insomnia. The face may either become pallid, flabby, and bloated, with an imbecile expression, or swollen, rough, and dusky, with great bladders under the eyes, with yellow injected conjunctivae. There are headache, vertigo, and attacks of hallucinations; the memory grows weaker, the judgment less accurate, the moral sense blunted, and the will power weak and erratic. These and many other symptoms add to the distress of

the individual, which he attempts to overcome by the use of more and more of the poison.

**Delirium Tremens.**—In the majority of instances delirium results from a prolonged debauch, in an old drinker. It begins by an increased tremor, insomnia, irritable, excitable manner, followed by the characteristic hallucinations and illusions, during which snakes and all forms of repulsive reptiles are seen, causing the most intense horror and abject fear. There also occur illusions of smell and hearing. This marked excitement is followed by great depression, the skin is cold and clammy, the pulse feeble, the muscular system weak, the mind in a condition of coma-vigil, and a febrile condition typhoid in character develops. Uraemic symptoms soon develop, the temperature suddenly bounding to 103, to 104 or 105 degrees F., with albumen and casts. The ordinary duration of an attack of delirium tremens is about two weeks in those recovering, although death may occur at any time from cardiac failure, uraemia, or alcoholic pneumonia. Convalescence dates from the beginning of refreshing sleep, the patient awaking with a clear mind and desire for food. Should the delirium subside, but the patient continue to mutter and pick at the bed-clothing, the tongue become dry and cracked, and the regurgitation of dark brownish and bilious matter occur, the condition is critical and an early fatal termination may be expected.

**Dipsomania or Oinomania** is the inherited or acquired mental condition which craves the drinking of intoxicating liquors. This is a true mental disease. It manifests itself in periodical attacks of excessive indulgence in alcoholic drinking, or this symptom of this sad disease may be replaced by other irresistible desires of an impulsive kind, such as lead to the commission and repetition of various crimes, the gratification of other depraved appetites, robbery, or even homicide. Imbecility and dementia frequently result.

The paroxysms at first occur at long intervals, but gradually the intervals become shorter and shorter until the individual entirely surrenders himself to alcoholic and other excesses.

**DIAGNOSIS.** Profound drunkenness or alcoholic coma may and often is confounded with apoplectic and uraemic coma. Von Wedekind suggests the following method for diagnosing drunkenness: "By simply pressing on the supraorbital notches with a steadily increasing force you may, with certainty of success, bring an unconscious alcoholic to his senses, and thus differentiate between alcoholic and other comas." The symptoms of chronic

alcoholism often bear a close resemblance to the following maladies: general paralysis, disseminated sclerosis, paralysis agitans, locomotor ataxia, cerebral and spinal softening, epilepsy, dementia chronica, and nervous dyspepsia.

In individuals whose habits are secret the question of diagnosis is attended with considerable difficulty. Anstie lays much stress upon the importance of the following four points, diagnostic of chronic alcoholism: insomnia, morning vomiting, muscular tremor, and causeless mental restlessness.

**PROGNOSIS.** In acute alcoholism the prognosis is good if the patient is manageable. In chronic alcoholism the organic changes, the direct result of the alcoholic habit, tend to shorten life by the production of fatty heart, Bright's disease, insanity, impotence, epilepsy, melancholia, and organic brain diseases. The danger in delirium tremens is heart failure or deepening coma. The association of chronic nephritis with delirium tremens, perhaps its cause, must always be taken into account in determining a prognosis. Acute lobar pneumonia is a very fatal complication of all forms of alcoholism.

#### THE TREATMENT.

The treatment for confirmed alcoholism is necessarily a variety treatment, to meet varied indications. Like for the poisonous effects of opium, the patient should be moved around continuously, or the manipulations made with a view to keep up a rapid and uninterrupted circulation of the blood. Strong divulsion of the sphincters sobers the victim at once, and the operator will immortalize himself in the estimation of some to do so, but there is either an inborn craving, or a cultivated one, that has a deeper significance than occasional habit of inebriety. Habit, like an armed foe, has transformed every tissue into servitude to the destroyer, and the will power of the victim must be turned in the opposite direction to make him a sober man. The diseased morbidity of his stomach should be intelligently looked after, rested, treated through the cerebro-spinal nervous system until all right. Non-stimulating diet and no breakfast enjoined. Complete hypnotism and suggestion cures a larger percentage than anything else. Use it. To sober up a person drunken, press on the supraorbital nerves.



## HEAT STROKE.

SYNONYMS. Insolation; sunstroke; thermic fever; coup-de-soliel; heat exhaustion.

DEFINITION. A depression of the vital powers; the result of exposure to excessive heat. The condition manifests itself as acute meningitis (rare), heat exhaustion (common), and as true sunstroke.

CAUSES. Exposure to the influence of excessive heat, either to the direct rays of the sun or artificial heat in confined quarters, or diffused atmospheric heat without proper ventilation. Among the predisposing causes, which act by lessening the power of the system to resist the heat. are great bodily fatigue, overcrowding, and intemperance.

PATHOLOGICAL ANATOMY. The action of the heat upon the system is so sudden, and the malady so rapid in its course, that structural changes have not developed. The left ventricle is firmly contracted (Wood). The right heart and vessels are gorged with dark fluid blood. All the tissues and organs of the body are in a state of great venous congestion. The blood is dark, thin, and either but feebly alkaline or decidedly acid, and its power of coagulability is destroyed. The post-mortem rigidity is early and marked.

SYMPTOMS. Depending upon the variety.

Acute meningitis the result of exposure to heat is similar to that due to other causes.

Heat exhaustion develops with a rapid feeling of weakness and prostration, the surface cool, the face pale, the voice weak, the pulse rapid and feeble, the respiration increased, the vision growing dim and indistinct, noises develop in the ears, the individual overcome, becoming partially, or completely unconscious. with perhaps convulsions and tremors, and shrunken features.

Sunstroke.—The symptoms. developing suddenly, with or without prodromata, are, insensibility, with or without delirium, or convulsions, or paralysis, the surface flushed and hot, the conjunctivae injected, the breathing either rapid and shallow or labored and stertorous, the pulse quick and either bounding or weak, and the temperature in the axilla ranging from 105 degrees to 108 degrees, to 110 degrees, with suppression of all glandular action. Death occurring, the result of asphyxia, or from a slow failure of respiration and cardiac action.

DIAGNOSIS. It is of great importance, therapeutically, to distinguish at once between attacks of sunstroke and heat exhaus-

tion. Cases of sunstroke are to be differentiated from cerebral hemorrhage and alcoholic insensibility, for which purpose the clinical thermometer is indispensable.

PROGNOSIS. Attacks of heat exhaustion, if properly and promptly treated, favorable. The prognosis of sunstroke or heat fever is unfavorable in the majority of cases, death resulting in from half an hour to several hours. Unfavorable indications are, increased temperature, cardiac failure, convulsions, absent reflexes, followed by complete muscular relaxations. Favorable indications are, decline in surface heat and axillary or rectal temperature, stronger pulse, increased depth of respirations, restored reflexes, and return of consciousness.

#### THE TREATMENT.

The indications are apparent: Restore capillary circulation as soon as possible. The bivalve should be brought into requisition if possible, otherwise use the digits to divulse; then regulate the action of the circulation by vaso-motor stimulation, then follow up the treatment of spine, strongly extending the arms as the spine is treated. Use all the measures to establish and continue circulation, especially in the body. To draw blood from the head use the hemaspasia process—cording one of the lower limbs—and hold the venous blood there for half an hour, then remove the cord, and place it on other limb, same way and time. Induce vomiting of contents of stomach, if full. Use strong, rapid vibratory movements along the spine and over the abdomen, moving the muscular tissue profoundly for several moments. The neck muscles should be thoroughly manipulated, and the clavicles raised, so as to permit the venous blood to return from the brain. These measures will be found successful, except caused by alcoholism—and sometimes then. Remove all obstacles to deep inspiration and be sure to place the patient in airy quarters. Oxygen is essential in such cases. Enjoin deep breathing, artificial if necessary, until recuperation.

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#### ACUTE HYDROCEPHALUS.

SYNONYMS. Acquired hydrocephalus; serous apoplexy.

DEFINITION. Strictly speaking, hydrocephalus signifies water in the brain; but it is here restricted to the presence of a serous fluid in the arachnoid spaces, in the pia mater, in the ventricles, and in the brain substance (œdema); characterized by the

more or less sudden development of cerebral excitation, followed by depression and usually death.

**CAUSES.** Most common between the ages of one and five, although it may occur at any age. "The predominance of the nervous system in the bodily conformation" is a strong predisposing cause. Among the exciting causes are unfavorable hygienic conditions, dentition, eruptive fevers, blows on the head, mechanical causes preventing the return of the blood from the venae Galeni and the right sinus, compression of the jugular vein, diseases of the right heart, and Bright's disease.

**PATHOLOGICAL ANATOMY.** The effusion may be limited to the ventricles, although there is usually considerable distention of the subarachnoid spaces and œdema of the pia mater and neighboring portions of the brain, whence results more or less softening, especially around the ventricles. The choroid plexus is hyperaemic, and may be the seat of minute extravasations.

**SYMPTOMS.** There are three varieties of acute hydrocephalus with characteristic symptoms, to-wit: comatose, convulsive, and the ordinary.

**Comatose.**—Known also as "serous apoplexy," begins abruptly with the phenomena of apoplexy, the result of the sudden effusion. The pressure is usually so great on the medulla oblongata that it ceases to functionate, death resulting in a few hours, rarely lasting several days.

**Convulsive.**—The result of Bright's disease or a general dropsy, is ushered in with headache, nausea, and vomiting, followed in a day or two with convulsions, passing into coma, which usually terminates fatally, although rarely a remission may precede death for a day or two.

**Ordinary.**—The most common in children, begins with feverishness, headache, vertigo, photophobia, restlessness, nocturnal delirium, insomnia, twitching, and spasmodic contractions of the muscles and great hyperaesthesia of the skin. Such symptoms continue for several days, when convulsions occur, followed by death, or a continuance of the symptoms, followed by rigidity, stupor, and death.

#### THE TREATMENT.

In referring to causes, it will be seen that the nervous system is interfered with, or a predominance is in that direction. This will generally be found to be reflexly. Something will be found wrong with the genitals. Referring to the *Orificial Surgery Journal*, I find that cases have been successfully treated by the

performance of circumcision. That relieves the reflex irritation from that source, especially where phymosis exists. This should be corrected in cases demanded, and no one is excusable for neglect in this regard. The neck muscles are most generally involved also, and contracture of the muscular fibers closes the clavicles down, preventing venous return circulation, hence accumulation in the brain. Clear out the scavengers (the veins), then look for favorable results—not till then. The mild and persistent general treatment every day or two will be rewarded by favorable results in a larger per cent. of cases generally, than from other treatment. The spinal system of nerves is to be kept in normal condition, the renal splanchnic receiving special attention each treatment. The indications properly heeded, promise good results if treatment is properly applied. These directions apply to the chronic congenital as well. Treatment should be applied every other day, at least.

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### CONGENITAL HYDROCEPHALUS.

**DEFINITION.** An excessive accumulation of the cerebrospinal fluid—a cerebral dropsy—in the ventricles—internal hydrocephalus; or in the meshes of the pia mater—external hydrocephalus, or in both—mixed hydrocephalus; characterized by enlargement of the head and more or less pronounced nervous phenomena. A disease of infants, or very young children.

**CAUSES.** Imperfect or arrested development of the brain or its membranes. Occurs in the offspring of tubercular, scrofulous, or syphilitic parents. Inflammatory changes in the ventricles and ependyma.

**PATHOLOGICAL ANATOMY.** Enlargement of the head is the chief external pathological condition, although there is no constant ratio between the size of the head and the amount of fluid, the quantity varying from an ounce to a pint or more. The liquid is transparent, of a straw color, containing a small amount of albumen and chloride of sodium. If the quantity of fluid be small the ventricles are simply distended, if the amount be large the optic thalami and corpus striatum are depressed and flattened, the roof of the ventricles thinned, and the foramen of Monro is greatly enlarged. The enlargement of the head may occur before birth and impede or prevent natural delivery, or the head may be normal at birth and increase afterward. As enlargement



progresses the bones are so thinned as to be translucent, the fontanelles and sutures are widened, the lateral portions of the cranium project, the forehead bulges out over the eyes, and the orbital plates are depressed, forcing the eyes outward and downward, producing a variety of exophthalmos; the head has an irregular, triangular shape, the base of the triangle being the top of the head. The scalp being stretched by the pressure within, becomes tense and thin, and but scantily covered with hair, the veins which ramify in it are unusually prominent and large, and the entire head is elastic on pressure, from the amount of liquid beneath.

Hilton, in "Rest and Pain," says: "In almost every case of internal hydrocephalus which I have examined after death I found that this cerebro-spinal opening (between the fourth ventricle and the spinal canal) was so completely closed that no cerebro-spinal fluid could escape from the interior of the brain; and, as the fluid was being constantly secreted, it necessarily accumulated there, and to my mind the occlusion formed the essential pathological element of internal hydrocephalus."

**SYMPTOMS.** The increased size of the head, with the emaciated condition of the child, who seemingly eats well, is what first attracts the attention. The head appears too heavy, the eyes are prominent and have a downward direction, the face is devoid of expression, old and wrinkled, the voice feeble; the mental development is not in keeping with the age. When the period for standing or walking arrives the power is found wanting. The further history is but a continuation and exaggeration of this, until convulsions occur, which sooner or later terminate fatally.

The course of congenital hydrocephalus is usually slow, but progressively worse. The majority terminate within the first year; cases are recorded, however, of ten and fifteen years' duration.

**DIAGNOSIS.** In rachitis the volume of the head is increased, due, in part at least, to a deposit of calcareous matter on the exterior of the cranial bones. Rachitis may be mistaken for hydrocephalus in cases in which the amount of liquid is small. The differential diagnosis is based on the shape of the head, round in rachitis, square or triangular or with prominences in hydrocephalus; with the persistent downward direction of the eyes and the elasticity of the head on pressure.

**PROGNOSIS.** Unfavorable. Arrest of progress and even cures have been reported. Spontaneous cures are reported fol-



PLATE XLIX.—Vibratory Movements, Neck and Back.



lowing the accidental discharge of the fluid. But such reports are exceptional.

TREATMENT. See treatment for Acute Hydrocephalus.

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## DISEASES OF THE SPINAL CORD.

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### SPINAL HYPERÆMIA.

SYNONYMS. Spinal congestion; plethora spinalis.

DEFINITION. An abnormal fullness of the vessels of the meninges and cord; active when an arterial hyperaemia; passive, when a venous hyperaemia; characterized by pain in the back, with more or less pronounced disorders of sensation and locomotion.

CAUSES. Cold and exposure; arrested menses; arrest of habitual hemorrhoidal discharge; malaria; protracted erect posture; injuries to the back; certain spinal poisons, as strychnina, picrotoxinum, and alcoholic excesses.

PATHOLOGICAL ANATOMY. Active.—The post-mortem appearances are congestion of the meninges and cord, the same vessels supplying both, with numerous points of extravasation, due to the rupture of capillary vessels. The spinal fluid is increased in amount. Passive.—A general bluish discoloration, owing to the abnormal fullness of the large anastomising vessels; the spinal fluid somewhat increased.

SYMPTOMS. Active.—Dull pain in the dorsal or lumbar region, shooting into the hips and thighs, persistent and increased by pressure; tenderness on motion; tingling sensations in the limbs and feet, and sometimes in the hands and arms; a feeling of constriction about the abdomen is often present, with rigidity of the abdominal muscles. Increased reflexes, with disorders of motility, and when the patient is in the recumbent position, jerking of the limbs. On attempting to walk it is accomplished with difficulty, from an incomplete loss of power. If the upper part of the cord be affected, dyspnoea and palpitation occur. There often occur painful priapism and frequent nocturnal emissions.

The above symptoms may be followed by a more or less



pronounced temporary depression, the sensation diminished, and the lower limbs benumbed and heavy, the movements weak.

The electro-contractility is preserved, and in many cases even increased or exaggerated.

**DURATION.** From a few hours to several days; if longer, myelitis may result.

**DIAGNOSIS** Anaemia causes more or less spinal irritability and tenderness; but the history, pallor, and general weakness, unassociated with defects of motility or sensibility, will prevent error. Spinal meningeal hemorrhage is more sudden in its onset, its violence, and its range of symptoms. Myelitis and spinal meningitis have symptoms in common with spinal congestion, which will be pointed out when discussing those affections.

**PROGNOSIS.** Favorable, recovery occurring in three or four days. If the symptoms show a tendency to linger, myelitis, more or less pronounced, will ensue.

**TREATMENT.** See Spinal Meningitis.

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### PACHYMEINGITIS SPINALIS.

**SYNONYMS.** Pachymeningitis spinalis interna; hypertrophic pachymeningitis; pseudo-membranous pachymeningitis.

**DEFINITION.** An inflammation of the inner surface of the spinal dura mater; characterized by violent pains in the head, back, shoulder, and arms, followed by contractures and paralyses of the upper extremities.

**CAUSES.** Exposure to cold and damp; alcoholism; syphilis; gout; injuries.

**PATHOLOGICAL ANATOMY.** Hypertrophic pachymeningitis is characterized by an exudation upon the inner surface of the dura mater, which gradually solidifies into a layer of compact connective tissue, which presses upon the spinal cord and nerves, producing a myelitis and an atrophic neuritis, resulting in muscular atrophy. The most frequent seat of this form is the cervical hypertrophic pachymeningitis.

In the pseudo-membranous form a membranous exudation also occurs, in which large numbers of blood vessels develop and rupture, the hemorrhagic extravasation forming a cyst—haematoma—which causes pressure on the cord and nerves.

**SYMPTOMS.** The onset is slow and gradual, with irregular chills and feverishness, violent pains, and stiffness in the head, neck, shoulders, and arms, continuous but subject to exacerba-

tions, and associated with a painful constriction of the upper thorax. Numbness and prickling occur in the arms, more marked in one than the other. Rarely nausea and vomiting occur. These symptoms may continue off and on for several months, the muscles of the painful parts atrophying, followed by spasmodic contraction, particularly of the hands and wrists, followed later by paralysis.

The paralytic stage develops gradually, with weakness in the arms, associated with contractures and rigidity. The pain continues with anaesthesia, hyperaesthesia, and trophic changes. Later paraplegia with rigidity, exaggerated reflexes, and spinal epilepsy develop.

The development of tuberculosis and nephritis during the progress of chronic cerebral and spinal diseases, which are the immediate cause of death, is a clinical observation.

The electro-tractility is lost.

**PROGNOSIS.** If early recognized and promptly treated, the hypertrophic form may be improved. Generally, however, the prognosis is unfavorable.

**TREATMENT.** See Spinal Meningitis.

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## SPINAL MENINGITIS.

**SYNONYM.** Leptomeningitis spinalis.

**DEFINITION.** Inflammation of the arachnoid and pia mater membranes of the spinal cord, either acute, subacute, or chronic; characterized by pain in the back, rigidity of the muscles, disorders of motility and sensibility. It may be acute or chronic.

**CAUSES.** The disease is rare, and is always due to an infection from tubercle, syphilis, typhoid fever, or septicaemia, or the result of a traumatism.

**PATHOLOGICAL ANATOMY.** Acute.—Hyperaemia of the membranes, with swelling of the tissues, the result of serous infiltration, followed by purulent and fibrinous exudations. The roots of the spinal nerves are covered with exudation, and are swollen and soft. The cord proper is more or less congested and oedematous.

**Chronic.**—Adhesion of the membranes, with more or less accumulation of fluid, resulting in atrophic degeneration of the cord from pressure. If the disease is secondary to tubercle, these

granulations are seen distributed over the pia, arachnoid, and inner surface of the dura.

**SYMPTOMS.** There are two stages, the first, the stage of irritation, the second, the stage of paralysis of motion and sensation, with atrophy. Although an inflammatory affection, yet its onset is usually subacute, the febrile reaction being moderate, with intense boring pain in the back, aggravated by motion, rigidity of the spine, and a sense of constriction around the body—"the girdle." Spasmodic contractions of the muscles innervated by the nerves originating at the seat of the lesion, with inability to straighten the limbs. If the lower part of the spinal membranes is the seat, there occur constipation and retention of urine; if upper part, dysphagia, dyspnoea, and feeble heart. The muscular contractions are excited or increased by motion, but uninfluenced by pressure. Reflex movements are not abolished. The rigidity and spasmodic contraction of the muscles are followed by paralysis, more or less complete, death following from paralysis of the muscles of respiration. If the inflammation extend to the medulla, the above symptoms are associated with disorders of speech, vomiting, and delirium.

Electro-contractility lessened or absent, both as to motility and sensibility, in the affected parts.

Chronic form succeeds to the acute or originates spontaneously, and presents the same form and order of symptoms—excitation or irritation, and depression or paralysis.

**DIAGNOSIS.** The points of importance are deep, boring pain in the back, aggravated by motion but not by pressure, with spasmodic contraction of the muscles, followed by paralysis.

Myelitis slight or absence of pain with earlier and more complete paralysis.

Tetanus may be confounded with spinal meningitis. The points of distinction are: in the former occur early trismus with rhythmical spasms excited by irritation of the skin, whereas irritation of the skin does not in spinal meningitis produce muscular contractions, but movement of the limbs does do so; progressively increasing, and not associated with fever; usually a clear history of an injury.

**PROGNOSIS.** Generally unfavorable. Death is either sudden, from paralysis of respiration and of the heart, or gradual, the result of exhaustion. Critical discharges, such as profuse perspiration, urinary flow, or epistaxis occur, and are followed

by rapid recovery. Cases recovering may have more or less pronounced partial or complete paralysis.

#### THE TREATMENT.

The treatment for spinal hyperaemia, pachymeningitis and spinal meningitis is modified according to circumstances, and applies to all. The important thing to be done is to take off the pressure from the veins. To do this, results in a removal of the difficulty—venous closure. The whole man demands our attention, hence general treatment, using the various manipulations recommended to restore normal circulation, by establishing capillary circulation, and removal of pressure from the terminal nerve filaments. The first attention is to be directed to the vaso-motor nervous system, and then the spine, all the way down. The neck should be duly stretched, the body extended, the spine stimulated, chest expanded, intercostals relieved of venous congestion, lower limbs flexed, rotated, extended, and every manipulation applied that is essential to the promotion of freedom of the circulation of the fluids in veins and lymphatics. This takes off the pressure from the nerves, reaction ensues at once, the difficulty is arrested, and health restored. Treatments should be repeated daily or oftener, or at longer intervals, according to indications. Promoting a free circulation all over the body is the thing to do. Use the means indicated.

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#### ACUTE MYELITIS.

**SYNONYMS.** Acute or general diffuse myelitis; transverse myelitis; softening of the cord.

**DEFINITION.** An inflammation affecting the substance of the spinal cord, which may be limited to the gray or white matter, and involve the whole or isolated portions of the cord. When the gray matter alone is inflamed, it is termed central myelitis; when the white matter and the meninges, it is termed cortical myelitis; it may be ascending, descending, or transverse in its extension. The disease is characterized by more or less sudden and complete loss of motion and sensation.

**CAUSES.** Following spinal meningitis; exposure to cold and damp; injuries to the vertebrae; prolonged functional activity of the cord; typhus fever; rheumatism; syphilis; puerperal fever, or,



during the course of the exanthemata, arsenical or mercurial poisoning.

**PATHOLOGICAL ANATOMY.** Intense hyperaemia of the substance of the cord, with extravasations, giving the tissues a reddish-brown or chocolate tint, and also serous transudations, resulting in softening of the structure of the cord, the color changing to yellow and white, the nerve elements undergoing fatty degeneration, presenting the appearance and consistency of cream. The membranes also undergo more or less change.

**SYMPTOMS.** The severity of the symptoms depends upon the extent and location of the inflammation. The onset is usually sudden, with a chill, fever, 103 degrees, frequent pulse, with alterations in sensibility and motility, to-wit: pain in the back, aggravated by touch and by heat and cold, with sensations of formication ("pins and needles"), the limb feeling as if asleep, or else complete anaesthesia, associated with severe neuralgic pains.

The distinction between anaesthesia (insensibility to touch), and analgesia (insensibility to pain) must be clearly determined.

A sensation of constriction around the body and limbs, as if encircled by a tight cord, "the girdle pains"; rapidly developing paraplegia, complete in a few hours, with involuntary discharges. The reflex functions are usually abolished, as seen by attempting to cause movement of the limbs by tickling the feet or by striking the patella tendon; rarely are they diminished, very rarely exaggerated. The temperature of the affected limbs is lowered three or four degrees. Sloughs and bed-sores and muscular atrophy result if the anterior cornua—the trophic centers—are affected.

The above symptoms of loss of motion and sensibility with rectal and vesical paralysis, are associated with more or less pronounced vomiting, hepatic disorders, irregularity of the heart, dyspnoea, dysphagia, apnoea, and painful priapisms. The urine is markedly alkaline in reaction, finally developing cystitis. Among the late manifestations are shooting pains and spasmodic twitching or contractions of one or all of the muscles of the paralyzed parts.

The electro-contractility is abolished in the paralyzed parts.

**DIAGNOSIS.** Acute spinal meningitis is distinguished from acute myelitis by severe pains, increased by pressure, with muscular contractions increased by motion, followed by paralysis much less profound than the paraplegia of myelitis; in spinal

meningitis there exists cutaneous and muscular hyperaesthesia, which is absent in myelitis.

Congestion of the spinal cord is characterized by the mild character and short duration of all the symptoms.

Hemorrhage in the spinal canal is abrupt with irritative symptoms, slight paralysis, preserved reflexes and electro-tractility.

The principal diagnostic points of acute myelitis are the "girdle" around the limbs or body, rapid and complete paraplegia, loss of sensation, lowered temperature in the affected parts, early and persistent sloughing (bed-sores), and alkaline urine or cystitis.

Hysterical paraplegia shows no trophic changes, no altered reflexes, slight atrophy, irregular anaesthesia, and the presence of the stigmata of hysteria.

Lithaemic paraesthesia, tingling and numbness of fingers and toes, might lead to error if the cerebral symptoms of lithaemia are overlooked.

The diagnosis of the location of the lesion is made by a study of the height of the anaesthesia, the skin reflexes, and the distribution and extent of the paralysis.

PROGNOSIS. Varies according to the location of the lesion and completeness of the symptoms.

If the paralysis is of the ascending variety, death occurs within a few days, from paralysis of the muscles of respiration.

If the trophic centers are affected, there occur bed-sores, intense pyelo-nephritis and cystitis and changes in the joints; death from exhaustion in several weeks.

Central myelitis, or inflammation of the gray matter, is rapid in its progress, death occurring in a week or two.

The morbid process may be arrested and the general health restored, but some spinal symptoms will persist.

#### THE TREATMENT.

When the effects are considered, the cause is easily imagined—venous congestion. This congestion is due to the contraction of the muscular fibers, drawing fascia, perhaps capsular ligamentous tissue, taut across the nerves leading to the spinal cord, lessening or abridging or destroying nervous communication to the cord; hence paralysis of the connective tissue around and of the walls of the veins, hence extravasation of blood, hence pressure. The very nature of the results demonstrates this fact.

The results of the application of Osteopathic principles prove the correctness of this assertion. The extensiveness of the lesion at the various sections of the spinal ganglia is seen in effects on certain muscles supplied by the various nerves from it—supplying said muscles. The knowledge of the origin, distribution, and places of exit from the spinous foramina becomes a matter of much moment in the correct application of the principles of this science, manipulatory at least. It will be a stunner to the general practitioner to contemplate the probabilities of a possible benefit through the application of these principles to such a terrible state of affairs as we find in such cases! The applications prove alike successful in all the forms of paralysis known to exist. The more recent, the more potent for relief. We would state here: That venous obstruction relieved, myelitis ceases. The treatment given by the ordinary medical man sustains about as much relationship to cause and effect as tying a vein to stop arterial hemorrhage. It will invariably be found that failure to return the blood from the head through the internal jugular veins is the direct cause of the congestion that produces the pressure that results in the lesion—the extravasation—pressing upon the origin of nerves that supply certain muscles. Remember that.

The treatment must be directed to the place of obstruction—in the neck veins first. Then the pressure must be removed all the way along the lines of the various nerves from origin to termination. This takes off the pressure, lifts the weight from the venous walls, permits return circulation to the heart, lungs, where oxygenation takes place, renewal of the vital forces and a normal arterial supply. The treatment, then, should begin at the occiput. It should be continued all the way down the spinal column, every manipulation recommended in general treatment for the whole system used, and special regard to the proper inhalation of pure air, as well as due regard to the restfulness of the digestive tract, avoiding overcrowding the stomach. Rest is especially enjoined until amelioration ensues. Treatments applied systematically and intelligently at intervals of from a few hours to two days will be rewarded, usually, with perfect success.

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### INFANTILE SPINAL PARALYSIS.

SYNONYMS. Myelitis of the anterior horns; poliomyelitis anterior acuta; essential paralysis of children; atrophic paralysis of children.



PLATE L.—Showing Manipulations of Neck and Throat.





**DEFINITION.** A rapidly developed inflammation of the anterior horns of the gray matter of the cord, occurring suddenly in children, at times in adults—acute spinal paralysis of adults—characterized by mild fever, muscular tremors and twitchings, and paralysis of groups of muscles.

**CAUSES.** Essentially a disease of early life—the second month to the third or fourth year. The fact of its having occurred in adults must be borne in mind. Cold and damp; dentition (?); injuries to the spine; developed during convalescence from the acute exanthemata.

**PATHOLOGICAL ANATOMY.** The early changes are: medullary hyperaemia, vascular exudation and inflammatory softening, although the naked eye may not recognize any changes. Microscopical examination reveals inflammatory softening of the anterior horns of the gray matter. Among other constant lesions are atrophic degeneration of the multipolar ganglion cells and of the anterior nerve roots.

The changes noted as occurring in the cord are usually limited to the dorso-lumbar and cervical enlargements. As a direct result of the changes in the trophic centers and the nerve degeneration of the muscular fibers supplied, there ensue changes in the bones and joints, leading to great deformities.

**SYMPTOMS.** The onset of the affection varies; it may be acute, subacute, or chronic; it is usually sudden, with an attack of mild fever of a remittent type, of a few days' duration, on recovery from which it is noticed that the child is paralyzed. Rarely the paralysis may be preceded by convulsions. The paralysis may affect both arms and both legs, the legs alone, or only one of the four extremities; it may, but very rarely, be a hemiplegia. As a rule, however, the leg suffers more frequently than the arm; in paralysis of the leg the muscles below the knee suffer more severely than those above. The bladder and rectum are not affected, or if so, only temporarily, nor can anaesthesia or numbness be detected. The temperature of the paralyzed limb is low and the appearance cyanosed. After a few days there is a slight improvement in the paralyzed parts, although the muscles show a rapid wasting, which is progressive until all muscular tissue is gone.

The reflex movements are impaired or abolished.

The electro-contractility by the faradic current is abolished in the paralyzed parts. With the galvanic or constant current the "reactions of degeneration" are developed. To fully under-

stand the meaning of this term a knowledge of the normal electrical reactions is necessary.

The normal formulæ for the production of muscular contraction in the physiological state are as follows, the strength of the current being barely capable of causing fair contractions: First.—The most effective contractions are produced by the cathode (negative) pole on closing the circuit. Second.—The second most effective are produced by the anode (positive) pole on closing the circuit. Third.—The next most effective is by the anode pole on opening the circuit. Fourth.—Cathode pole contractions on opening circuit are rarely seen in the physiological state.

The "reactions of degeneration" are shown by any reversal of the regular formulæ, to-wit: if the anodal closure shows stronger contractions than cathodal closure; still greater degeneration is shown if the anodal opening contractions are stronger than either of the above; and most complete degeneration is shown by the complete reversal of the normal formulæ as shown by distinct cathodal opening contractions.

SEQUELÆ. Amongst the deformities resulting from the paralysis are the different forms of talipes. Talipes Equinas.—The result of paralysis of the antero-external muscular group of the leg. Equino-Varus.—The result of paralysis of the antero-external muscular group of the leg, together with the adductors of the foot. Talipes Calcaneus.—The result of paralysis of the muscles of the calf of the leg. Talipes Cavus.—"Pes cavus"—characterized by the hollowing of the sole of the foot, with prominence of the instep, the result of paralysis of the calf muscles with contraction of the long flexor of the toe or the long peroneus—the foot flexors.

DIAGNOSIS. The recognition of acute poliomyelitis is not always possible at the onset or during its early days, as localized paralyzes are difficult of detection in children, but immobility of one leg or arm in children with febrile symptoms or following convulsions is always an indication of poliomyelitis. After the initial stage has passed, the presence of paralysis, wasting, presence of R. D. (reactions of degeneration), loss of reflexes, and the absence of anaesthesia, render the diagnosis very easy.

Hemiplegia from acute cerebral affections in children can be distinguished from infantile paralysis by the disorders of intelligence and the special senses, and the perseverance of the normal electro-contractility.

Paralysis of myelitis occurs in older persons, and is associated with disturbances of the genito-urinary organs and bed-sores.

Pseudo-muscular hypertrophy, with paralysis, begins gradually, becoming progressively worse with increase in the size of the limbs.

PROGNOSIS. More or less paralysis with muscular wasting always results, although there is no doubt that the extent can be greatly lessened by early recognition and treatment.

#### THE TREATMENT.

The same general principles apply here as in every case of paralysis. Take off and keep off the pressure. Restore normal blood supply and recovery ensues. There are more cases cured by the application of these principles than by any other means ever devised. The freedom of the flow of all of the fluids to and from the heart, means much—it means health. Follow the special indications as well as general. It requires time and patience in the chronic form of these affections. Persist with confident assurance of final relief. Marvelous consequences follow these treatments.

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### CHRONIC PROGRESSIVE BULBAR PARALYSIS.

SYNONYMS. Glosso-labio-laryngeal paralysis; bulbar paralysis.

DEFINITION. A chronic degenerative affection of certain nuclei of the medulla oblongata; characterized by a slowly progressive bilateral paralysis of the tongue, lips, palate, pharynx, and larynx, with atrophy of the tongue and lips.

CAUSES. Obscure. Rare before the fortieth year. Among many others may be named cold, rheumatism, gout, syphilis, and injuries about the neck.

PATHOLOGICAL ANATOMY. "Degenerative atrophy of the gray nuclei in the floor of the fourth ventricle; with atrophy and gray discoloration of the nerve roots from the medulla, especially of the facial and hypoglossal nerves." "Atrophy and disappearance of the motor ganglion cells is always to be noted. It may be the sole lesion."

"The nerves going to the muscles exhibit sclerosis of the neurilemma, and the degenerative atrophy is found in the nerve roots coming from the bulb."



**SYMPTOMS.** The disease begins insidiously. There is first noticed some difficulty in articulation, from want of precision in movements of the tongue, particularly in the use of the lingual consonants, *l*, *n*, *r*, and *t*, which increases until that organ is completely paralyzed. The paralysis gradually invades the soft palate and pharyngeal muscles, causing difficulty in deglutition, of the orbicularis oris, preventing closure of the lips, of the laryngeal muscles interfering with articulation. With the increasing loss of power in the tongue and lips is also a gradual atrophy of these muscles. When the disease is fully developed the condition of the patient is most pitiable indeed; articulation is impaired or impossible, deglutition interfered with, the lips remaining apart allowing the saliva to dribble from the mouth, and liquids to return through the nose if attempts are made to swallow them. As the malady progresses, the pneumogastric nucleus becomes involved, resulting in loss of voice, difficulty of respiration, and cardiac irregularity. The general health gradually suffers from insufficient nutrition and imperfect respiration, although the mind is clear until the end. The "reactions of degeneration" are present.

Besides the chronic bulbar paralysis, there are two acute forms which give the same symptoms as the chronic cases, only they develop suddenly, one, the result of hemorrhage into the medulla, which at the onset has vertigo, vomiting, loss of power in the limbs, and slight sensory disturbances, all of which disappear, leaving the glosso-labio-laryngeal paralysis; the second form comes suddenly, with fever, vomiting, and loss of power in the limbs, soon disappearing, leaving the characteristic bulbar symptoms; this variety is inflammatory and closely allied to acute poliomyelitis.

**DIAGNOSIS.** It can hardly be confounded with any other malady.

**PROGNOSIS.** Unfavorable. The duration is from one to five years.

#### THE TREATMENT.

This, like many other affections of the nervous system, is traceable to muscular contracture in the neck. Long-continued contractions of the fibers of the trapezius, splenius capitis, the levator anguli scapulae, and of the scaleni, mitigate the action of the terminal sympathetic nerve influence, cut off communication with the motor, and eventually produce paralysis. These contractures interfere also (and have perhaps for years) with the

venous circulation, squeezing down on the recurrent nerve filaments, as well as the spinal accessory and the glosso-pharyngeal nerves; hence paralysis of the tongue. That the other muscles (those in front of the neck) are implicated there is no doubt, when we consider that the venous blood is prevented from returning through the internal jugulars thereby, and thus press upon the base and posterior part of the brain. The release from contracture of all of the muscles of the neck is essential to the cure of the condition under consideration. The pneumogastric and the facial nerves need attention in that they affect respiration and the muscles of the face. The extension of the neck should be carefully done, the rotary movement as well; then all the muscles profoundly manipulated and vibrated on all sides of the neck, reaching high up under the chin and angles of the jaws, in front of the ears, on the cheeks, the sides of the nose, divulsing the nares as well. Continue treatments twenty or thirty minutes, and as often as every other day. General treatment.

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### PROGRESSIVE MUSCULAR ATROPHY.

**SYNONYMS.** Wasting palsy; chronic spinal muscular atrophy; chronic poliomyelitis; amyotrophic lateral sclerosis.

**DEFINITION.** A slow, gradual, progressive wasting and atrophy of certain groups of muscles, with symptoms varying in accordance with the variations in the pathological anatomy.

**CAUSES.** Most frequent in males between twenty-five and fifty years of age, and in many instances is hereditary. A predisposing cause seems to exist in those who habitually use one set of muscles (muscular strain). Exposure to cold and damp; lead; syphilis; injuries to the spinal column. Following such acute diseases as diphtheria, measles, acute rheumatism, typhoid and typhus fevers.

**PATHOLOGICAL ANATOMY.** Two theories as to the origin of the pathological changes are held: one that the initial lesion is in the cord (Charcot), the other in the muscular interstitial connective tissue (Friedreich).

The morbid alterations are of two groups—spinal and muscular. The spinal changes consist in the atrophy and degeneration of the anterior columns, wasting and disappearance of the multipolar ganglion cells of the anterior horns, with hyperplasia of the neuroglia; rarely the hyperplasia extends to the lateral

columns (amyotrophic lateral sclerosis); also wasting, atrophy, and degeneration of the anterior nerve roots. The muscular changes consist of a progressive wasting of the muscular tissue, with increase of the interstitial connective tissue. "The final result is, that the muscle is converted into a mere fibrous band with numerous fat-cells, the development of this latter material taking place outside of the muscular elements and in the newly-formed connective tissue." (Bartholow.)

**SYMPTOMS.** The invasion is gradual, the disease having been in progress some weeks or months before the patient is aware of its existence. Wasting begins usually in the hand, the first dorsal interosseus being the first to be attacked, then the muscles of the thenar and hypothenar eminence, then the deltoid, and so on from muscular group to group. Often, however, the extension is very erratic in its course, jumping from one group to another at some distance.

In the immense majority of cases the disease is permanently limited to one or a few groups of muscles in the upper, or more rarely, in the lower extremities. The only muscles not yet known to be attacked are those of mastication and those that move the eye-ball (Roberts.)

Fibrillary contraction is an early symptom, continuing more or less marked so long as any muscular fibers remain. It consists of wave-like movements of the muscles, excited automatically, by draughts of air or percussion. Coincident with the wasting are loss of power, disorders of sensation, coolness, and pallor of the surface.

The natural roundness and contour of the body and limbs are changed, the bones standing out in unaccustomed distinctness, giving the individual the appearance of a skeleton clothed in skin. The hand is frequently the seat of a very singular deformity—the "claw-shaped" hand.

The electro-contractility is preserved so long as muscular fibers remain.

**DIAGNOSIS.** When wasting palsy is fully developed its diagnosis is a simple matter. In its early stages a doubt may exist, but attention to the history, symptoms, and progress will determine the question.

Syringomyelia (abnormal dilatation of the central canal of the spinal cord) often begins with muscular atrophy as a marked symptom, and may be confounded with wasting palsy, the chief points of distinction between which are, the loss of power of per-



ceiving heat, or, often, to distinguish between heat and cold, and the appearance of trophic changes, such as a dusky or purplish hue of the hands, with a uniform thickness resembling myx-œdema, the development of blebs and ulcers, and changes in the nails. Arthropathies are sometimes met with.

**PROGNOSIS.** Very unfavorable, although the danger to life is often very remote. The disease may be arrested and remain stationary for years.

#### THE TREATMENT.

Place one hand under the occiput, the other under the chin, extend and gently rotate the head; treat the muscles of the neck thoroughly, deeply; raise the clavicles, chest, arms, and liberate the intercostals; treat the sides of the spine from above downward, in dorsal and lumbar regions, manipulate, extend and flex the lower limbs, and treat profoundly the special muscles involved, using a vibratory manipulation deeply so as to be sure to empty all the venous blood for the time, freeing the larger veins, stretching the muscular fiber in all the muscles implicated. Stimulate the spinal cord by pressure with thumb and fingers, while the limbs are raised upward or pulled backward, either way, as directed elsewhere for that purpose. See also that the terminal end filaments are freed in sphincters of the lower outlets of the body, which aids greatly in promoting capillary circulation in the whole body. Freedom of circulation of all of the fluids must be restored before good can result. This can only be done by the means recommended Osteopathically. Three-fourths of the trouble may be removed by the carrying-out of the directions for treating the neck. The brachial plexus (or region) requires special and thorough manipulations. All the movements applicable to the accomplishment of this purpose may be necessary in any given case. Osteopathy is the *sine qua non* in all obstructed fluid-flow in all manner of pathological conditions, effectual when properly and scientifically applied. Treatment every third day, gently, thoroughly.

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#### SPINAL SCLEROSIS.

**SYNONYM.** Duchenne's disease.

**DEFINITION.** A myelitis; an increase in the connective tissue of the spinal cord, with atrophy of the nerve structure proper.

**CAUSES.** Generally a hereditary neuropathic diathesis;



syphilis; alcoholism; mineral poisons; shock or injuries to the cord; exposure to cold and wet; mostly occurring between the ages of thirty-five and fifty-five; males more liable than females. It is said that railroad enginemen and firemen, as well as conductors and other trainmen, suffer from this and other spinal diseases by reason of the continual concussion of railway travel. The freedom from the disease in the negro has been noted by Mitchell.

**PATHOLOGICAL ANATOMY.** The changes in the cord are gradual in their development and follow a longitudinal instead of a transverse direction. The form, consistency, and color of the cord are altered, it being atrophied, indurated, and of a grayish color. The changes are hyperplasia of the connective tissue, with granular degeneration, atrophy, and disappearance of the proper nerve elements. The nerve roots undergo the same fibroid change. The joints undergo remarkable atrophic degeneration—the arthropathies or Charcot joints consisting of an osseous hyperplasia, the joint enlarging to an enormous extent.

**VARIETIES.** 1. Lateral sclerosis; 2. Posterior sclerosis, or locomotor ataxia; 3. Ataxia paraplegia; 4. Cerebro-spinal sclerosis.

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## I. PRIMARY LATERAL SCLEROSIS.

**SYNONYMS.** Antero-lateral sclerosis; spasmodic tabes dorsalis (Charcot); spastic spinal paralysis (Erb).

**DEFINITION.** A degeneration of the lateral columns of the cord; characterized by paraplegia, contractures of the muscles, with exaggerated reflexes.

**PATHOGENY.** The exact morbid condition is still a subject of discussion. The site of the lesion is the lateral white columns, in some cases extending to the anterior horn, and involving the whole length of the cord. The changes consist in an interstitial hyperplasia of the connective tissue, and an atrophy of the nerve elements.

**SYMPTOMS.** The onset of the disease is very gradual, with increasing feeling of heaviness and weakness in the limbs, progressing of a complete paraplegia. There is also jerking and twitching, with cramps and stiffness of the muscles of the paretic limbs. The spasms of the legs gradually increase in extent as the power lessens, until at last the legs, whenever extended, pass into a condition of strong extensor spasm, rigidly fixing them to



PLATE LI.—Shoulder and Arm Raising.



the pelvis, so that the patient lies rigid; if one leg is lifted from the couch by the observer, the other leg is moved also. The spasm may be such that the knee can not be passively flexed by any force that can be applied to it until the spasm has become less. When flexed the limb is comparatively supple; but if it is then extended, the spasm instantly returns, making the limb rigid, and often completing the extension, just as the blade of a knife opens out under the influence of its spring, "clasp-knife rigidity." Occasionally there occur brief flexor spasms, drawing the legs up. The knee-jerk is greatly exaggerated, and there can also be developed rectus-clonus and ankle-clonus. The spastic gait is characteristic, termed by Hammond "the waddle"; the legs drag behind and are moved forward as a rigid whole, the toes catching against the ground, the patient showing a tendency to fall forward. Sensation is unaffected. As the morbid process extends upward the superior extremities suffer in the same manner as those of the lower.

Electro-contractility early impaired and gradually declining until abolished.

**DIAGNOSIS.** The gradual development of weakness in the legs, excess of myotatic irritability and spasms with developing spastic gait render the diagnosis clear. If the symptoms develop suddenly or acutely, the morbid condition is not of the degenerative variety.

**PROGNOSIS.** Complete recovery rare. If the condition is early recognized its progress may be held in check for a long time.

**TREATMENT.** See Cerebro-Spinal Sclerosis.

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## II. LOCOMOTOR ATAXIA.

**SYNONYMS.** Posterior spinal sclerosis; tabes dorsalis.

**DEFINITION.** A chronic degeneration of the posterior columns of the spinal cord and the posterior nerve roots, characterized by loss of coordination, neuralgic pains in the limbs, loss of sensation and reflexes, and visceral and trophic changes.

**PATHOGENY.** "A progressive destructive process which has a selective influence on certain tracts in the posterior columns with their roots and ganglia and to a less extent on the peripheral nerves, particularly the optic. The nerve fibers of the cord are first involved. Their destruction is not a simple wasting, but is accompanied with evidence of irritation, such as swelling



of axis cylinders, and, secondarily, proliferation of connective tissue and slight congestion." (Dana.)

**SYMPTOMS.** Locomotor ataxia may be divided into three periods: 1. Disturbances of sensation; 2. Loss of coordinating power; 3. Paralysis. The onset of the disease is gradual, by sharp, darting, electric-like pains in the lower limbs, with disorders of the gastro-intestinal and genito-urinary tracts. Associated with the pains is a loss of sensation in the feet, the patient being unable to distinguish between hard and soft substances in walking, and, if the upper portion of the spinal cord be affected, is unable to coordinate the muscles of the fingers sufficiently to button his clothing. A sensation of formication over the surface, especially over the lower limbs, and about the waist, the knee, and the ankle, is present; there is nearly always a feeling of constriction about the trunk—the girdle.

Loss of coordination or ataxia, the subject being unable to walk upon a straight line with his eyes closed, and with difficulty if his eyes are opened. Inability to preserve the erect position with the feet close together, the body swaying widely and the patient falling on standing with closed eyes (Romberg's symptom), and as the malady progresses he throws his feet and legs in the most grotesque manner. Although the patient is unable to coordinate the muscles, their power is not lost, for, on being supported, he can kick or strike with his usual force.

The sight is early impaired, due to atrophy of the optic nerve, either double vision or inability to distinguish between different colors. Very early there is loss of pupil reflex to light, the reaction to accommodation being present (Argyll-Robertson symptom). As the disease progresses the sensation becomes more and more blunted and pain is slowly felt, in cases it being several minutes until the sticking of a pin is appreciated. A characteristic sign of the disease is the abolition of the patellar tendon reflex (Westphal's symptom), as well as other reflexes in the lower limbs. Loss of the sensation of temperature also occurs. The electro-contractility is decreased in the affected limb. General emaciation is marked.

Either early or late in the disease occur disturbances in micturition and loss of sexual power and often desire. There also occur in a fair number of cases, painless swelling and disintegration of various joints, particularly the knee and elbow—the tabetic arthropathies, or Charcot joint.

At any period of the disease peculiar crises, or neuralgic

attacks occur: if griping pains in stomach with vomiting, gastric crises; if renal pain or colic with disturbed urinary flow, nephralgic crises; if pain in bladder, vesical crises; if pain in rectum with hemorrhoids, rectal crises; if severe paroxysm of coughing, bronchial crises; if constriction of throat with dyspnoea, laryngeal crises; if cardiac pain and tachycardia, cardiac crises.

Paralysis finally ends the suffering of the patient. There is generally an entire absence of cerebral phenomena.

DIAGNOSIS. There are three pathognomonic symptoms of locomotor ataxia whose presence render the diagnosis positive; they are Westphal's symptom—absence of patellar reflex; Romberg's symptom—swaying of body and inability to maintain erect position with closed eyes; and the Argyll-Robertson symptom—loss of pupil reflex to light, but reaction to accommodation retained. Another important point is the history of syphilis five to twenty years before. Chronic myelitis is characterized by paralysis, and the courses of the affections are otherwise so different that an error should not occur. Diseases of the cerebellum present symptoms of disordered coordination, but they are the result of vertigo, and associated with headache, nausea, and vomiting, and neuralgic pains and eye symptoms absent. Paraplegia is a true paralysis, while sclerosis is not. Neuralgic pain is not a symptom of paraplegia. Multiple neuritis gives loss of power with pain, but does not present the three pathognomonic symptoms mentioned above.

PROGNOSIS. Unfavorable. Few if any recoveries are recorded, although rarely the progress has been retarded for a long time. There are some claims of recoveries of locomotor ataxia in the early stage, but that a cure of a genuine case, extending to the second stage, is ever effected, seems very questionable.

TREATMENT. See Cerebro-Spinal Sclerosis.

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### III. ATAXIC PARAPLEGIA.

SYNONYMS. Combined lateral and posterior sclerosis; antero-lateral sclerosis.

DEFINITION. A chronic degeneration of the lateral pyramidal tracts and of the posterior columns of the spinal cord; characterized by gradual developing paraplegia, with ataxia, and spasms of the limbs.

**CAUSES.** The causes are not so well determined as in other varieties of spinal sclerosis.

**PATHOGENY.** A sclerosis of the lateral and posterior columns of the spinal cord. It is to be noted that the posterior columns show the morbid changes higher up than in locomotor ataxia—the dorsal rather than the lumbar regions—and that the root-zone of the postero-external column is much less involved. Nor do the lateral tracts show the same degree of involvement as in spastic paraplegia.

**SYMPTOMS.** The onset is slow and gradual, with loss of power in the lower extremities. The muscles involved are particularly the flexors of the thigh and knee. One leg may be weaker than the other. There is also ataxia, the patient being unsteady when standing with feet together, and he tends to fall if the eyes are at the same time closed. Spasms of the lower extremity gradually develop and finally become as marked as in spastic paraplegia. The knee-jerk reflex is increased, quick and extensive, and rectus and ankle clonus can be developed. The sexual power is early lost. Incontinence of urine is frequent. Sensation is unimpaired and neuralgic pains are absent, as are eye symptoms.

**DIAGNOSIS.** The conditions ataxic paraplegia is most liable to be mistaken for are locomotor ataxia and spastic paraplegia. The presence of knee-jerk and loss of power in lower extremities are of value in discriminating from locomotor ataxia. Spastic paraplegia is not associated with ataxia—indeed, ataxic paraplegia is spastic paraplegia plus incoordination.

**PROGNOSIS.** As a rule favorable.

**TREATMENT.** See Cerebro-Spinal Sclerosis.

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#### IV. CEREBRO-SPINAL SCLEROSIS.

**SYNONYMS.** Multiple sclerosis of the brain and cord; cerebral sclerosis; spinal sclerosis; disseminated sclerosis (Charcot).

**DEFINITION.** A degenerative disease of the brain and spinal cord; characterized by pains in the back, disorders of sensation, loss of coordination, tremor on motion, scanning speech, and some mental impairment.

**PATHOGENY.** The disease consists of the development of patches of grayish, translucent, tough nodules, varying in size from a minute microscopical object up to the size of a walnut, varying in number and widely distributed in the white matter of



the hemispheres, ventricles, optic thalamus, corpus striatum, peduncles, pons, and cerebellum, while in the cord they are found in both the white and gray matter and in the columns. The deposits are also found in the nerve roots and nerve trunks. The nodules are composed of the neuroglia, much altered, and a newly-formed connective tissue. The result of the growth of the nodules is pressure upon the nerve structure, ending in its degeneration.

**SYMPTOMS.** Charcot divides this disseminated sclerosis into three varieties, depending upon the site of the marked changes, as the brain, the cord, or a combination of the two. The latter variety is the more common.

Rarely, the malady is ushered in with apoplectiform symptoms, but generally the onset is insidious, with pains more or less severe in the limbs and back, which are attributed by the patient to rheumatism. Also a feeling of formication, itching, and burning in the limbs. Loss of coordination of the hands in writing, or the feet in walking, or a jerky coordination, followed after a time by paresis, more or less general, with contracture of the muscles. Voluntary movements of the paretic limbs develop a tremor—the shaking tremor—which subsides when the limbs are at rest—intention tremor, with shaking of head. An early and frequent condition is nystagmus. The loss of coordination, with tremor and with contractures of the muscles of the legs, has given rise to the “waddle” or “hop” gait when walking. There are also present headache, vertigo, mental impairment, with an unnatural contentment of the feelings and with the surroundings, a scanning or slurring speech, disorders of vision and hearing, sexual disturbances, vesical disorders, gastric and other crises and often the development of bed-sores. Knee-jerk and muscular reflexes are exaggerated. The disease is progressive, the symptoms developing as the various nerve tracts are invaded.

**DURATION.** Ranges from a year to twenty years, an average being five or ten years.

**DIAGNOSIS.** Paralysis agitans may be mistaken for disseminated sclerosis. The chief points in diagnosis: the presence in paralysis agitans of the fine tremor continually without shaking of the head, with a peculiar flexion and rigidity of the hand, while in cerebro-spinal sclerosis the tremor is produced only on movement of the muscle, and is associated with shaking of the head. Paralysis agitans, a disease of middle life, sclerosis under forty years. Changes in the voice, speech, and vision are present in



cerebro-spinal sclerosis, but absent in paralysis agitans. Tumor of the pons or crus is accompanied with wild, jerky incoordination closely resembling disseminated sclerosis, but tumor also has headache, optic neuritis, local spasm, and local paralysis. General paralysis of the insane and disseminated sclerosis are frequently confounded, as are locomotor ataxia and primary lateral sclerosis.

PROGNOSIS. Unfavorable. The disease slowly but steadily progresses, chronic nephritis or tuberculosis frequently developing and causing death.

#### THE TREATMENT.

Without regard to differentiation in the special manifestations of the diseased conditions of the cord, under the name of spinal sclerosis, including primary lateral sclerosis, posterior sclerosis (locomotor ataxia), ataxic paraplegia, and cerebro-spinal sclerosis, we would endeavor to impress on the mind of the reader that every variety of effects characteristic of the pathological conditions of the spinal cord, under whatsoever name classed, is the result following obstructed venous circulation. That removed early and kept removed means a cure of the disease, arrest of progress, a restoration of health, a normal state.

In the incipency of these affections there will be observed an increase of temperature of the head a little above the normal, and a tendency to contracture of the muscles of the neck, a tenderness at the sides of the cervix, all indicative of pressure. This pressure is the direct result of venous obstruction; this starts in the large veins, caused by exposure to lower temperature, damp atmosphere, producing enervation of nerve force from pressure on the walls of the nerves, resulting in partial or complete paralysis at the ends, hence stasis of blood in capillaries and in venoles and lymphatics, so that waste material can not escape. Decomposition ensues, chemical changes take place, and destruction of the connective tissue is the result. From this picture, what course suggests itself but to take off the pressure? To enter into the profundity of these phenomena would not comport with the present mental status of the profession, and therefore would be "beating the air," and the effects nil. We therefore proceed to demonstrate our philosophy by "works" rather than spend time in a vain effort to open the eyes of those who "won't see" until they "feel the grip" of actual observation.

Our direction for general treatment covers the ground neces-

sary, and we therefore suggest a thorough general treatment, starting with extension and rotation of the cervix, with thorough neck manipulations, so as to open all the channels (the veins and lymphatics) that, obstructed, cause the difficulty under consideration, raising the clavicles, arms, chest muscles, treating the spine all the way down, manipulating the lower limbs, flexing and extending them, freeing the circulation all over the body, equalizing the nerve forces, taking off all pressure according to directions given for that purpose; and do this repeatedly, at least three times each week, steadily, persistently, until new tissue can be formed.

The Tissue Elements may have to be supplied in some instances, such as Kali phos., Silicia and Calc. fluoricum. The reasons for these will be found elsewhere in this work.

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## DISEASES OF THE NERVES.

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### SIMPLE NEURITIS.

**DEFINITION.** An inflammation of the nerve trunks; characterized by pain and paresis of the parts supplied by the affected nerve trunk.

**CAUSES.** Wounds and injuries or compression of nerves; cold and damp; syphilis (?); lead.

**PATHOLOGICAL ANATOMY.** Hyperaemia, followed by exudation into the nerve sheath and connective tissue, "which becomes softened and ultimately breaks down into a diffluent mass." Migration of white corpuscles takes place into the neurilemma. Recovery may occur before destruction of the nerve elements is produced, absorption of the exudation occurring. "It is important to note that when inflammation occurs in a nerve it may extend from the point first diseased upward (neuritis ascendens), or downward (neuritis descendens)."

**SYMPTOMS.** The onset may be accompanied with febrile reaction. The most decided symptom is pain along the course of the nerve trunk and its peripheral distribution, of a burning, tingling, tearing, intense character, increased by pressure or motion. If the affected nerve be a mixed one—sensory and motor—spasmodic contractions and muscular cramps occur, followed by impaired motion, terminating in paresis of the muscles

innervated by the affected trunk. If the inflammation proceed to destruction of the nerve trunk, wasting and degeneration of the muscular tissue ensues. Various trophic changes also occur, such as cutaneous eruptions, and clubbing of the nails.

The electro-contractility is impaired or lost.

DIAGNOSIS. Myalgia or muscular pain is not associated with paralysis, nor does the pain follow the course of a nerve trunk.

Neuralgia has the pain, but, as a rule, not the tenderness of neuritis.

PROGNOSIS. Generally favorable, with proper treatment.

TREATMENT. See Multiple Neuritis for treatment.

### MULTIPLE NEURITIS.

SYNONYMS. Polyneuritis; peripheral neuritis; disseminated neuritis; degenerative neuritis; pseudo-tabes; alcoholic paralysis; beri-beri (Brazil and India); kakke (Japan).

DEFINITION. A parenchymatous inflammation of a number of symmetrical nerves, simultaneous or in rapid succession; characterized by pain, numbness, loss of power, or ataxia, with muscular atrophy. Mental symptoms are often associated.

CAUSES. Alcoholism; syphilis; malaria; lead, arsenic, or silver; following diphtheria, typhoid fever, and rheumatism.

Beri-beri and kakke are epidemic varieties of multiple neuritis and the result of a special poison. The probability is that the various cases named develop in the blood a poison, having a particular susceptibility or "selective action" for nerve fibers.

PATHOLOGICAL ANATOMY. The affection is generally bilateral and symmetrical. An important characteristic is its peripheral distribution, the inflammation being most intense at the extremities of the nerves, lessening progressively toward the center, usually terminating before the nerve roots are reached. The inflammatory process affects the nerve fibers primarily and the sheath and connective tissue secondarily—a parenchymatous inflammation. The affected muscles are paler and smaller than normal, the fibers reduced in size and undergoing granular changes.

SYMPTOMS. All plans yet suggested for classifying the varieties of multiple neuritis are imperfect. The onset may be sudden, even overwhelming, causing rapid death, but is usually



PLATE LII.—Showing How to Strain Elbow Joint.





subacute or chronic in its course, the symptoms being widespread in proportion to the acuteness, intensity, and cause of the malady. The symptoms may be described under three forms—a motor, a sensory, and an ataxic form. The motor form shows motor weakness, chiefly involving the flexors of the ankles, the extensors of the toes, and the extensors of the wrist and fingers in the forearms. Inflammation of the anterior tibial or peroneal nerve in the leg, and the radial branch of the musculo-spiral in the arm, resulting in the double “wrist-drop” and “foot-drop” so characteristic of this disease. Any nerves of the body may be affected, the symptoms varying with the particular nerves. The sensory form shows pains, tenderness, tingling, and numbness, with loss of cutaneous sensibility. The ataxic form shows incoordination with or without sensory disturbances, but with loss of the muscular sense. The forms may all be associated, in greater or less extent, in any one case.

Muscular atrophy begins early and progresses with the disease. The knee-jerk is feeble or absent. The electro-contraction is feeble or lost. In alcoholic cases, there may be delirium, mania, and delusions, associated with tremors.

Trophic changes may occur in the nails, hair, and skin. The characteristic glossy condition of the skin, with some œdema, is due to involvement of the vaso-motor nerves. Rarely the vagus, optic, and laryngeal nerves are involved.

The disease may be ushered in with fever, 101-103 degrees F., rapid, feeble pulse, headache, nausea, vomiting, with delirium or confusion.

The alcoholic variety affects chiefly all the limbs; the malarial, the legs; diphtheria, the pharyngeal and motors of the eye; rheumatic, the face; and lead, the arms.

DIAGNOSIS. In no disease is an early diagnosis so important from a therapeutical standpoint. Early treatment may prevent months of suffering and idleness.

Since the symptoms of this wide-spread affection have been properly separated from disease of the spinal cord, with which they were formerly always associated, the diagnosis is very readily determined.

PROGNOSIS. As a rule favorable if early and proper treatment be instituted.

#### THE TREATMENT.

In simple and multiple neuritis we have further demonstration of the results of the most serious character from undue press-

ure on the tissue, caused by contracture of muscle fibers. Whether due to over-stimulation of the nerves controlling the fibers of muscles, or the pressure sufficiently strong to paralyze the nerves controlling said fibers, the results are stasis of blood in the vessels, lymph in spaces, thus increasing pressure by the accumulation of fluids, separating the nerve footlets, cutting off communication—hence death in the parts, with everything involved. To repeat the directions for the treatment indicated seems superfluous. The philosophy holds good everywhere, in all pathological conditions; the only thing to become familiar with is the tracing out to a legitimate conclusion the real condition existing, and remove the pressure. That done, wait on Dame Nature to perform her accustomed, unerring duties—rebuild the “waste places.” Whether we find the condition acute or chronic, the cause is the same, and requires the same means to remedy—may be a longer course in the latter than the former, but the removal of the pressure must be done in the one case as in the other. Persistence in the treatment, intensifying it in parts needed, lessening in others according to indications, should not be lost sight of, for amelioration can be obtained in no other way so surely as this way. The cranial congestion is removed by freeing the pressure on the neck veins, by relieving muscular contracture.

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## NEURALGIA.

**DEFINITION.** A disease of the nervous system, manifesting itself by sudden pain of a sharp and darting character, mostly unilateral, following the course of the sensory nerves.

**CAUSES.** Hereditary; anaemia; malaria; syphilis; metallic poisons; anxiety; mental exertion; exposure to cold and damp; injuries of a nerve trunk.

**PATHOLOGICAL ANATOMY.** The old axiom of neuralgia being “the cry of the nerves for pure blood” is perhaps only part of the truth. The changes in the nerve trunks or centers have not as yet been determined. A fair number of cases present the changes of neuritis.

**VARIETIES.** 1. Neuralgia of the fifth nerve; 2. Cervico-occipital neuralgia; 3. Cervico-brachial neuralgia; 4. Dorso-intercostal neuralgia; 5. Lumbo-abdominal neuralgia; 6. Sciatica.

### NEURALGIA OF THE FIFTH NERVE.

**SYNONYMS.** Tic-douloureux; Fothergill's disease.

**SYMPTOMS.** Paroxysmal pain, of a sharp, darting, stabbing character, most common at points along the course of the supra- and infra-orbital branches of the fifth nerve of the left side, and attended with an increased lacrymation. When of any duration, nutritive changes are observed in the nervous distribution, to-wit: œdema along the course of the nerve, gray eyebrows and convulsive twitches of the muscles, termed "tic-douloureux," tenderness at the infra- and supra-orbital foramina as well as along the course of the nerve distribution.

#### CERVICO-OCCIPITAL NEURALGIA.

**SYMPTOMS.** Paroxysmal pain, of a sharp and lancinating, or deep, heavy, tensive character, along the course of the occipital nerve upon one or both sides, extending from the vertex, and on the neck as far down as the clavicle, and upward and forward to the cheek. May be associated with hyperaesthesia of the skin, and with cramps in the cervical muscles, and with attacks of herpes. A sensation of cracking at the nape of the neck is an annoying symptom in many cases.

#### CERVICO-BRACHIAL NEURALGIA.

**SYMPTOMS.** Paroxysmal pain, of a severe, boring, burning, or tensive character, with sensations of numbness and weakness of the arm, hand, shoulder, scapula, and mamma, with tenderness along the cervical plexus. œdema of the arm and other parts along the distribution of the cervical plexus occur if the neuralgia be of long duration, the result of nutritive changes, the limb at times becoming pale, the skin glossy, dry, and harsh.

#### DORSO-INTERCOSTAL NEURALGIA.

**SYMPTOMS.** Paroxysmal pain of a sharp and lancinating character, along the fifth and sixth intercostal spaces, often associated with the development of herpes, the so-called herpes zoster, or "shingles." Tenderness at the points where the nerves emerge from the intervertebral foramina at the sides of the chest and at points in front.

#### LUMBO-ABDOMINAL NEURALGIA.

**SYMPTOMS.** Paroxysmal pain of a sharp and lancinating, at times heavy and dull character, following the course of the ilio-hypogastric nerve, ilio-inguinal and external spermatic nerve, supplying the integument of the hip, the inner side of the thigh, the scrotum and labium.



## THE TREATMENT.

If there is any condition that calls loudly for deep breathing (oxygenation of the blood), neuralgia does. The first thing to be done in all cases should be to induce deep inspirations. If the patient is lying down, on the back, let the operator take hold of one arm, draw it strongly up to the side of the head, stretching all of the intercostals, chest muscles and ribs upward and outward on either side, placing finger-ends to the sides of the spinous processes, beginning at the last cervical and extending down to the eighth dorsal vertebra. Then raise the clavicle, extend the neck, manipulate the neck muscles; then, lastly, treat the face, sides of head, and use moderate pressure and vibration over painful localities for two to five minutes, until relieved. The treatment should be slowly done, modified according to the susceptibility of the impressions of the patient, and intensity of suffering from the affection. The above directions apply to all neuralgias of the face. The occipital neuralgia may require variations in the treatment as conditions indicate. Intercostal and lumbar neuralgia succumb to movements of the chest and the dorsal muscles involved.

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SCIATICA.

DEFINITION. A neuritis. Pain following the course of the sciatic nerve. The sacral plexus is made up of the fourth and fifth lumbar and the first two pairs of sacral nerves.

SYMPTOMS. Sciatica usually follows an attack of lumbago, the pain becoming fixed in the sciatic nerve; at times it is a true neuritis.

The pain is sharp, tearing, shooting, or lancinating in character, increased upon motion, shooting along the course of the nerve into the hip, inner side of the thigh, calf of the leg, ankle, and heel, at one or all of these points, in paroxysms lasting from a few hours to twenty-four hours or longer. The tactile sensation in the foot and motility in the limbs are impaired, and if of long duration, wasting of the limb occurs.

DIAGNOSIS. Rheumatism, so called, is the only condition likely to be confounded with neuralgia. The history of the attack, the character of the pain, with its localized spot of tenderness, should prevent such an error.

PROGNOSIS. If promptly and properly treated, unless the

result of pressure of an exostosis, aneurism, or other tumor favorable.

#### THE TREATMENT.

Sciatica—the dread of most practitioners who depend on medication—is usually relieved, modified, as well as cured, by Osteopathic treatments, continued for a reasonable time. The whole system should be treated down to the seat of the pain, then the lower limbs demand special attention. Strong flexion of the limb on the side of the affection is to be made, with the fingers of one hand pressing on the sides of the spines of the lower lumbar vertebrae, abducting the limb against the fingers, so as to press the muscular tissue of the sciatic filaments, and follow the course of the nerve as far down as possible, between the ischium and the trochanter as low as the lower portion of the ischium; then raise the limb, holding it by the ankle with one hand, and the other pressing strongly above the knee, endeavoring thereby not only to stretch the sciatic, but the muscles of the dorsal and lumbar regions. This same object may be accomplished by placing the ankle over the shoulder and both hands locked above the knee, as shown in illustration elsewhere. All the muscles of the hip and upper portion of the thigh should be manipulated deeply, from side to side, opening the saphenous vein, so that the engorgement of veins may be reduced. The usual treatment of adducting and abducting and flexing and extending of the lower limbs should receive due attention. The vibratory dorsal and lumbar treatment should be used, especially over the lower lumbar and gluteal area. Select any means illustrated in this work for the relief of the patient, using all recommended as indicated in a given case, to accomplish results. Treatments should be given every day or every other day, requiring a longer or shorter time to cure, according to the nature of the case, from one to a various number, ranging over several weeks. Much benefit may be assured, and a large number of the very worst cases promised a certainty of being cured in a few weeks.

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#### FACIAL PARALYSIS.

SYNONYM. Bell's palsy.

DEFINITION. An acute paralysis of the seventh cranial—the facial nerve, the great motor nerve of the muscles of the face—the nerve of expression.

**CAUSES.** Exposure to a current of cold air against the side of the face—over the pes anserinus—is the most frequent cause. Also due to injury or disease of the middle ear. Syphilis.

**SYMPTOMS.** The facial nerve supplies the muscles of the face, the muscles of the external ear, also the stylo-hyoid, posterior belly of the digastric, the platysma, one muscle of the middle ear, the stapedius, and one palate muscle, the levator palati; by means of the chorda tympani branch it controls the secretion of the parotid and submaxillary glands, and, possibly, the sense of taste. It also furnishes motor power to the azygos uvulae, the tensor tympani and the tensor palati muscles. The onset is usually sudden, with tingling of the lips and tongue, and upon looking into the mirror the patient is surprised by the perfectly blank, motionless side of the face; the corner of the mouth is depressed, the eyelids open, the face drawn toward the well side, and the patient is unable to expectorate, whistle, or swallow. Any of the muscles innervated by the nerve may participate in the paresis.

The electro-contractility is feeble or lost. The reflexes are abolished.

**DIAGNOSIS.** Paralysis of the muscles of the face occurs in hemiplegia; the points of differentiation are the presence of cerebral symptoms and the normal reflex excitability.

Facial palsy with otorrhœa, imperfect hearing, obliquity of the uvula, and loss of taste, determine its origin within the aquæductus Fallopii. It is due to peripheral neuritis if the taste be normal and the uvula straight. If other nerves are also involved the origin is central.

**PROGNOSIS.** Favorable.

#### THE TREATMENT.

The treatment for this affection is necessarily complicated, and covers a good deal of surface. The aim at first should be to take off the pressure around the stylo-mastoid foramen (the exit of the nerve or nerves from the aperture), and from the parotid gland. The stretching of the muscles of the sides and back of the neck, and rotary movements, are important, whether the trouble lies along the line of course after emerging from the foramen, or whether the trouble begins in the pons, as its supposed origin. The freedom of contracture all along the line is essential. Whether this be in the tympanic muscle, stylo-mastoid foramen, or at its origin, the cause is the same—pressure. That is the thing to remove, hence overcoming, relaxing the

muscular fibers of all of the muscles of the neck, to give freedom to the venous return blood, is essentially important. Extension of the neck, rotation gentle, firm and steady, should constitute the first movement. The freedom of all muscular fibers along every fibrilla, denominated the facial nerve, must be the order, and deep inhalations made by the patient at stated intervals, to oxygenate the blood. Strong and long-continued manipulations high up under the angles of the lower jaw are needed, pulling the muscles in various directions, manipulating the parotid glands, the submaxillary as well as the sublingual glands. In this case, as in all others, the outlets as well as inlets (the tubes leading in and out) everywhere, should be normal, then normal action will exist. Treatments to be repeated every other day.

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## GENERAL OR NUTRITIONAL DISEASES.

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### CHOREA.

**SYNONYMS.** St. Vitus' dance; insanity of the muscles.

**DEFINITIONS.** A functional (?) disorder of the nervous system; characterized by irregular spasmodic movements of groups of muscles, with muscular weakness, more or less approaching paralysis of the affected parts.

**CAUSES.** Essentially a disease of childhood; hereditary; reflex, from dentition, worms, masturbation, or fright; probably the result of rheumatism in many cases.

**PATHOLOGICAL ANATOMY.** As yet there has been no constant anatomical lesion discovered, the theory of emboli having, however, many advocates.

**SYMPTOMS.** The onset is usually gradual, the child seemingly grimacing or jerking the arm or hand, as if in imitation, followed soon by decided irregular jactitations of the muscles of the face (histrionic spasm), of the eyelids (blepharospasm), eye-balls (nystagmus), and the shoulder, arm, and hand, finally extending to the lower extremities, interfering with motility; in severe cases, inability of self-feeding or of holding anything in the hands. The speech is often unintelligible, the tongue constantly moving in an irregular manner.

The heart's action is tumultuous and irregular, associated



often with a soft, blowing, systolic murmur, most distinct at the base. The muscles are usually quiet during sleep, although this is not always the case. The mind is somewhat blunted, the temper irritable, the memory impaired. If the irregular muscular movements are confined to one side of the body, it is termed hemi-chorea.

DIAGNOSIS. Chorea was confounded with epilepsy until the points of distinction were pointed out by Sydenham.

Paralysis agitans has general muscular tremor, beginning in one limb, gradually progressing, uninfluenced by treatment; a disease of the elderly. Post-hemiplegic chorea is the choreic movement of a paralyzed limb.

PROGNOSIS. The vast majority of cases recover, but relapses are very frequent.

#### THE TREATMENT.

It will generally be found that accompanying this affection nerve waste from the genitalia constitutes the largest factor. The sympathetic nervous system, the terminal filaments, are bound. When the terminals of the sympathetic and the motor footlets are separated, "insanity of muscular action" is to be looked for as a natural sequence. Orificial examination should be attended to, correcting whatever is needed in the case there, then manipulations Osteopathic will be beneficial. In this day of discovery, advancement, intelligence along the lines of knowledge of the human system, the practitioner becomes culpable who neglects his duty in this regard. No wonder it is a "disease of childhood," for the ordinary practitioner depends so largely upon the *vis a tergo* of his small quiver of one-sidedness in faith and practice, that a new departure to him is a "shameful violation of the code," and deserves immediate excommunication from men or mortals of the "vile" wretch who would attempt to digress. Take off the "fig leaf" long enough to learn the condition of the patient, then a rational treatment may be instituted, unless the doctor should, after finding "pinched sympathetic nerve filaments," conclude the efficacy of some "high potency" is adequate to the emergency, and giving it, await "the time with patience" for months, and let his patient suffer it out. Such a course is worse than reprehensible. Carry out the motto—"Take off the Pressure."

It will be found upon examination that there is more or less spinal tenderness about the second lumbar vertebra, and at the sides of the neck at the exit of the spinal accessory as it emerges



PLATE L,III.—Raising Clavicle, Patient Sitting Up.



at the posterior border of the sterno-cleido mastoidei. More or less hyperaesthesia all along the spine is present, and the reflexes readily induced. The Osteopath will overcome much of the trouble by a systematic course of rectal divulsions, either with digits, or, better by far, with a bivalve speculum. Pratt's is a first-class instrument for that purpose, and every Osteopath should have one. Many conditions will present themselves where the use of it will afford perfect satisfaction, not attainable otherwise. It will assist in taking off the pressure, and do it effectually, as desired, and arouse latent energies that have slept for years, perhaps. Its use starts up capillary circulation and regulates the heart's action, sometimes, better than through the vaso-motor filaments at the upper cervix. These divulsions may be repeated at longer or shorter intervals *ad libitum*, if not too much at a time—it is a good plan to do so gradually; and in constipation it is an effectual means, dilating each sitting a little more, until contracture is overcome and regularity ensues. It also is needed in many cases where a dormant, relaxed state exists, re-establishing normal vitality, and restoring the lost powers in an incredibly short time. Use it.

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## EPILEPSY.

**DEFINITION.** A chronic disease, of which the characteristic symptoms are a sudden loss of consciousness, attended with more or less general convulsions.

**CAUSES.** Heredity; rarely, worry, anxiety, depression, or fright. Pressure from a tumor at the periphery, or thickening of the membranes of the brain, causing pressure; dyspepsia (?); syphilis; uterine diseases.

**PATHOLOGICAL ANATOMY.** There are no constant anatomical lesions, as yet, associated with essential epilepsy.

In "Jacksonian," "cortical," or "partial epilepsy," however, the "motor cortex" is irritated by disease and there occur tonic and clonic spasms of the same character as in general epilepsy, confined to a single arm, or an arm and half the face together, or may be the entire half of the body. These epileptiform attacks furnish precise data as to the locality of the lesion; spasms affecting the distribution of the facial nerve point to the lower third of the central convolution; of the arm, the middle third of the cen-



tral convolution; of the lower extremity, the upper third of the central convolution.

VARIETIES. 1. *Epilepsia gravior, le grand mal*; 2. *Epilepsia mitior, le petit mal*.

SYMPTOMS. *Le grand mal* is preceded by a more or less pronounced and curious sensation, the so-called *aura epileptica*.

The attack proper is sudden, the subject suddenly falling, with a peculiar cry, loss of consciousness, and pallor of the face, the body assuming a position of tetanic rigidity, succeeded after a few moments by more or less pronounced clonic convulsions followed by a coma of several hours' duration. The subject awakens with a confused or sheepish expression, with no knowledge of what has occurred, unless he has injured himself during the attack, either by the fall, or, what is very common, has bitten his tongue during the convulsions.

*Le petit mal* is manifested either by attacks of vertigo, the consciousness being preserved, or by a passing absent-mindedness, either form being associated with slight convulsive phenomena, followed by slight coma or mental confusion of short duration.

The mental functions are not, as a rule, injured by attacks of epilepsy, unless they recur very frequently. Indeed, when at wide intervals, the subject seems relieved by them, "the sudden, excessive, and rapid discharge of gray matter of some part of the brain on the muscles," the so-called "electrical storm," having cleared the cerebral atmosphere. The great majority of epileptics suffer from chronic gastric catarrh, and have at the same time an inordinate appetite (*boulimia*); indeed, an attack of gluttony may immediately precede a fit.

DIAGNOSIS. Uraemic convulsions closely resemble an epileptic attack; but the dropsy or general oedema and albuminous urine, increased temperature, of the former should guard against error.

Feigned epilepsy often misleads the most practical expert.

Jacksonian epilepsy begins as a spasm of a limb or some portion of a limb, and is confined there or may gradually extend until even a general convulsion occurs.

PROGNOSIS. The vast majority of cases will not recover under treatment, but have the frequency and severity of the attacks greatly ameliorated, but sooner or later returning with

their former severity. Cases the result of the various reflex causes usually recover when the cause is removed.

#### THE TREATMENT.

Many cases have been radically cured by this treatment. The treatment is to be directed to the neck first; not that "the atlas is dislocated" every time, but the contracture of the neck muscles prevents normal circulation in the brain. The spine needs special treatment from start to finish, the sphincters relieved and special attention given to the general circulation. Treatments should be given every other day. The splanchnics are greatly at fault, and are to be looked after; the renal splanchnic righted, and the stomach should be rested by doing without breakfast, and observing not to eat too much at one time. Deficiency of neurine substance is supplied by the tissue element known as *Calcareo Phosphoricum*. As much as five grains thrice daily is requisite. A systematic cording of the lower limbs persistently has cured many cases. Hypnotism has also lessened the attacks in number and severity by Therapeutic Suggestion during the "profound stage," after reflexes are corrected. The intelligent Osteopath will get good results from his treatment, scientifically applied three times each week. This, with orificial surgery where indicated, should satisfy a majority of cases. We surely commend this treatment to the consideration of those interested, as accomplishing better, more satisfactory results than any other. Pay special attention to the reflexes. Take off the pressure everywhere in the body. Set the atlas, if dislocated.

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#### HYSTERIA.

**DEFINITION.** A nutritional disorder of the nervous system, of the nature of which it is impossible to speak definitely; characterized by disturbances of the will, reason, imagination, and the emotions, as well as motor and sensory disturbances.

**CAUSES.** A morbid condition confined almost exclusively to women. Young girls, old maids, widows, and childless married women are the most frequent subjects of the disorder. The paroxysms frequently develop during the menstrual epoch. The menopause is another frequent period for its manifestation. A peculiar condition of the nervous system, either inherited or acquired, is responsible for the phenomena of hysteria, the peculiar

manifestations being excited by the disturbances of either the sexual, digestive, circulatory, or nervous system.

Hypochondriasis, a peculiar mental condition, characterized by inordinate attention on the part of the patient to some real or supposed bodily ailment or sensation, a continual introspection, as seen in males, is a condition much like the hysteria of the female.

**PATHOGENY.** Structural alterations have thus far not been detected in cases of hysteria; it is thus a functional disturbance of the nervous system. It should, however, be borne in mind that hysterical manifestations frequently develop during the prevalence of organic diseases.

**SYMPTOMS.** These will be considered under the headings of the hysterical paroxysm, and the hysterical state.

The Hysterical Paroxysm or fit occurs nearly always in the presence of others, and develops gradually with sighing, meaningless laughter, causeless moaning, nonsensical talking, and gesticulations, or a condition of fidgets followed with a sensation of choking dyspnoea, and a ball in the throat—the globus hystericus. These and similar symptoms precede the fit, during which the unconsciousness is only apparent, the patient being aware of what is transpiring about her. During the paroxysm the patients may struggle violently, throwing themselves about, their thumbs turned in and their hands clenched. Again, spasmodic movements occur, varying from slight twitching in the limbs to powerful general convulsive movements, and to almost tetanic spasms. The paroxysm ends by sighing, laughing, crying, and yawning, and a sensation of exhaustion. During the attack it will be noted that the surface and face are normal, showing absence of respiratory embarrassment, the breathing varying from very quiet to spluttering and gurgling sounds, the pupils not dilated, the pulse normal, the temperature normal, and absence of foaming at the mouth and wounding of the tongue.

The Hysterical State is shown by disturbances of the mental and sensory-motor functions respectively. It may be a permanent condition or occur at intervals with greater or less severity.

**Mental Disturbances.**—The patients are emotional, erratic, excitable, impatient, and self-important, showing marked defects of will and mental power.

**Sensory Disturbances.**—This is either a condition of exaggerated sensibility or hyperaesthesia, as shown by the marked effects from the slightest irritation and the cutaneous tenderness

along the spine, or a condition of anaesthesia as shown by the apparent absence or recognition of pain after severe irritation, or a perverted sensibility, as shown by the feeling of tingling, numbness, and formication. Sensibility to heat or cold is often absent. There is great perversion of the special senses in many of the cases.

Charcot, referring to the ovarian hyperaesthesia of hysteria, says: "It is indicated by pain in the lower part of the abdomen, usually felt on one side, especially on the left, but sometimes on both, and occupying the extreme limits of the hypogastric region. It may be extremely acute, the patient not tolerating the slightest touch; but in other cases pressure is necessary to bring it out. The ovary may be felt to be tumefied and enlarged. When the condition is unilateral, it may be accompanied with hemianaesthesia, paresis, or contracture on the same side as the ovarialgia; if it is bilateral, these phenomena also become bilateral. Pressure upon the ovary brings out certain sensations which constitute the *aura hysterica*, but firm and systematic compression has frequently a decisive effect upon the hysterical convulsive attack, the intensity of which it can diminish, and even the cessation of which it may sometimes determine, though it has no effect upon the permanent symptoms of hysteria."

Motor Disturbances.—These phenomena embrace every variety of motor disturbance, from exaggerated excitable movements to defective or complete loss of power. With the paralysis that may occur, neither nutrition nor sensation is constantly impaired. Hysterical paralysis is liable to frequent and sudden changes, the loss of power often disappearing suddenly. Aphonia, from paralysis of the laryngeal muscles, is a frequent form of paresis. Some hysterical patients refuse to even make an attempt at speech.

"A curious enlargement of the abdomen is observed sometimes, constituting the so-called phantom tumor. This region presents a symmetrical prominence in front, often of large size, with a constriction below the margin of the thorax and above the pubes. The enlargement is quite smooth and uniform, soft, very mobile as a whole from side to side, resonant, but variable on percussion, and not painful. Vaginal examination gives negative results, and under chloroform the prominence immediately subsides, returning again as the patient regains consciousness."

Among the numerous other symptoms that may develop in



a hysterical patient are disturbances of digestion, circulation, respiration, and disorders of micturition and menstruation.

Among other phenomena that belong to the hysterical state are to be mentioned Hystero-epilepsy, a condition of hysteria to which is superadded the convulsion, epileptic in form; Catalepsy, a condition in which the will seems to be cut off from certain muscles, and in whatever position the affected member is placed, it will so remain for an indefinite time; there may or may not be unconsciousness and loss of sensation; Trance, the individual lying as if dead, circulation and respiration having almost ceased; Ecstasy, a condition in which the individual pretends to see visions and acts in a most ridiculous manner.

DIAGNOSIS. The hysterical state is so general in its manifestations that it is to be borne in mind in diagnosing all ailments occurring in women. The diagnosis is attended with great difficulty, however, and requires the display of all the skill of the clinician to prevent error.

PROGNOSIS. Death from either a hysterical fit or the hysterical state is the rarest of events, if it ever occurs. The ultimate recovery of a hysterical patient is of frequent occurrence. Marriage has cured many cases, although it can hardly be advised by the physician.

#### THE TREATMENT.

This is another one of the affections resulting from "tightened sphincters," and relieved by taking off the pressure. The bivalve is the most effectual source of relief ever devised by mortals. It is always a matter of merciful gratitude that wells up in my inmost soul toward Professor Pratt for his discoveries of reflexes and the marvelous uses of the bivalve. I have had universal success with its use in hysteria. It acts like magic—at once. The coordination of the nerve force is established and the patient experiences the most salutary effect. All the foolishness is at an end (generally at the lower end), and when we take off the pressure of the internal sphincter there is a "calm and peaceful rest" comes over the mind of the patient that beggars description. When I was younger than I am now, it was my painful service to sit up all night, watching over women whose lives were supposed "to hang in the balance" and liable to "wink out" momentarily, with medicine in hand (*a la* spoon), in readiness to pour down the victim's throat, through closed, clenched canines, as often as possible, and the most incongruous compounds that Allopathic

ingenuity could mix together—"Hoffman's Anodyne," for instance; assafoetida, *et id omne genus*—when, lo! I would succeed in "curing my patient," get the honor, and sometimes pay, for it. But I have lived in a better time, learned a new idea, adopted it, and it does not require nasty drugs, anxious thoughts, nor impatient waiting. It effectually answers. I could give the reader a long list of cases that it has been my lot to witness, suffering with this affection, and narrate many laughable instances associated therewith. I was called to see a 17-year-old unmarried, beautiful blonde, living about two miles from my office. It had rained all the night before; the road was the kind we have in Illinois under those circumstances. The case was one of an urgent nature—the girl was thought to be dying, and horse-flesh suffered ere I got there. I approached the bedside of that bundle of youthful, marriageable loveliness with feelings of profound caution and solemnity, carefully felt the pulse, ascertained that death was far away, and had no sooner let go the wrist than my supposed dead or dying patient suddenly arose, started for the door, reached it, plunged forth into the rain, out into the pasture, made direct headway for a pond of water of considerable area two hundred yards from the house. She rushed out into the center of the body of water, where it was at least eighteen inches deep, and as she got to this particular spot, two young men who had followed her, caught her, brought her back to the house, where she seemed as well reconciled as if nothing had happened. I ordered a mustard poultice, placed it the whole length of the spine, put her on a pallet on the floor, and as signs of restlessness began to appear in my patient, I ordered a clyster of sapo, salt, castor oil and terebinth, fully a quart, altogether, used. That settled the difficulty; relaxation of the sphincters ensued. Relief was immediate. Since then I have had many cases, and taught by that simple lesson, have had no difficulty in relieving every case. The bivalve saves all the trouble of fixing up and using compounds. It induces immediate response, satisfactory to patient and doctor. Properly used, there is not the slightest danger. Some cases are extremely contracted, and a small bivalve is the kind needed at the start, then a larger one. Whichever is used, let it be well oiled, introduced carefully, then, by turning the screw attached until it is spread out about half an inch, the blades apart, the handles are gently squeezed, then relaxed; then spread a little more, gradually divulsing the sphincter until the patient is relieved of the spell of hysteria.

I had a case of this sort in my practice out in Denver, Col., that was restored in one minute. Another in Kansas City, Mo., who would drop dishes and throw them across the room involuntarily, that two or three sittings cured effectively, and more grateful beings you could scarcely find. Thanks for this marvelous discovery—the bivalve.

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## NEURASTHENIA.

**SYNONYMS.** Spinal irritation; nervous prostration; nervous exhaustion.

**DEFINITION.** A debility of the nervous system, causing an inability or lessened desire to perform or attend to the various duties or occupations of the individual. Professor Bartholow describes it as consisting "essentially in an exaggerated susceptibility to bodily impressions and false reasoning thereon."

**CAUSES.** It may result from various chronic diseases; mental worry or emotion; overwork, as "whenever the expenditure of nerve-force is greater than the daily income, physical bankruptcy sooner or later results." (Jackson.) Neurotic temperament; sexual excesses; alcohol; tobacco.

**SYMPTOMS.** Nervous debility may affect any organ of the body. It is a condition of nerve-tire or exhaustion, and hence the nervous energy necessary for functional activity of any particular organ may be wanting, a fair example being seen in cases of nervous dyspepsia.

One of the earliest manifestations of nervous exhaustion is an irritability or weakness of the mental faculties, as shown by inability to concentrate the thoughts, and efforts to do so causing headache, vertigo, restlessness, fear, a feeling of weariness and depression, together with the array of symptoms attendant on nervousness.

There may be ocular disturbances, cardiac palpitation, coldness of the hands and feet, chilliness followed by flashes of heat, followed in turn by slight sweating. Patients are troubled with insomnia, or fatiguing sleep, accompanied with unpleasant dreams.

In the male there are genito-urinary disorders, with pains in the back, giving the dread of impotence. In females, painful menstruation, ovarian irritation, and irritable uterus.

**DIAGNOSIS.** It is of importance to determine between a true



PLATE LIV.—Raising Chest Muscles and Treating Spine.





nervous exhaustion and nervous debility, the result of organic disease. A study of the history of the case, together with the symptoms, should prevent error.

**PROGNOSIS.** Unless there be a tendency to mental disorders, the prognosis is good.

#### THE TREATMENT.

This condition is remediable, so far as the system in general is concerned, according to the ability to assimilate the lost elements. Arrest in the first place the waste causing it, then supply the elements. This is done in various ways—through direct exhibition per oram, in the form of food. Re-establish the nerve force by properly stimulating arterial peristalsis and capillary activity by the manipulations recommended therefor, the vasomotor area receiving due attention. Vibratory manipulations along the spine, stretching the spinal cord gently, liberating all of the muscles of the body, start up new forces throughout the system. Do not neglect the orifices of the body (the sphincters) in these affections. Stimulate the glandular system. If there is ever a general all-over treatment given, do so in these cases. Manipulate gently but deeply all of the muscles, stimulate the spinal area all the way from cervix to coccyx, as patient is able to bear the treatments—as often as every third day.

Ferrum phos. and Calc. phos. are often indicated. It will appear plausible to a rational being to supply these elements when it is known that certain proportions of the sixteen elements constitute the physical organism, and a deficiency of either one or more causes disturbance in all the rest. The body is not a whole body without the elements of which it is composed, and it requires certain ones to render the rest active and assimilable.

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### EXOPHTHALMIC GOITRE.

**SYNONYMS.** Graves' disease; Basedow's disease.

**DEFINITION.** A disease of the nervous system; characterized by protrusion of the eyeballs, enlargement of the thyroid gland, dilatation of the arteries, and palpitation of the heart.

**CAUSES.** An undemonstrable condition of the nervous system, either inherited or acquired, is the predisposing cause of Graves' disease. Among the exciting causes are anaemia, shock, fright, chagrin, worry, and reverses of fortune.

It is more common in women than in men.

**PATHOLOGICAL ANATOMY.** "Some structural alterations have been found, in a majority of cases, in the sympathetic ganglia, and especially in the inferior ganglia." (Bartholow.) The veins and arteries of the thyroid gland are dilated, the result of a vaso-motor paralysis. The enlargement of the gland is the result of the dilated vessels, and a serous infiltration of its tissues, followed, if long continued, by hypertrophy. A considerable increase of fat behind the eyeballs has been observed. In the majority of cases more or less anaemia exists.

**SYMPTOMS.** The development of the quaternary of symptoms may occur suddenly, the result of some great shock to the nervous system, but in the majority of instances the symptoms develop slowly and insidiously, with cardiac palpitation, with paroxysms of more marked acceleration, tachycardia, the pulse rate varying from 90 to 120, 150, and rarely as high as 200 beats per minute; soon pulsations of the vessels of the neck and thyroid gland may be felt and seen. The enlargement of the thyroid gland—the goitre—appears gradually after the development of the circulatory disturbances, although rarely it may be the first symptom observed. The goitre is elastic, rather soft, and has a thrill similar to an aneurism. The degree of enlargement varies in different cases, and in none ever attains a very great size. Following the development of the goitre occurs the protrusion of the eyeball—the exophthalmos—which may be confined to one eye, but usually occurs in both. Prominence of the eyeball may be the first symptom observed, but usually it does not develop until after the appearance of the goitre. The degree of protrusion varies from a slight staring expression to a point so great that the eyelids can not cover the balls. Associated with the protrusion of the eyeballs is incoordination in the movements of the eyelids and the eyeball, the sign of Graefe, so that when the eyes are quickly cast down the eyelids do not follow them, the sclerotic being visible below the upper lid. Vision is unimpaired. Conjunctivitis may arise, the result of the imperfect protection of the protruding ball by the eyelids.

Associated with the pathognomonic symptoms are nervousness, irritability of temper, headache, insomnia, vertigo, fits of despondency, aphonia, and cough the result of pressure of the goitre, disorders of digestion, increase of temperature, anaemia, and loss of flesh.

**DIAGNOSIS.** The fully developed disease presents no difficulties in diagnosis, but during its incipiency, before the char-

acteristic symptoms have appeared, the disease may be confounded with such conditions as cardiac disease, neurasthenia, lithaemia, malaria, or incipient phthisis.

PROGNOSIS. Recovery occurs in a fair number of cases, but is slow and tedious. The disorders of the circulation lead to dilated heart in many cases, and ultimately death occurs from this cause. Relapses are frequent.

#### THE TREATMENT.

This is another of those affections that manifest motor and sympathetic separation of terminal filaments. This is caused by muscular contraction, so that partial paralysis occurs, or infiltration of blood and lymph in the tissues, separating footlets and producing the incoordination of forces.

The treatment consists in gently extending the neck muscles, with rotary motions of the head, thoroughly manipulating the face and neck muscles, stimulating the vaso-motor area, re-establishing nerve connection between the sympathetic and motor nerves, start the fluids out and regulate the heart's action and arterial circulation. Open the channels—the veins of the thyroid—by the same manipulations as recommended for Goitre. Treat the patient according to indications, as in other affections that complicate this one. Free the obstructions and take off nerve pressure repeatedly, every two or three days, and good results soon begin, and a rapid amelioration ensues.

Enlarged thyroid gland is the simplest thing to cure in our practice, usually.

The engorgement in the recent stages is due to obstruction to the venous blood in the thyroid veins. These may be relieved by raising the clavicle and then manipulating the gland upward, sidewise, and pressing the gland in the various ways that knead the substance of the gland itself, freeing all of the muscles of the neck thoroughly and keeping the clavicles raised. This should be done by the thumb of the operator close to the sternal end of the clavicle, pushing outward as the arm is raised upward and backward in either of the various ways shown in this work; steadily holding the clavicle out for a moment greatly facilitates emptying the venous blood therein. The treatment should be given every other day. Many cases of recent origin are cured very soon. Those of long duration, and that have become indurated, require many months' treatment to effect a cure. The cure of the latter kind will be more easily effected by the aid and the



introduction of the tissue element that has a special affinity for glandular indurations—*Calcarea fluoricum* (6x), three or four grains three times a day. It will be found to be the case with those troubled with goitre that the clavicles are extremely close down to the chest walls, preventing venous return circulation, by pressure of the sternum and the clavicles on the jugulars and other small veins in that region. Take off the pressure, then work the blood out of the gland. The thymus gland does not seem to be involved in goitre. Persons very young are not troubled with goitre; as a rule, those over 12 years old have it.

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### TETANY.

SYNONYMS. Tetanilla; intermittent tetanus.

DEFINITION. A succession of tonic, usually bilateral, painful muscular spasms, occurring at irregular intervals, without loss of consciousness.

CAUSES. It has been observed in those having a family history of nervous disorders.

PATHOLOGY. The disease is very rare in America.

SYMPTOMS. Tetany is the occurrence of intermittent spasms in the muscles of the arms, hands, legs, or feet, or rarely the face and larynx (*laryngismus stridulus*), associated with pain.

The hands are thrown into a position such as they assume in writing, or such as is taken by the hand of a midwife; or the hand may be tightly closed, or one or more fingers may be cramped. The elbows and shoulders may be, at times, affected. In the feet the toes are drawn down and the instep upward, like in equinus. The knees may be cramped or the legs extended. Any muscles may be involved. Trousseau pointed out that in those suffering from tetany, pressure upon the affected extremities at certain points will excite the spasms.

The duration of the spasms varies from a few moments to several hours, the intervals being from an hour to a day or more. A certain periodicity is noticed as to the hour of the day or night.

The electro-contractility is increased, as are also the reflexes. The consciousness is always preserved, although the patients are very nervous.

DIAGNOSIS. Tetanus and tetany may be confounded, and yet trismus is rare in the latter, and always present in the former.

PROGNOSIS. Favorable.

## THE TREATMENT.

The strangest thing we have to contend with in educating the people is to get them out of their old ways of thinking. It does not seem to dawn on the minds of some that any other way of thinking than "our fathers" thought should be permitted! This age has demonstrated a few facts that would be profitable to consider, even those pertaining to the extent of lessening our sufferings, lightening our burdens and expanding the horizon of our zenith intellectually, physically and spiritually.

The old way of treating such cases was to further paralyze the muscular fiber (that which was not affected) in order to procure harmony in such cases as the one under consideration; but now we would lift the pressure off of the already spasmodically paralyzed nervous system and harmonize action that way, without producing a worse condition than found to exist. Truly, "the world do move." The spinal nervous system is at fault in this affection. When righted tetany subsides, as a matter of course. Beginning at the vaso-motor area, we stimulate all along the whole course of the spinal column, then remove pressure from the sympathetic nerve terminals. The measures recommended to re-establish normal tension everywhere in the body should be perfectly familiar to the reader at this juncture, and there should be no difficulty in rightly applying them. Magnesium phosphate introduced in this affection will be found adapted to conditions admirably.

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TETANUS.

SYNONYMS. Lockjaw; trismus; cephalic tetanus.

DEFINITION. An acute or subacute infective disease, characterized by muscular rigidity, with paroxysms of tonic convulsions, the mind remaining clear. Idiopathic tetanus when no open wound is discoverable. Traumatic tetanus when an open wound is present. Tetanus neonatorum when it attacks infants. Lockjaw or trismus when the jaw alone is involved. Cephalic tetanus when the throat and face are affected.

CAUSES. The result of a specific bacillus, which usually gains access to the system through an abrasion.

PATHOLOGICAL ANATOMY. In the post-mortem examinations which have been made, no uniform morbid appearance was discovered, on microscopical examination.

The brain, cord, lungs, and muscles are markedly congested, and show minute hemorrhages, such as are met with in all cases of death from convulsions, and which occur chiefly during the process of death.

In four post-mortem examinations of cases dying from tetanus, at the Philadelphia Hospital, marked chronic nephritis was observed. Probably the future may show some connection between nephritis and tetanus, by which the specific poison is not eliminated as it might be were the kidneys normal.

**SYMPTOMS.** The onset is rather sudden, with stiffness of the jaw, neck, and tongue, and some difficulty in swallowing, which increases in extent, the stiffness passing down the spinal muscles to the legs, which are held in a firm spasm.

Gradually tonic spasms develop, which, involving the jaw muscles, cause "lockjaw"; the face muscles, "risus sardonicus"; neck and trunk muscles, "opisthotonos"; these tonic convulsions are associated with intense pain, and the patient suffers the greatest distress, particularly if the chest muscles are involved. Usually the febrile reaction is slight, but in many cases 102 deg. F. to 104 deg. F. is reached, and in some instances, as death approaches, 108 deg. F. to 110 deg. F. may occur, rising still higher after death. The mind remains clear till carbonic acid poisoning occurs. Usually a wound, not severe, can be found, the symptoms developing some two weeks after its occurrence.

The tonic spasms are developed by any sources of irritation, a draught of air, shaking of the bed or floor, suddenly opening the door of the room, the presence of a visitor, or attempts at speaking or movement.

**DIAGNOSIS.** The symptoms are so characteristic, with the addition of a history of a wound, that an error seems hardly probable.

Tetany in the spasms chiefly affect the extremities, the muscles being free in the interval and trismus a late or very rare condition.

Strychnine poisoning often closely resembles tetanus, but there is no beginning trismus and more rapid development of the symptoms. No history.

Hydrophobia does not have trismus, but respiratory spasm, excited by attempts at swallowing, with increasing mental symptoms.

**PROGNOSIS.** Unfavorable. The great majority die.

## THE TREATMENT.

All forms of tetanus are amenable to Osteopathic treatment, properly applied; but where it is caused by a healed-up wound from a sharp pointed-instrument (a rusty nail or thorn), it will be essential to open the wound afresh, take off the pressure there, and that settles the matter with that case—cures it. All the manipulations that might be made without the means recommended would prove unavailing. The sudden spasmodic characteristics of tetanus indicate pressure on terminal-end sensory filamentous footlets. Certain stages in the circulation of the fluids seem to increase the pressure, and then the spasm supervenes, lasting until the mechanical effort moves off the pressure, and then the spasm ceases. The affection seems to follow wounds of the feet or hands, where numerous tendons, fasciae and small muscular fibers unite, and where terminal nerves are the most pressed upon by movements of structure, hence suggestive of spasmodic action, reflexly.

The treatment should begin at the back of the neck, the vaso-motor area, then extend the neck gently, remove muscular tension in the neck muscles, raise the clavicle, treat all the way down the spine, thoroughly relaxing all of the muscles of the body, removing all venous obstructions everywhere in the body. Avoid mental excitement as much as possible. Give general treatments once or twice daily, if indicated. Remember the reflexes and terminal nerve filaments in the sphincters.

## OCCUPATION NEUROSES.

**SYNONYMS.** Professional neuroses; artisans' cramp.

**VARIETIES.** Writers' cramp; piano-players' cramp; telegraphists' cramp; violin-players' cramp; dancers' cramp.

**DEFINITION.** A group of affections of the nervous system, characterized by the occurrence of spasm (cramp) and pain in groups of muscles, in consequence of overuse or frequently repeated muscular acts.

**CAUSE.** Undetermined. It has been noticed that many persons suffering from occupation neuroses have a family history of nervous affections.

**SYMPTOMS.** The symptoms of any of the varieties named generally develop gradually and slowly, by a feeling of stiffness in the used member, the part feels fatigued and heavy, until it is



impossible to use it, from the occurrence of spasmodic contractions; pain on using the affected muscles, often associated with tremor, and in many cases with an actual paralysis. Associated with the loss of power to follow the usual occupation are nervousness, mental worry, and often depression. There is often the sensation of prickling and numbness in the crippled member.

The electro-contractility is preserved until the atrophy of non-use develops.

**DIAGNOSIS.** Calling to mind the history of the case and its results, in being limited to one member, the nature of the condition is evident.

**PROGNOSIS.** Often unfavorable. Some recoveries are reported.

#### THE TREATMENT.

The neck muscles, the cervical ganglia, and down to the middle of the dorsum should be treated, stimulating the brachial area thoroughly, profoundly, several times. The vibratory manipulation of the muscular system over the upper chest, shoulders and neck and back, and raising the clavicles, arms, ribs, etc., attended to in their order, as directed elsewhere for general and special effects, every day or two, and a cure is to be expected in a short time. A change in the manner of holding the pen, brush or instrument, if practicable, will be well to consider.

Our position is that all kinds of paralysis is due to direct pressure at the origin of, or along the line of the nerve supplying tissue or muscle. The nervous system that originates motion comes out of vertebral foramina, and is distributed to every part of the body. Many obstructions are to be found at their exit from these foramina, through muscular contracture, and that removed cures the difficulty. A constant pressure eventually results in permanent paralysis, sometimes denominated "progressive paralysis."

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#### PARALYSIS AGITANS.

**SYNONYMS.** Shaking palsy; Parkinson's disease.

**DEFINITION.** A nervous disease of unknown pathology, characterized by tremors, progressive loss of power in the affected muscles, moderate rigidity, with alterations in the gait and at times mental changes.



PLATE LV.—Knee-Chest Expansion Process.



**CAUSE.** Age seems to be an etiological factor, most cases developing after fifty years. Most frequent in women.

**PATHOLOGICAL ANATOMY.** No characteristic lesion yet determined. It being a disease of past middle life, there is probably an interstitial hyperplasia of some layer of the cortex, from alterations in the intima of the vessels.

**SYMPTOMS.** The onset is gradual, the tremor beginning in one of the extremities, oftenest the hand and forearm. At first it can be controlled by the will, for a time at least, and is suspended by voluntary movement. The disease gradually extends until an entire side or the upper or lower limbs are involved. The face and head rarely present tremors, but are not exempt. A peculiar rigidity of the affected muscles is characteristic of the advanced stage. "At this stage of the disease the hands are apt to assume the so-called bread-crumbling position, *i. e.*, the thumb and the fingers approximate and move restlessly over one another, as in the act of crumbling bread. There is often a tendency on the patient's part to go forward—so-called propulsion—and this is sometimes so marked that if the patient is once started in a walk forward, his gait becomes more and more rapid, and he can not stop himself." (Gray.) The patients are usually restless and annoyed with insomnia. The general health is fair. The mind is generally retained, although melancholia and mild dementia have been noted in a few cases.

**DIAGNOSIS.** Disseminated sclerosis has a tremor, but only on volutary movements—intention tremor. There are also scanning speech and ataxic gait, with mental enfeeblement, as shown by an unnatural contentment with physical condition and surroundings.

Chorea is a tremor, but the movements are general, and particularly involving the muscles of the face. Again, chorea is a disease of children and young adults.

**PROGNOSIS.** Radical cure not seen. Improvement often results from early treatment. The disease does not tend to shorten life.

#### THE TREATMENT.

The general treatment, restoring normal circulation, is the proper thing, and many cases are greatly benefited and cured if treatment is had in the early stages. The motor nerves are at fault, and are to be reached through the spinal column. Treat the whole length of the spine and restore normal circulation.



## MENTAL DISEASES.

### MELANCHOLIA.

**SYNONYMS.** Depression of spirits; psychalgia.

**DEFINITION.** A variety of mental alienation, characterized by more or less profound depression of the emotions, with either no marked intellectual disturbance, or the presence of more or less incoherence, and the association of hallucinations and delusions. The cerebral mechanism developing a condition of supersensitiveness, all impressions are exaggerated, and a state of abnormal self-consciousness existing.

**VARIETIES.** Melancholia simplex; melancholia hallucinatory; melancholia agitata; melancholia attonita; chronic melancholia.

**CAUSES.** Hereditary predisposition. Failing health. Grief. Domestic and financial worries. Neurasthenia. Menstrual irregularities, pregnancy, childbirth, or lactation. Climacteric. Gastric and intestinal irregularities. Alcoholic and sexual excesses. Organic brain diseases. Religion rarely causes insanity, though it frequently gives color to it. Most common in females and in the young.

**PATHOLOGY.** The alterations in the nerve structure, underlying an attack of melancholia, are undetermined. Anaemia and sluggish nervous energy are constant phenomena, but are hardly the only conditions disturbing the cortex.

**SYMPTOMS.** Melancholia may be the initial stage of mania, delusional insanity, or parietic dementia, or a stage of *folie circulaire*.

**Mental.**—The cardinal condition is a feeling of depression, misery, or mental anguish or pain, for which no adequate cause exists. The onset is usually gradual, with a disposition to neglect duties and self, the patient worrying over a something they can not explain. The world is dark and gloomy, with a foreboding of some awful calamity that is to affect or wreck the patient or his family. Suspicion, distrust, and often fear of wife, children, relatives, or friends. Insomnia is a constant and stubborn symptom. The memory is maintained, and the reasoning faculties are usually intact, except upon the painful sensations.

The patient may sit quietly or be restless, according to the character of the emotions affected.

Physical.—The patient presents either an anxious or a woe-begone expression. Headache, and particularly a post-cervical ache, is a very constant symptom. The skin is dry and harsh, the respirations superficial, the cardiac action slow and feeble; there are gastric catarrh, constipation, and scanty, high-colored urine. The tongue is flabby and coated, and the appetite is poor. The refusal to take food is most characteristic.

Hallucinatory melancholia is an aggravated form of the disease, where, in addition to the painful mental reflexes, are distressing hallucinations and illusions, the patient living in a realm of terror. The attack may be the result of a delusion, but much more frequently the depression and foreboding give rise to the delusion. The delusions of melancholia are usually of self-accusation, self-abasement, and justified persecution; the patient feels that he is being punished for some transgression, imaginary or otherwise.

Melancholia agitata are those sad cases seen in continual agitations, in which the fearful and distressful thoughts and imaginations cause wringing of the hands, and prayers beseeching help, with tears flowing down their cheeks, crying out for assistance and protection. Incoherence and violent impulses are frequent.

Melancholia attonita, or melancholia with stupor, the patients seeming to be overwhelmed, sitting mute, motionless, and expressionless, refusing to assist themselves in any way whatever, often requiring mechanical feeding. Memory is usually impaired in this form; attacks of violence may occur.

Chronic melancholia is the continuation of the depression over a long period, the individual living in the fear of impending danger or punishment for supposed acts for months, often with apparent lucid periods.

Suicidal impulses are present in a fair proportion of cases of melancholia, and unless there be everlasting vigilance the patient will succeed in his insane desire.

DIAGNOSIS. The cases of simple melancholia are readily determined. Melancholia agitata is frequently mistaken for acute mania. Melancholia attonita closely resembles acute dementia, a condition, it is but fair to mention, many alienists deny the existence of.

PROGNOSIS. A typical attack of melancholia runs a definite

course, not unlike the typical course of a fever. Favorable in the mild cases of all forms not associated with organic disease, and who have not reached the climacteric. Pronounced cases of melancholia attonita are more apt to terminate in dementia than any other variety.

#### THE TREATMENT

In these cases there will seldom be found any changes in the nerve structure. The incoordination of mental action is the result of the improper assimilation of the elements, lack of motor nerve force to execute orders from the sympathetic, hence lack of proper capillary circulation, and a diminution of normal supply for the nerves or brain. Trouble in spine—twelfth dorsal.

There is no continuity of force when neurine is not furnished to direct the thought. Every element must be contained in the blood, and this blood must permeate every tissue, and it must have special nerve force executed along the lines and in ganglia where nerve substance is supplied from the blood in order to furnish the particular elements used in the manufacture of neurine. The importance of the unobstructed circulation of the fluids of the body becomes more impressively apparent the more we are permitted to see into the structure itself. Mind is the product, the result of divine creation, and there are certain processes that seem to be essential to its establishment, as well as continuance of action in any sense, and in this case normal sense.

The lifting off of the pressure throughout every part of the body impresses itself upon our mind as the essential thing to do, whether we find it in a contracted sphincter, or at the farthest confines of the sympathetic nerve filamentous structure. Repeat the process until cured. Osteopathy stands in the front ranks of remedial agencies.

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#### MANIA.

SYNONYMS. Insanity; madness.

DEFINITION. An intense mental exaltation, with great excitement, loss of self-control, with, at times, absolute incoherence of speech, and loss of consciousness and memory. (Clouston.)

A mental condition in which there is an emotional exaltation, accompanied by illusions, hallucinations, delusions, great mental and physical excitement, and a complete loss of the inhib-

itory power of the will; in acute cases, and frequently in chronic forms of the disease, there is marked destructiveness and tendency to violence. (Wood.)

An attack of mania may be acute, subacute, or chronic.

CAUSES. Inflammation or other organic disease of the brain or its membranes. Mental shock or strain. Worry—domestic, moral, or financial. Excesses in alcohol, venery, or tobacco. Ovarian disease, or menstrual irregularities. Climacteric in those of nervous disposition. Pregnancy, parturition, or lactation. Nephritis. Anaemia. Syphilis. Hereditary predisposition.

PATHOLOGY. There are no constant morbid changes associated with mania. In all varieties of acute insanity there exists vitiated nervous energy or impaired vitality, the result of over-excitement or over-stimulation, motor disturbance, or auto-infection, the result of the imperfect elimination of the products of tissue waste. "There is no reason why a mere dynamical brain disturbance should not kill and leave no structural trace, any more than that it should for months abolish judgment, affection, and memory, and then pass off and leave the brain and all its functions intact." (Clouston.)

If death follow acute symptoms, the vessels of the brain and membranes are engorged, but in the majority of instances the brain structure is normal.

If death occur in chronic mania, the most frequent change found will be a thickened and adherent dura mater. As observed, any form of organic change may be found post-mortem in those dying of any form of mania.

SYMPTOMS. Acute Mania.—The onset may be abrupt, or following a period of emotional depression, associated with lassitude, feeling of unrest, disinclination to work, and disorders of the gastro-intestinal canal, with insomnia and an introspection; these symptoms are termed the melancholic stage of mania.

The maniacal stage is characterized by loud talking, intense egotism, violent motions of the limbs and body, great restlessness, and excitement; the thoughts flow in wonderful freedom and with amazing rapidity, the condition often resembling the symptoms of early alcoholic intoxication; as the condition continues the patient becomes either sullen, irritable, and angry, offering violence to those around him, or he becomes garrulous, talking of his personal affairs, is confidential and communicative to strangers, often making egotistic offers, passing frequently into



incoherence of language and action. Sexual passions are frequently exalted, and acts of masturbation practiced. Delusions are an almost constant symptom, of a superficial or transitory character, changing with every new appearing mood. The maniacal patient is sleepless, or may have short naps, at once continuing his chatter on awakening.

Any attack may show all of the symptoms mentioned, or any one or more of them, but the great majority of cases show intense egotism, loud talking, violent motion of limbs or body, hurry, excitement, insomnia, incoherence, and incessant noise.

The course of an attack is periods of remissions and exacerbations, with nocturnal crises; loss of flesh and mental weakness are often marked as the attack progresses.

Acute delirious mania, typhomania, is a psychosis of sudden onset, attended with increased bodily temperature, and marked by delirium with sensuous hallucinations, marked incoherence, restlessness, refusal of food, loss of memory, and rapid bodily wasting, terminating frequently in death.

Mania amenorrhoeal is applied to attacks of mania occurring at the menstrual epoch. Homicidal, suicidal, and various hysterical impulses are frequent.

Mania-a-potu is an attack of acute delirium, due to alcoholic excesses in those engaged in a sudden debauch, or who have drunk heavily and eaten little, for a comparatively short period.

Mania asthenic, in which there is a general anaemia associated with neurasthenic symptoms.

Mania Chronic.—A condition of continual mental exaltation, the acute symptoms having continued in a chronic course. The line that distinguishes between an acute and chronic mania must always be somewhat arbitrary and unscientific. The duration of the mania beyond twelve months is usually considered sufficient to determine the condition, and this is well, as it precludes the possibility of terming the condition incurable. If the term chronic mania was restricted to those cases in which, between the exacerbations of restlessness, excitement and destructiveness, were evidences of dementia, less confusion would occur.

Mania dancing is a hysterical mental state in which, through sympathy and imitation, dancing of a most grotesque and extravagant character occurs. Usually epidemic.

Mania delusional is the result of fixed delusions, either causing or associated with the maniacal outbreak.

Mania erotic, erotomania, presents systematized delusions of an erotic character, not necessarily accompanied by animal sexual desire. Nymphomania is a morbid, irresistible impulse to satisfy the sexual appetite, peculiar to the female sex.

Mania epileptica follows an epileptic paroxysm, and is often of a most violent kind, the maniacal acts being of the most treacherous and malicious character.

Mania hallucinatoria presents visual, auditory, olfactory, and other sense hallucinations.

Mania homicidal is any variety of mental disease in which there is a desire or an attempt on the part of the patient to commit murder. The condition may be the result of delusions that the persons attacked either are persecuting, or going to kill the patient, or of the excessive excitement that vents itself in destructiveness, combativeness, or desire to kill, or there may be a morbid desire, impulse, or craving to do murder, or the homicidal act may be unconsciously done during an acute delirium, or a paretic, or epileptic maniacal impulse.

Morphiomania is the insane craving for the stimulating action of morphia—a moral insanity.

Mania puerperal is the maniacal outbreak as seen in the puerperal woman. This is now thought to be of septic origin, although the mental strain through which the female has been passing is a predisposing factor.

Mania recurrent, or chronic mania, with lucid intervals of longer or shorter duration. Generally of alcoholic origin.

Mania transitoria, or ephemeral mania, is a rare form of maniacal excitement of sudden onset, violent and decided in character, accompanied by great insomnia, incoherence, and more or less complete unconsciousness of familiar surroundings. The attack as suddenly terminates, the duration being from a few hours to a few days.

Mania senile is the mental exaltation occurring in persons with senile arterial changes, or senile cerebral atrophy. Soon followed by dementia.

A maniacal outbreak may present any one or a number of the varieties named.

**TERMINATIONS OF MANIA.** About fifty per centum of acute manias, not due to organic disease, recover after periods varying from one month to several years. A fair proportion of cases make a partial recovery, and are able to return to their work, but always showing some alteration in character or affection, or

some eccentricity, or a slight mental weakness. About twenty per centum of cases terminate in dementia or mental death, and this is always the fear in each case. Two per centum of cases die, either the result of exhaustion or from the organic condition causing or associated with the attack.

**PROGNOSIS.** The question of recovery, partial or complete, is always difficult to determine, depending upon the cause, temperament, disposition, education, nationality and the normal mentality of the individual. Recovery is usually gradual; rarely sudden restoration occurs.

Favorable indications are: sudden onset, short duration, youth of patient, absence of fixed delusions, good appetite, increasing hours of sleep, moderate or no increase in temperature, pulse, and respiration; no evidences of mental weakness, no paralysis or alteration of pupils or articulation, no epilepsy, no unconsciousness to the calls of nature, and no former attacks. Unfavorable indications are the opposite of these, and also the presence of organic brain disease, or a strong hereditary tendency, or the possession of an excitable disposition; or nervous diathesis.

#### THE TREATMENT.

The Osteopathic experience along this line of pathology is somewhat limited, for there has been a peculiarly characteristic dearth in thought manifest, and the intense egotism of most of those who have heretofore studied the science has debarred the investigation of other and more salutary measures. The taxation of mental genius to discover a universal panacea for these conditions is hardly probable; and even if it were known, the obtuseness of mentality of those who claim to be and are recognized as sane precludes adoption. Madness is kaleidoscopic in manifestations.

Inharmony is apparent. The harmony is severed. How? The inequality originates from overstimulation of the nerve centers, or nerve terminals. Reflex action intensified or aborted accounts for the results. Mental suggestion under peculiar circumstances produces "mother's markings." Why not suggestions peripheral, from an undue pressure on the terminal nerve filaments, exercise an influence that culminates in intense manifestation of abnormality?

The experiments of Orificial surgeons demonstrate what we have said, and our own observation approbates their recorded conclusions. The genital organs, including the lower outlets,



PLATE LVI.—Side of Neck and Shoulder Treatment.





sphincter muscles, will be found to exercise marvelous influences in a large percentage of cases of mania, and these properly attended to, will greatly lessen the number of victims and cure cases abandoned by other methods, and by specialists and experts on nervous diseases. We have seen and treated persons, wild and insane, successfully by Orificial means, that manipulations Osteopathically were inadequate to modify even. Whether we invite the censure of Osteopathic practitioners or not, in our approval of means not recognized as Osteopathic (but really carrying out the principle), we shall take the liberty to recommend Orificial Surgery wherever indicated, and as a "twin sister" to Osteopathy, and worthy the most rigid scrutiny, profoundest investigation and our heartiest approval, when intelligently applied.

The general and special manipulations to remove obstructions, take off the pressure, establish nerve force, and coordinate the system with itself, demand our wisest consideration. Life is far too precious and too short to while it away in egotistic expostulation or denunciation of the means that relieve mankind, from whatever source derivable, or where found, or by whom discovered. Hemaspasia should not be lost sight of for lessening the blood pressure in the brain, when necessary. Hypnotic suggestion is remarkably effective in many mental states, changing the whole life at once.

Epileptic Insanity comes under the above treatment, and may be greatly modified thereby, persistently applied, generally and locally, as indicated.

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### EPILEPTIC INSANITY.

**DEFINITION.** A mental condition caused by or the result of epilepsy.

**CAUSES.** The careful study of the brain of those dying having epileptic insanity has failed to determine why some epileptics suffer from any of the insanities and others have their normal mentality, and another group are better after a convulsion.

**VARIETIES.** Pre-epileptic mania; post-epileptic mania; dementia epileptica; imbecility with epilepsy.

**SYMPTOMS.** The mental changes constituting epileptic

insanity, save in the cases of epilepsy with imbecility or idiocy, develop after some years of the ordinary epileptic paroxysms.

Pre-epileptic mania has attacks of mania some days or hours preceding the epileptic convulsion. The patient is morose, irritable, and threatening, often making homicidal attacks on those around him, be they friends or foes. Rarely the epileptic seizure is replaced by various insane, or so-called hysterical acts, as fits of dancing, laughing, crying, screaming, swearing, or scolding.

Post-epileptic mania follows the epileptic paroxysm, either taking the place of the comatose state or following after it. The maniacal acts during these outbreaks are often of the most desperate and impulsive character, many an asylum physician and attendant carrying scars, the result of attacks of post-epileptic maniacs.

Epileptic dementia is the terminal mental obliquity resulting in about thirty per centum of insane epileptics, who do not succumb before to nephritis or tuberculosis.

Epileptic imbecility is a congenital condition in which the two conditions are associated.

**PROGNOSIS.** The great majority of cases of epileptic insanity develop, sooner or later, either nephritis or tuberculosis. Recovery from epileptic mania is a rare occurrence. Thirty per centum of epileptic maniacs progress to dementia in from five to ten years.

**TREATMENT.** Apply the general treatment. Intensify locally—along cervex and spine.

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## CIRCULAR INSANITY.

**SYNONYM.** Folie circulaire.

**DEFINITION.** A mental disease characterized by regularly alternating and recurring periods of mental exaltation, depression, and sanity.

**CAUSES.** Hereditary predisposition. The exciting causes are any of those conditions which depress the brain or general system.

**PATHOLOGY.** There is no characteristic lesion associated with circular insanity.

**SYMPTOMS.** Essentially a chronic condition and probably incurable. The disease usually begins as a melancholia, the depression being an apathy and torpor rather than a mental pain;

and suicidal feelings and impulses are rare; this condition is soon succeeded by a mania, a mental exaltation, with hyperaesthesia and exaggeration of nervous functions, the reasoning power well retained; this is in turn followed by a lucid interval, often giving promise of recovery, to be sooner or later followed by another cycle. These periods follow each other with remarkable regularity, each being of the same duration. Rarely the various periods are of irregular duration.

The general health is well maintained, the patient gaining in flesh during the stages of depression and lucidity and losing during the period of exaltation.

**DIAGNOSIS.** The regularity of the different periods soon establishes the diagnosis.

**PROGNOSIS.** Generally incurable.

**TREATMENT.** See treatment for Mania.

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### KATATONIA.

**SYNONYMS.** Alternating insanity; Kahlbaum's insanity.

**DEFINITION.** A mental disease, characterized by irregular cyclical symptoms, ranging from melancholia to mania, followed by stupidity and confusion, with cataleptoid phenomena, followed by lucidity for a time, recovery, or passing to a dementia.

**CAUSES.** Hereditary predisposition. The exciting causes are usually the result of some excess. Rarely associated with organic brain disease.

**PATHOLOGY.** No characteristic lesions have been found associated with katatonia.

**SYMPTOMS.** A typical case begins as a melancholia, the mental depression, uneasiness, and distress followed after a variable period by mania, associated with hallucinations and delusions. This period is followed in turn by a condition of attonita, or rigidity and immobility, or a cataleptoid paroxysm; any of the stages may be followed by confusional symptoms, or a true dementia may develop. During the maniacal stage there is a tendency, in many cases, to histrionic and sermon-like declamation, or the speech may be of the verbigeration character—that noisy, incoherent, and meaningless speech seen in many manias, composed largely of the constant repetition of a few words or phrases. During the stage of attonita the presence of the so-called mutism or mutacismus, “a pathological tendency to be



silent," may continue for days, weeks, or months, or it may be interrupted by periods of verbigeration.

The immobility or rigidity so characteristic of a period of katatonia is frequently alternated with automatic, incessant, and monotonous movements—the stereotyped movements.

Patients suffering from katatonia often refuse food for days at a time and then suddenly present symptoms of boulimia. Vaso-motor and trophic changes are frequent, one of the most constant being cyanosis of the hands and other peripheral parts. Haematoma auris, insane ear, or perichondritis auriculæ, is frequent. Epileptiform attacks may usher in the disease or occur during any of its stages.

**DIAGNOSIS.** It may be diagnosed as melancholia, mania, or a dementia, depending upon which of the cycles be first observed, but after being under observation long enough to observe a complete cycle, the diagnosis is readily determined. Katatonia differs from circular insanity in the absence of a genuine lucid interval, and the presence of the stage of attonita and catalepsy.

**PROGNOSIS.** The disease may continue for a number of years and recovery follow, but as a rule the prognosis is unfavorable.

**TREATMENT.** See treatment for Mania.

## DELUSIONAL INSANITY.

**SYNONYMS.** Delusional mania; delusional melancholia; primary delusional insanity.

**DEFINITION.** A mental state, with fixed or partly systematized delusions, associated with either brain exaltation or excitement without maniacal acts, or a mental depression, minus the somatic symptoms of melancholia.

"An insane delusion is a belief in something that would be incredible to sane people of the same class, education, or race as the person who expresses it, this resulting from diseased working of the brain convolutions."

**CAUSES.** Cerebral and bodily exhaustion, the result of overwork, neglect of personal hygiene, or alcoholic, tobacco, drug, or sexual excesses—a neurasthenia. Impairment of the nervous centers, the result of fevers or shock. Climacteric period, worry, and insufficient food.

**PATHOLOGY.** Delusional insanity is a subacute, or chronic

condition; death seldom occurring, and when it does is the result of an intercurrent physical malady. In the few such cases in which post-mortem examinations have been made, the vessels of the brain were found torpid or dilated—a vaso-motor paresis causing an imperfect cerebral circulation.

**SYMPTOMS.** Either following an attack of acute mania or melancholia, but more commonly without either of these conditions, occurs a set delusion or delusions, which, to the patient, are so real that no amount of argument can dispel his or her belief. These cases are often classed as manias or melancholias, but, as they do not run the ordinary course of either of these conditions, they are best classed clinically by themselves. The acuteness or subacuteness of the attack distinguishes them from paranoia. The majority of the delusions are of an egotistical character, but lack the conduct or appearance of the position due to the character of the delusion. A patient with ragged clothing will assure you that he is worth millions, and yet sees nothing inconsistent between his delusion and his personal appearance.

**DIAGNOSIS.** Delusional mania and delusional melancholia are confounded with delusional insanity, the points of distinction being the absence of severe maniacal and melancholic acts; the patient simply possesses his insane delusion and may never refer to it unless questioned. Paranoia or monomania and delusional insanity have many symptoms in common, but in the former, if the patient believes he is Christ, he wishes to be so respected, and considers himself wronged if not so treated, while the delusional patient will say he is Christ and immediately drop the subject. There are, however, many border-land cases in which the diagnosis is difficult.

**PROGNOSIS.** Recovery the rule, although the delusions may exist for a number of years. Many patients who make a complete recovery will still believe that their delusions were facts.

**TREATMENT.** See treatment for Mania.

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## PARANOIA.

**SYNONYMS.** Monomania; chronic delusional insanity; reasoning mania; verruecktheit.

**DEFINITION.** A chronic mental disease characterized by fixed logical or systematized delusions of persecution, unseen or impossible agencies, or of self-exaltation, the emotions and mem-

ory being only paroxysmally defective, while, however, the life of the individual is dominated by the delusions.

The term paranoia, as it is now commonly used, to cover a group of insanities which are degenerative in origin, chronic in course, and characterized by systematized delusions, with little impairment of the emotional faculties, is not generally accepted as a synonym for monomania.

**CAUSES.** There is generally a hereditary predisposition to insanity in monomania or paranoia. The exciting cause may be the result of an acute mania or melancholia, or the result of alcoholism, or the result of malnutrition in those who have had a struggle to keep their position in the world. Extreme worry in individuals, with mental instability. Following primary or acute delusional insanity.

**SYMPTOMS.** The course of monomania is essentially chronic, the delusions becoming perfectly fixed and unchanging upon one particular subject or set of subjects, which in turn dominate the life of the individual. The most common character of these systematized delusions are, delusions of persecution or suspicion, delusions of exaltation or of pride, and delusions of unseen agents or influences.

The range these assume are most wide and varied, but always associated with the ego. The patient is being persecuted not because, as in melancholia, he has committed some sin, or thinks he has, and deserves punishment, but because the persecutors wish to deprive him of his rights, titles, or estate, or degrade him or in some way injure him.

**DIAGNOSIS.** In the diagnosis of monomania there are three points to ever keep in mind: first, the duration; the fixed, systematized delusions must have existed for over one year; second, the absence of symptoms of mania or melancholia; and third, the presence of systematized delusions affecting the personnel of the individual.

**PROGNOSIS.** Monomania is an incurable disease. Unless tuberculosis develop within a few years, dementia results.

**TREATMENT.** Symptomatic, and all means that promote constructive metamorphosis. Suggestive therapeutics. See treatment for Mania.

## DEMENTIA.

SYNONYM. Acquired feeble-mindedness.

DEFINITION. A progressive general weakening of the mind, characterized by a loss of reasoning capacity, a diminution of feeling, a weakened volitional and inhibitory power, failure of memory, associated with lack of the power of attention, interest, and curiosity, in varying degrees, in an individual who at one time possessed these mental qualities.

FORMS. Dementia acute; dementia alcoholic; dementia apoplectica; dementia choreica; dementia chronic, or secondary; dementia epileptica; dementia organic; dementia paralytica; dementia partial; dementia primary; dementia secondary, sequential, or chronic; dementia senilis; dementia syphilitica; dementia toxica.

CAUSES. Deficient or feeble mental inheritance; age; atheroma; following mania, melancholia, paranoia, and other forms of insanity; the result of organic brain conditions; alcoholism; syphilis; developmental changes; climacteric.

PATHOLOGY. In acute dementia the changes are dynamic. In the primary dementia there is probably atrophy of certain cells from overstimulation, the tissues being normally deficient. In secondary dementia the chief changes are, "alteration in the size of the vessels, owing to thickening and distention, the thickening being most marked in the deep layers, and in the walls of the vessels are fatty granules and haematoidin. The perivascular canals are enlarged. The changes in the cells may be described as deficiency in the number of pyramidal cells, and a want of distinctness of outline and branches, the nuclei being larger, but changed in form, and only capable of slight carmine staining." In senile dementia there is general atrophy and degeneration of all the tissues of the brain.

SYMPTOMS. The onset, extent, and variety of the impaired mentality differ greatly. In some patients the evidences of the failing mind are seen with the subsidence of the mania, melancholia, or other insanity, or soon after the development of the particular cause, while in another group of cases the development is slow and insidious. The difference in the intensity is marked; in one case the changes being scarcely noticeable, the patient being simply less active than before, showing a slight indifference to his environment, while in others the patients remain for hours alone, making no effort at movement and with little or no expression of the face, while another class of cases are



oblivious to the demands for food or drink, or the calls of nature, existing "in the darkness of perpetual intellectual and moral night." Between these symptoms are all varieties and degrees of mental enfeeblement. The physical symptoms of dementia vary with the particular cases, many enjoying the best of health, eating and sleeping well, while others are always unwell, first one organ and then another, while another group suffer from chronic diarrhoea, which finally causes death. Dementia patients seem predisposed to tuberculosis, nephritis, and apoplexy.

Acute dementia, or "stupor with dementia," is to be distinguished from "stupor with melancholia." The onset is rather sudden, with or without mania or melancholia, after some brain or bodily exhaustion, shock, or fright; the patient, a young person, "is horror-stricken, paralyzed in mind, not merely deranged, not depressed or excited, but deprived of feeling and intellect; his movements, if there be any, are automatic, but frequently he is motionless, standing or sitting, staring at vacancy for hours and days." (Blandford.) These patients will not converse, and do not reply to questions, or but slowly, and in monosyllables, and their faces have a blank expression.

Dementia alcoholic, the mental weakness resulting from excessive use of alcohol. Inebriety is a form of dementia, there existing an uncontrollable alcoholic habit, with weakened or absent will power, and impaired mentality.

Dementia apoplectica, an organic or terminal dementia, due to the cerebral changes sometimes following a severe apoplectic seizure.

Dementia choreica is a feeble-mindedness associated with chronic chorea, or, in some cases, probably the result of chorea.

Dementia chronic is the designation applied to all forms of dementia that have existed after one or more years.

Dementia epileptica is the slow mental impairment resulting from long-continued and frequently occurring epileptic convulsions.

Dementia organic, the mental deterioration resulting from gross organic brain lesions, such as sclerosis, tumor, embolism, or trauma.

Dementia paralytica is a synonym for general paralysis of the insane.

Dementia partial is an incomplete form of dementia, in which the mental enfeeblement is associated with such a degree



PLATE LVII.—To Raise Clavicle, Arm Leverage.



of intelligence and memory that the qualifying term "partial" is correct.

Dementia primary is seen most frequently in the young, developing slowly and insidiously, without any symptoms of mania or melancholia, usually in a youth who has given promise of a bright future, by a slowly progressive indifference to his former occupation, studies, or surroundings, with developing carelessness and negligence of person and proprieties, no amount of external stimulus serving to rouse the receding mentality, until finally the downward course ends in dementia so decided that, but for the history of the individual, the case would be classed as congenital.

Dementia secondary, sequential, or chronic, is the most common variety of mental impairment following mania, melancholia, and other insanities. According to Bevan Lewis, twenty per centum of manias, and fifteen per centum of melancholias, become permanent dements.

Dementia senilis, the result of cerebral atrophy, with its consequent failing mental power. Loss of memory for recent events is one of the most common symptoms. The disease often begins as a senile mania, melancholia, or delusional insanity.

Dementia syphilitica is the feeble-mindedness resulting from cerebral syphilis. This group of patients are always sanguine and assert they are "all right," "never sick in my life," and yet unable to assist or care for themselves.

Dementia toxica is the mental failure produced by the long-continued and excessive use of opium, cocaine, and chloral. Chronic plumbism is also given as a cause.

**DIAGNOSIS.** Acute dementia is often misnamed melancholia with stupor, but if the patient is in the teens the probabilities are that it is a case of the former, while if past forty it is almost certainly the latter.

The distinction between dementia and idiocy or imbecility must always be determined. Esquirol's graphic description is well worth remembering: "The dement was a rich man who has become poor; the idiot, on the contrary, has always been in a state of want and misery."

**PROGNOSIS.** Acute dementia is generally favorable. All other varieties are incurable. The average lifetime of dements is placed at about twelve years, the great majority dying of tuberculosis, nephritis, or apoplexy.

**TREATMENT.** See treatment for Mania.



The remarks under the head of Mania apply sometimes very forcibly to the various stages of insanity. Whatever name is applied, or however peculiar the manifestations, there is but one cause in our opinion for the whole trouble—impeded circulation. In the oncoming ages posterity will discover that man is a Cosmos, and that within his body the elements of the universe preside, and a disturbance of the elements changes the character most wonderfully, producing incoordination mentally as well as physically. Obstructions to communicating nerve tubules disturb forces, and these are made to exercise themselves in various ways. The mind is controlled according to suggestions, and the character of these suggestions governs the results. Mind travels through the nerve tubules as electricity traverses the electric wires, they being the media of communication; and when the wires are crossed confusion reigns. The same thing occurs when undue pressure prevails anywhere along the line, and as there are but two things causing the incoordination, to-wit: muscular contraction or blood stasis, the indications become apparent. Restore the nerve force or lessen the contracture, or both, if they exist. This sort of treatment persistently applied promises all that can be expected.

There are many things to consider in treating persons afflicted with mental troubles—from the hereditary origin to the exciting cause, whatever it may be. Judgment must be exercised in all of the cases presenting themselves for treatment. Some "sin" lies at the door as a cause. Transgression of a human or a divine law stands up before the victim, speaking in unmistakable tones that an enemy has done this. Evil habits must be corrected, the effects of them met and neutralized; present physical conditions corrected, and a new life started and lived; environments changed; the pressure taken off and kept off; new tissues permitted to take the place of the old, worn-out material; new thoughts, if possible, formed, maintained; dormant forces aroused, and new suggestions given to start new channels of thought and habits.

General Osteopathic treatment should be given as often as three times a week, and these should be as thorough as possible, arousing every nerve and liberating every pressure in the body.

Orificial Surgery and Suggestive Therapeutics occupy a prominent place in such cases, and are needed in a great many cases. Dementia may be arrested many times by changing the environments, the influences, and starting up a new life of hope;

and expectation and desire will strengthen the hope and make it the governing principle in due time, culminating in love, the promoter of all life and happiness.

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## GENERAL PARALYSIS.

**SYNONYMS.** Paralytic dementia; general paresis; general paralysis of the insane; dementia paralytica; paresis; paretic dementia.

**DEFINITION.** A subacute, or chronic, degenerative disease of the brain, sometimes involving the spinal cord; characterized by alterations in the intellectual and moral character, with the development of unsystematized ideas of self-importance, or delusions of grandeur, finally merging into dementia (preceded by either a mania or a melancholia), and the gradual development of tremor, slurring speech, pupillary changes, ataxia, trophic changes, and finally paresis.

**CAUSES.** General paralysis occurs chiefly between thirty and fifty-five years of age, and in the male more frequently than in the female. It usually affects the robust, middle-aged individual, rapidly destroying all intelligence and judgment, leaving him to exist, often for months, as a demented human automaton.

**Predisposing Causes.**—Hereditary; an ambitious overstraining for prominence, learning, or wealth; forced intellectual activity in those with imperfect or improper early training; cranial injuries; atheroma.

**Exciting Causes.**—Alcoholic and sexual excesses; syphilis; mental and physical overstrain; worry. "In many cases I think the middle-aged general paralytic is suffering for the sins of his youth." (Clouston.) "General paralysis is not a penalty of high cerebral development, but the expression of a discrepancy—an inadequacy of some brains to sustain the strain to which the race, as a whole, is subjected." (Spitzka.)

**PATHOLOGICAL ANATOMY.** A condensed description of the pathological basis of general paralysis is difficult. It may be described as a chronic diffuse cortical encephalitis. The microscopical changes in the cortex, according to Mendel, as quoted by Folsom, are as follows:

1. Increase of nuclei and new cell formation, some nuclei small, some large, and with such varying reactions to coloring agents as to suggest dissimilarity of origin. The stellate or

“spider” cells are increased in the upper layer of the cortex, where some may be normally found, and extend to lower layers, as is not the case in normal brains; they, too, may be several times the usual size and also push through the white substance to the ependyma of the ventricles. Proliferation of neuroglia or connective tissue, and in time sclerosis of the cortex, which involves the medullary substance also in a greater or less degree.

2. The larger blood vessels may or may not be atheromatous; in the capillaries there is an increase of nuclei in the walls, with thickening and hyaloid degeneration.

3. In the nerve cells, the ganglion cells, granular and fatty degeneration of protoplasm, sclerosis, atrophy.

4. Atrophy and final disappearance of the nerve fibers, not limited to the cortex and found in other brain diseases also—senile dementia and epilepsy, for instance.

5. Focal lesions of the most various kinds, and degenerative changes in the spinal cord, the several forms of sclerosis and myelitis.

The spinal cord undergoes atrophy, with gray degeneration in posterior and postero-median columns, and of posterior spinal nerve roots.

**SYMPTOMS.** For clinical convenience the disease is divided into three stages, prodromal, maniacal, rarely melancholic, and the stage of dementia, although there is seldom a marked division between each.

**Prodromal Stage**—May exist unrecognized for months or longer. It begins by an alteration in the habits and character of the individual; the patient has spells of irritability and obstinacy, which will not admit of contradiction or opposition; there is a general feeling of elation and *bien-etre*, or egotism shown by the exalted opinion of his own attainments and importance, and a great laudation of his family. He becomes boastful, untruthful, dishonest, and forgetful, neglecting engagements, business, self, and family. He frequently makes extravagant purchases, and may waste large sums of money before his condition of irresponsibility is recognized, or may unwittingly resort to dishonest means to obtain money to squander on new-made friends. In many instances the patient develops ideas of an enterprising character, and resorts to all forms of expedients, which, to his mind, are going to improve his or her family's station and worldly condition: he determines to change his occupation or business, or attempts to instruct the authorities in what he conceives



should be their duties. The moral lapses of paretics are most frequent during this stage, consisting of acts of theft, drunkenness, violent impulses, or indecent assaults, in individuals who have possessed a good moral character. They become profane and vulgar, and often resort to sexual excesses. Associated with any of the above symptoms may be any one or more of the following physical conditions: tremor of the muscles about the mouth, naso-labial folds, and of the tongue, causing a slight slur or hesitating speech; alterations in the pupils, or one pupil becoming somewhat larger than the other; attacks of vertigo, or epileptiform or apoplectiform seizures; the gastric, intestinal, hepatic, and nephritic secretions are disturbed, and there may be headache and insomnia. After a variable duration, continuing in a mild degree for many months, is ushered in the—

Second, or Maniacal Stage—Which is much the same as a severe attack of acute mania, plus the physical signs of paresis and the delusions or ideas of grandeur. The patient is excessively restless, boasting of his great wealth, intentions, prospects, and influence; one moment the most important of individuals, the next giving away thousands, and if doubt is expressed as to his ability to do so, making it millions and often billions, presenting houses and lands, titles and offices, with unstinted liberality. It is to be noted that these so-called delusions of the paretic are in reality conceptions, or an expansive delirium; for when contradicted the patient makes no effort to defend them; and they seem to be really assertions and reassertions, continuing until incoherency restrains the airy imagination. The patient is sleepless, noisy, destructive, with attacks of blind, uncalculating violence, resisting all who attempt to restrain or molest him; the violent impulses of paretics are similar to the furious excitement of the post-epileptic maniac. The physical signs are more pronounced, the characteristic hesitating and slurring speech increases, the pupillary changes become more marked, the tremor of the tongue and lips increasing, and spreading to the upper extremities, the gait ataxic, the patellar reflex increased, or, rarely, diminished, the sphincter of the bladder disordered, and there often occurs paralysis of the anal sphincters. During the progress of the second stage are developed cerebral crises,—syncope, petit or grand mal, apoplectiform attacks, or paralytic seizures. Few cases but show one or more of these conditions. There also occur myosis and loss of light reaction, and increased wrist and



elbow jerks. The maniacal stage is of shorter duration than any other, and is usually succeeded by the—

Stage of Dementia—The patient presenting all the evidences of failing mentality, with paralysis, trophic changes, as shown by the occurrence of bed-sores, cystitis, diarrhoea, and arthropathies, or Charcot's joints, the patient emaciating rapidly, death closing the scene within a few months.

Rarely the maniacal stage is preceded or replaced by a condition of melancholia with expansive hypochondriacal delusions. In a few instances a genuine lucid interval has followed either the prodromal or maniacal stage. The spinal form of general paresis is fairly frequent, in which symptoms of spinal sclerosis are added to the mental ataxic phenomena of the usual form.

"Of the many divisions of general paralysis into several clinical types, all of them naturally more or less arbitrary, I know no other so satisfactory as Meynert's eight." (Folsom.)

1. Simple progressive dementia, with the usual motor impairment which accompanies it, but, excepting hypochondriacal depression, not necessarily exhibiting other mental symptoms than dementia.

2. With the expansive delusions and the distinctive motor disturbances which appear simultaneously and are progressive, constituting the "classic" form of general paralysis. The mental state is usually of self-satisfaction and exultation, but there may be depression.

3. Of the same type as the last, but failing its steadily progressive character through arrest of the active process. The remissions, which seldom last so long as a year, raise hopes of recovery, but still manifest unmistakable impairment of the reasoning faculties. The psychic disturbances are much greater than can be accounted for by the atrophy of the brain alone.

4. Cases in which the characteristic exultation and grand delusions reach such an astounding height that manifest motor symptoms are looked for with confidence from day to day, and yet may not appear even for a year, any slight incoordination naturally being obscured by the general muscular disturbance. Meanwhile there may be such an improvement that the patient leaves the hospital for a while, once, rarely twice, on the responsibility of his family, but to return with marked motor, as well as mental signs.

5. A very rare form, with alternate symptoms of exaltation and depression of the type of circular insanity.

6. With early furious delirium, painful hallucinations, confusion and incoherence somewhat resembling acute delirium.

7. Progressive general paralysis, in which the characteristic indications appear secondary to other forms of insanity; for instance, after paranoia or melancholia, first described by Hoestermann.

8. The combined form, with sclerosis in the whole cerebro-spinal tract, the symptoms of tabes or spastic paralysis predominating, according as the posterior or lateral columns of the spinal cord are chiefly involved. The ascending type, in which the cord is first affected, is rare. Optic neuritis, ending in atrophy and paralysis, especially of the ocular muscles, may precede marked mental symptoms.

**DIAGNOSIS.** The development of the following symptoms removes all difficulties in diagnosis: mental—alteration in character, loss of memory, defective will power, changed moral sense, insomnia, violent impulses, melancholia or mania, unsystematized delusions of expansive character, with an exalted sense of well being, gradually ending in dementia; physical—hesitating, slurring speech, tremor of the lips, tongue, and upper extremities, pupillary changes, myosis, loss of light reaction, exaggerated wrist, elbow, and knee jerk, attacks of syncope, vertigo, epileptiform or apoplectiform seizures, ataxia, trophic changes, and finally paralysis.

Paralytic insanity, or organic dementia, is not the same condition as general paralysis. It is the form of mental failure succeeding to gross brain lesions, such as apoplexy, tumors, softening, trauma, and sclerosis.

**PROGNOSIS.** Unfavorable. Remissions very, very rarely occur.

#### THE TREATMENT.

We do not desire to have the reader to understand that when the condition resulting in tissue, structural changes, has been reached, that we recommend any treatment, but before the cord undergoes atrophy we claim that Osteopathic treatment offers better results than can be derived from any other source known, for the reason that blood (arterial blood to the parts) is the only tissue builder and preserver, Nature's own remedy.

The careful study of the nature of the malady and the stage, effects and condition of the patient at the time of examination should be made, and then an intelligent application of the principles of this science usually results in great good, in that it stays

its progress in many cases and cures others not gone beyond human limits—structural changes. As there are all grades of paralysis, from its simplest to its gravest form, the Osteopath will be extremely guarded in his prognosis as well as in his promises to the patient regarding results. Many cases thought to be incurable are cured, and others which seem easy, not serious seemingly, are not benefited by treatment. In all cases of paralysis the structural conditions determine the consequences. Wherever arterial blood circulates and nerve pressure can be removed, the case may be regarded as favorable.

The general treatment should begin at the neck. Extension, rotation, careful, deep, persistent, long manipulations of the muscles of the neck will be found to be necessary to relax them, and it sometimes, in some cases, requires months to accomplish this. In all cases of paralysis, of every form, we find rigidity of the muscular fibers to exist, especially those of the neck. The same condition extends all the way down the spine, in the dorsal region, and a persistent course of manipulations are necessary to relieve the rigidity. As the neck muscles yield, the others do in proportion, and amelioration shows itself. The manipulations require much patience on the part of the operator, for the rigidity is often intensified by attempts to manipulate, and greatly interfere with movements. A coaxing of the muscles, as well as the patient, to relax, constitutes a large part of the first few attempts to treat a patient. We speak especially of cases where the rigor is predominant, after the paralytic stage is partly changed. The incoordination is characteristic. Rigidity prevails in some cases, relaxation in others. Finally general paralysis, and death ends the scene. Early treatment should be instituted to promise benefit. Osteopathy promises more than any other treatment, if begun early and persistently applied, and yet early application is important. Do not promise to raise the dead with Osteopathy.



PLATE LVIII.—Manipulation for Goiter.





## DISEASES OF THE DIGESTIVE SYSTEM.

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The digestive system embraces the teeth, salivary glands, stomach, duodenum, liver, pancreas, and small intestines; and diseases of the digestive system embrace all that pertains to the digestive tract, and more—for the whole alimentary tract is frequently involved when disease invades any portion of the digestive system, including the nervous system that controls the various divisions thereof, and as will be seen in the following divisions named, and the pathological affections treated of under the various headings, the diseases of the digestive system constitute a very important part of the diseases that affect mankind. The treatments, as stipulated under the various headings which follow, become eminently important to those who would be successful as Osteopaths in maintaining a standing among scientific healers.

To learn to differentiate between a normal and an abnormal condition of this system becomes a matter of vast importance when it is understood that, upon the healthful condition of these organs depends the proper digestion of the food eaten, as to its proper conversion thereof into healthy blood; and the importance intensifies when it is known how much depends upon the manufacture of healthy, normal blood, possessing the proper proportion of the elements that constitute the human body. No one will fail to recognize their importance from an Osteopathic standpoint. Under the heading "Diseases of the Respiratory System" will be found the diseases of the digestive organs above the stomach, so that there is no necessity of a repetition here.

## DISEASES OF THE STOMACH.

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### ATONIC DYSPEPSIA.

This is a functional derangement of the stomach, with either a deficient secretion of kind or quality of the gastric juice, characterized by disorders of the functions of digestion and assimilation, owing to the sympathetic nerves affected. The character of the disorder is largely dependent upon the manner of eating and the state of mind during ingestion; the character of the food; also, upon the frequency of eating; continuance of the same diet, or too greasy food. Sedentary habits, worry and fatigue have much to do with the processes of digestion.

As the object of this work is to benefit mankind, we would add that dyspepsia is the result of abuse of the stomach itself. It is not so much the lack of mastication (for some people never take time to do that) as it is a lack of rest of the stomach. It is a muscular organ, and, like all other muscular structures, tires out from overuse. The secretion manufactured by the salivary gland is the effect of sympathetic nerve influence, and an essential ingredient in the process of digestion (an alkaline secretion), and serves its purpose of mixing with the food, moistening it, preparatory to being conveyed (swallowed) into the stomach. Here another kind of secretion is encountered—exclusively an acid secretion. If the former (alkaline) is lacking in quantity, mixed with the food, and does not to some extent at least neutralize the acid, the excess of this acid arrests the process of, or fails to perform digestion and emulcify the food, so as to be in proper condition to pass on to the next division of the digestive apparatus, and increases the stimuli to the acid-secreting nerve filaments, contracture ensues, and the digestive process is at once arrested.

The whole process of digestion is carried on by nerve influence. The sympathetic and spinal nervous systems are the factors involved therein. The solar plexus being made of, or consisting of, the terminal filaments of the two, their actions, combined, carry on all of the processes of this important function—digestion as well as assimilation of the food. An excessive action of the par vagus produces an excess of acid secretion. A deficient action of the splanchnics leaves the excess of acid in the stomach, and a contracture of the walls of the stomach ensues,

and the hydrochloric acid being in excess, solution of the food is at once arrested. This secretion is directly under the supervision of the anterior portion of the solar plexus of nerves that control the manufacture of the hydrochloric acid. The posterior portion of the solar plexus being directly under the supervision of the splanchnic nervous system, and both being essentially concerned in the process of digestion, it is necessary that communication should be kept up in order that the normal functions be performed. This short explanation places the matter properly before the mind of the reader, and gives an idea of how we regard the treatment of disease as a product of incoordination of the nervous system. These two nerve forces represent the positive and the negative forces in the body, and due regard to their proper union furnishes a key to many a difficult pathological condition, as well as to the manner of its solution. The use of artificial solvents—digested alimentation thrust into the stomach—is a sad discredit to the intelligence of chemists and dietary manufacturing proprietors, and still more so to the professedly learned medical fraternity! Whenever it is once known how to unite these two forces, and that done the whole trouble of indigestion ceases, the amount of experimentation will cease, and the manufacture of “prepared foods” will be useless. The larger percentage of disease has its origin at the very threshold of the digestive process—in the stomach.

#### THE TREATMENT.

As many of the diseases attributed to disordered liver, heart and kidneys really have their origin in the stomach, and disperse as soon as the stomach is relieved, it becomes a matter of no small moment to consider well the true state of the digestive tract. Our advice, then, is to unite the forces that control the secretions of the stomach. Usually the difficulty is found to be a faulty condition of the splanchnic nervous system, and this should receive our first and special attention. Beginning at the first and second dorsal vertebrae (to stimulate the pulmonary plexus, so that the lungs may be actively engaged in their functions), we proceed down the spine on either side, raising one arm at a time, or both if an assistant is present; stretch the arm high and strongly above the head, pressing hard with the fingers of the other hand on either side of the spinal processes along down the spine, embracing the whole region of the splanchnic nervous system, letting the arm be suddenly lowered, each move and each pressure.



It is an important part of the treatment, that the beginning should embrace the fourth dorsal, as there seems to be the beginning of the filaments that control the pyloric end of the stomach, and there is where the peptic glands seem to be the most numerous; and then proceed on down the spine, step by step, as far as the tenth dorsal vertebra. The patient may be in a sitting or a reclining posture (no matter which), after which the patient should lie on the back, and the bowels, liver and stomach should receive attention. The liver should be manipulated—rotated, kneaded, diaphragm stretched; then the gentle vibratory movements made, so as to stimulate each and every part of the alimentary tract. The usual flexion and manipulation of the lower limbs should be made, as well as the treatment of the lower lumbar and sacral plexuses of nerves; and, last of all, the vaso-motor nerve area should receive attention. During this treatment the patient should receive the vibratory manipulations on either side of the spine, between the fourth and tenth dorsal region, pressing the muscles upward and outward at the same time. Then the tapping manipulations on the abdomen upward, beginning at the ileo-cecal fossa, following the course of the colon upward to the hepatic flexure, thence across to the splenic flexure, thence down to the sigmoid flexure—several times. This increases peristalsis of the intestinal tract, and cures constipation. The pressure should be firm and not rapid on the back, in the region of the great splanchnic nervous system—especially at its beginning (the fourth dorsal), between the fourth and fifth.

It will be understood that during the process of digestion there is an increased activity in the circulation of the blood throughout the whole system, as is the case in all general exercise of the body; and that during this activity of the circulation the nervous system has a corresponding increase of labor to perform, directing and selecting, as well as placing, the manufactured products of the chemical changes. The necessity of perfect freedom from pressure will be apparent, therefore the removal of any such impediment as would interfere with its normal action should be especially attended to, from the muscles in the neck, which might interfere with the pneumogastric, splenic or vaso-motor system, all along the line to the terminal filaments of the sympathetic nervous system in the sphincters in the lower outlets of the body. These have to do with capillary circulation, and from the blood in the capillaries are drawn all of the elements that go to

make up the secretions that play such a vital part in the digestive apparatus. This understood, and practiced, accomplishes the purpose intended.

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### ACUTE GASTRITIS.

An acute and violent inflammation of the mucous, sub-mucous, as well as the muscular coats of the stomach, with loss of tissue, accompanied with great pain, loss of appetite, constant vomiting of blood, streaked or bloody mucus, a weak and collapsed feeling. This state is usually brought on by irritant, corrosive poisons, such as mineral acids, arsenic, corrosive sublimate, carbolic acid, copper and caustic potash. Of course, this condition must receive attention at once, and the proper antidotes should be administered. The removal of as much of the poison as possible by vomiting, encouraged by demulcents. Oil, lard, milk, lime water, or whatever is indicated, should be administered at once. The consequences of such a state are most always grave.

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### ACUTE GASTRIC CATARRH.

An acute catarrhal inflammation of the mucous membrane of the stomach; feverishness; loss of appetite; nausea; vomiting; painful digestion; irregularity of the bowels; sometimes accompanied with vertigo; loss of appetite; coated tongue; bad taste and breath; lessened gastric secretion; alkaline reaction; viscid mucus; feeling of weight; eructations; urine scanty and containing lithates.

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### CHRONIC GASTRIC CATARRH—CHRONIC DYSPEPSIA.

This is an indigestion, a loss of appetite, burning, tenderness, gnawing feeling in the stomach, due to thickening of the coats of the stomach, resulting from disturbance in the peptic glands. Dyspepsia is characterized by so many symptoms that it is hard to enumerate a correct classification, but suffice it to say that the characteristics are prominent after ingestion of food—an uneasiness, tenderness, distention after eating. The tongue is usually heavily coated, a peculiarly disgusting, sickening

uneasiness in the epigastrium, attended with constipation, heart-burn, retching, cross, irritable, despondent, melancholia, depression of spirits, hungry, thirsty, nervous, restless, sleepless and everything out of fix. This disease is associated with so many chronic ailments that it demands more than a passing notice. The term dyspepsia "covers a multitude of sins." There is no organ in the body that is subjected to a tithe of the abuse the stomach is, and its complaints are constantly uppermost, and for this reason every nostrum that the inventive genius of all ages could conjure or invent has been dumped into it to cure the dyspepsia. It has not dawned upon the medical profession that teasing and doctoring that organ is just the thing that ought not to be done—never! It is like goading an already exhausted animal, to make it do more than it is able. For conscience' sake, give the poor stomach rest. It surely needs it badly enough. Let us study the character of the forces that control it, and adjust them, then dyspepsia will be readily cured. The cure of diseases of this organ are as readily effected as those of any other organ, if we know how. And the Osteopath should know.

As the indigestion of the food produces the most characteristic, distressing symptoms in this disease, attention to the cause deserves our careful consideration. It may be laid down, as a rule, that when the stomach is healthy the whole man shares the same blessing. Dyspepsia is the bane of this age. The causes are as varied as the material introduced into the stomach, from the "chewing gum" to the "piece between meals," and the stuffing of the infant to stop its crying. The stomach has had every evil influence brought to bear that could be thought of (and not thought of), upon it, outside and inside its walls, and then the possessor would grumble because it could not bear more abuse. It will be remembered that the stomach is a muscular organ, supplied with blood vessels, nerves, glands, lymphatics; that it is subject to the same laws that the rest of the system is; that it is subject to stimulation, depression, exhaustion, inactivity, and needs rest and recuperation the same as other secretory organs; and that to perform its functions the necessary supply must be furnished it. This brings us to a consideration of the nervous system that controls the digestive apparatus. The great sympathetic orders, the motor executes—the work is done. But that something may be done, the material to do it with is a matter of no small consideration in the performance of the functions of this organ, the stomach. The whole alimentary tract is

one continuous tube, supplied along its course with certain recuperative forces that furnish the necessary elements to meet the demands, and the action of the one depends largely upon the other, for the preparation of the food is the all-important desideratum under consideration. The stomach is the important division of the alimentary tract that can not be ignored. There are chemicals generated here that nature especially regards as essential in the formative process of the blood itself. Here is where our attention is directed in the building-up process in all diseases. Here the preparation is made for converting food into blood, and without healthy blood no disease can be cured. Dyspepsia itself must be cured by healthy blood. Every tissue in the body is made from healthy blood, and kept renewed by elements therefrom. The condition of the organ itself, the mental state while eating food, and while it is in the stomach, have everything to do with the digestive functions, and the results are as cause to effect. The nervous system that is said to control the digestive tract ends in the organs themselves. That set which controls the action and secretion of the salivary glands ends in them; that set that controls the manufacture of the gastric secretions ends in the walls of the stomach; and this is true of the liver, the pancreas, the duodenum, of the small intestines, the colon and the rectum. Each and every division is controlled by nerves that emerge from certain localities in the spinal cord. Any deficiency anywhere along the line is directly attributable to some trouble in the nervous system that controls certain organs in these localities. Correct these, and normal action ensues.

The Osteopathic treatment of the stomach will be better understood when it is known that there are two forces to deal with. The one controls the production or generation of acids, and the other the alkaline secretions. The excess of the one or the deficiency of the other (in other words, the supremacy of control of one set of nerves) determines the pathological as well as the physiological condition in the parts, and not only in the stomach, but in the whole body. If the anterior portion of the solar plexus predominates, the acids are in excess, and we have a contracted state of the stomach and the whole internal viscera—a drawn condition, pain, constipation. If the splanchnic nerves predominate, the results are accordingly, and disproportion produces disorder in the whole physical economy. This affords us a key to the situation, the use of which determines the results of treatment. Acids contract, alkalies dissolve and disintegrate.



These two opposites united, neutralize each other. In the human system they so blend as to regulate the processes in the secretory generative economy that physiological harmony results at once. The sympathetic nerves direct and the motor execute. The intelligence that has the prerogative of directing is situated in the calvarium, and a direct connection is made from every terminal filament at its remotest point to the original center, and from there the intelligence is conveyed to the terminal filaments of nerves influenced. Instance: stimulate a bundle of filaments in one or more of the sphincters of the lower outlets of the body, and communication is conveyed through nerve filaments to the origin, thence to the solar plexus, and an irritation of the stomach at once takes place. Whether this influence is conveyed directly to the brain, thence down the pneumogastric filaments terminating in the stomach, is not settled; but, anyway, it gets there. Thus it is through reflex filaments we reach other parts of the body, and the brain substance and nerve centers, and communications are established that set right discrepancies which have existed for a long or short time. It is thus we relieve pain, change pathological conditions to physiological, and cure disease.

The changes that occur in the stomach are brought about Osteopathically through stimulation of the splanchnics, or the terminal sympathetic filaments, which convey an influence to the brain, thence to the stomach, and thus change an acid condition to an alkaline, or neutralize the excess of acids, and vice versa. Constipation is relieved, colic cured, dyspepsia wanes, digestion established, new blood-making material produced, and health and vigor take the place of former emaciation and disease.

#### THE TREATMENT.

Begin the treatment of this affection at the neck. Free all of the muscles in all of that region, raise the clavicles, treat the whole spine on both sides, drawing the arms up taut, and use steady, slow motions and pressure along the dorsum in the splanchnic region. The spine should receive thorough treatment all along down its full length (patient being on the side), the muscles being thoroughly moved upward and outward, and especially from the fifth to the tenth dorsal vertebrae (on both sides), then stretch the shoulder up strongly on the right side, pressing hard about the seventh dorsal on the right side, retracting the arm suddenly. Do this three times. Turn patient on back, manipulating lower bowels thoroughly for several minutes; spread the diaphragm, use the rotary movement over the abdominal region,



PLATE LIX.—Throat Treatment for Diphtheria, etc.



kneading the bowels carefully and thoroughly, and lift them up from the iliac fossae as the patient takes a long, deep inhalation. Repeat these moves and treatments every other day, being fifteen to thirty minutes at each seance. Enjoin on the patient strict care in regard to masticating his food thoroughly, leaving off liquids at meals, and if the patient is excessively corpulent, omit his breakfast. Long, deep inhalations of air should be rigidly enforced every two to four hours every day. Leave off all mincing between meals. Let the patient have a glass of water for every ten pounds of his weight during the twenty-four hours. Eat and sleep regularly, and it is well to have patient rest at least an hour after meals, without mental or physical labor. These directions followed will cure and keep cured the greater percentage of stomach troubles denominated dyspepsia.

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### GASTRIC ULCERS.

Is characterized by constant pain at pit of stomach, tenderness, vomiting of blood, severe and frequent attacks of neuralgia. It may be relieved by equalizing the forces, as mentioned for treatment of dyspepsia.

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### GASTRIC CANCER.

This affection is considered as an unfavorable one. No medication offers any hope. The indications are to supply hydrochloric acid. The union of the positive and negative forces offers more benefit than medication. The dilute hydrochloric acid given in the water drunk, together with the splanchnic nervous treatment, promises more than all other remedies heretofore administered, hence we recommend it persistently.

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### GASTRIC DILATATION.

SYNONYMS. Gastrectasia; pyloric obstruction; pyloric stenosis.

The abnormal increase in the cavity of the stomach, with the walls either hypertrophied or decreased in thickness, presents a peculiar condition for treatment. Indigestion is the pronounced characteristic symptom, and noisy movements in the abdomen



a common symptom (borborygmus); regurgitation of partly digested food is a common condition. An enlargement is perceptible in the pyloric end of the stomach, and extreme tenderness.

#### THE TREATMENT.

The principal treatment should be confined to the splanchnic region, and insisting on the non-use of fluids during meals. The equalization of nerve force being established by taking off the pressure from the splanchnic and pneumogastric nerves, restores normal capillary activity to the relaxed muscular fiber, and re-establishes function. The stretching of the abdominal muscles increases their elasticity, and the increased circulation in the parts brings about a physiological condition. Healthy arterial blood, allowed or permitted to circulate, cures all pathological affections. It will be found that the secret of all cures is to let in the life blood—the element that contains the life—into any part diseased. It possesses all the power the mind of man can conceive of to cure disease. This, then, is the proper thing to do. Give the overdistended muscular fibers rest, send in the life-giving fluid, and await results. This is not only theoretically but practically the only thing indicated. It will be found to be the greatest aid to the cure of the above disease to leave off eating any sort of food for several days, giving the stomach absolute rest.

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### GASTRIC HEMORRHAGE.

SYNONYMS. Hematemesis; gastrorrhagia.

This being only a symptom, it will be proper to ascertain the cause, then treat the patient accordingly. Vicarious menstruation at menstrual periods, ulcer of stomach, cancer, scurvy, purpura, yellow fever, and other affections may cause hemorrhage of the stomach. Find it out, and treat accordingly. The symptoms are a sinking, fainting feeling at pit of stomach, followed by ejection of black coagula or coffee-ground appearance of blood. Sometimes, if the blood passes into the small intestines, it will be voided by stool.

#### THE TREATMENT.

Water, as hot as the patient can bear to swallow, with the addition of a little salt, will generally arrest the hemorrhage. Absolute rest until recuperation takes place. Remove all pressure from the stomach, the abdominal and chest muscles, and

equalize the circulation of arterial blood in the capillaries by stimulating the vaso-motor area and taking off the pressure from the jugular veins and intercostals in the usual way, lifting the chest walls by the up-drawn arm and dorsal pressure.

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### GASTRALGIA.

SYNONYMS. Cardialgia; gastrodynia; stomachic colic; spasm of the stomach; neuralgia of the stomach.

The sensory nerves of the stomach seem to be most affected; that is, they report the pressure, or the presence of abnormality pressure. The affection is characterized by violent paroxysms of pain and contractions of the walls of the stomach, and followed by feebleness of the heart's action and symptoms of collapse. It is distinguished from other affections by its paroxysmal character. This affection is usually the result of too much acidity in the stomach itself. That is due to incoordination of the two forces controlled by the splanchnic and pneumogastric nervous systems—the fault of non-union of these two sets of nerves.

#### THE TREATMENT.

It will be found that the stretching upward of the right arm strongly, and at the same time pressing the fingers of the other hand against the side of the spinal processes (on the right side), and suddenly lowering the arm, will usually be sufficient to relieve the colic instantly. If the patient is so situated that this move is inconvenient to apply, stretch the body backward, over the edge of a table, chair or anything convenient, so as to stretch that part of the body in the region of the splanchnics strongly backward, holding the body in that position a moment or so. This does the work. This will be found to be the most satisfactory treatment ever devised by anybody. Any measure instituted to accomplish the pressure and the bending backward is all that need be done. The expert Osteopath will ever be ready to improvise means to accomplish the ends desired, on any and all occasions. The intelligent application of Osteopathy is what is needed if success be expected, and it generally follows most satisfactorily.

## DISEASES OF THE LIVER.

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The liver is the largest gland in the body, situated on the right side of the abdominal cavity, just below the diaphragm, and constitutes an appendix to the digestive system. Its functions are peculiar, like all other glands, secreting special constituents. This organ secretes bile and furnishes a storage for glycogen, and at a special period of development the production of blood corpuscles and their destruction, the formation of large quantities of urea, the retention and destruction of certain poisonous substances absorbed from the intestinal tract. It consists of five lobes—the right, left, the lobus spigelii, the lobus quadratus, and the lobus caudatus. These are made up of lobules or acini, and these again of hepatic cells, capillaries, arteries, veins, lymphatics, and biliary channels, each lobule being surrounded by connective tissue. The weight of the liver is between fifty and sixty ounces. It receives its supply of blood from two distinct sources—from the hepatic artery and the portal system; while the blood is returned from it into the vena cava inferior by the hepatic veins. The secretion (the bile) is conveyed from it by the hepatic duct, either directly into the intestine, or, when digestion is going on, into the cystic duct, and thence into the gall bladder, where it accumulates until required. The portal vein, hepatic artery and hepatic duct branch together throughout the liver, while the hepatic veins and their tributaries run by themselves. The liver is made up of small, roundish, oval portions, termed lobules, composed of minute branches of the portal vein, hepatic artery, hepatic duct and hepatic vein, while the interstices are filled by the liver cells. These cells form the glandular or secreting part of the liver. The cell substance contains numerous fatty molecules, and possibly some granules of bile-pigment, as well as a variable amount of glycogen. These cells are held together by a very delicate sustentacular tissue, continuous with the interlobular connective tissue. From these small vessels a dense capillary network is prolonged into the substance of the lobule, and this network is gradually gathering itself up, as it were, into larger vessels, converging to a single vein occupying the center of the lobule, and hence called interlobular. The small interlobular veins discharge their contents into veins called sublobular, while these again by their union form the main branches of the hepatic

veins, which leave the posterior border of the liver, to end, by two or three principal trunks, in the inferior vena cava, just before its passage through the diaphragm. The hepatic artery distributes blood to Glisson's capsule, the walls of the ducts, blood vessels, and other parts of the liver, to rebuild the liver tissue itself especially; while the portal blood, coming from the portal system, undergoes a secondary capillary circulation in the liver, from which the bile is secreted, and, after leaving the secretory cells, joins the venous blood, the product of the hepatic circulation, and the bile enters the hepatic duct and is emptied into the duodenum.

The gall bladder is simply a reservoir to hold bile for future use, for the secretion of bile is constant, while the digestion is periodical. The manner of its entering the cystic duct is peculiar, yet very simple when understood. The orifice of the hepatic duct, through which the bile passes from the liver into the ductus communis choledochus, is narrower than the cystic duct, and seems closed, except when sufficient pressure behind it forces the bile through it into the duodenum, and the bile, finding no exit through it, is forced back up through the cystic duct into the gall bladder. The bile is forced out of the gall bladder by compression of the walls of the gall bladder, produced by the contraction of its coats. The ducts are composed of unstriped muscular tissue, and their contraction is excited by the presence of food in the duodenum, acting by reflex influence, with sufficient force to expel the contents of the ducts and gall bladder. It will be readily seen that perfect order must exist, and freedom from unnatural pressure of these organs must be had in order to produce normal action of this gland. Our very life depends upon the proper circulation of the blood in the liver, for without it no bile would be secreted, and no digestion or new blood would be made as the product of digestion. For a further knowledge of the anatomy and functions of this gland we would refer the reader to works on anatomy and physiology, which treat elaborately thereon.

The salivary, the gastric, the hepatic and the pancreatic secretions all constitute the agencies that promote digestion, and all of these secretions are manufactured through direct action of the sympathetic nervous system. Each particular element in each one of these secretions furnishes a part of the great whole that, without either, would cause imperfect digestion. As all secretions are made from the blood, and the blood is distributed to every organ and tissue in the body through the capillaries, and the capillaries are controlled by the sympathetic nervous system,



the importance of perfect freedom of every part of the body from pressure becomes a matter of necessity. Every discrepancy in the system, every deviation from a normal state, is due to a chemical change in the elements, and as these elements are the product of digestion, and as digestion is the result of nerve force, it becomes apparent that on a disturbance of the nervous system, either by undue pressure or stimulation, influences are started that culminate in the consequences we see from day to day—physiological and pathological. The proper understanding of the nervous system furnishes the key to the workings of the human system for the weal or woe of the human family. The processes of life constitute an interminable circuit, starting in and ending in the mind, directed through the sympathetic nervous system, executed by the motor nervous system. The comprehension of these constitutes limitless power over the human body.

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### CONGESTION OF THE LIVER.

SYNONYMS. Torpid liver; biliousness.

This is commonly recognized as an abnormal fullness of the vessels of the liver. The enlargement of the organ is due to the accumulation of blood therein, and it is termed active when arterial, and passive when venous. The characteristics are fullness and inactivity, a dull, heavy feeling in the liver itself, accompanied with derangements of digestion, mental torpor, and sometimes slight jaundice. In the active congestion there are more or less heat, habitual constipation, pain in hypochondriac region and under the right shoulder blade, mental depression; the patient is generally pessimistic. The liver is enlarged in all directions, and presses upon other organs in all directions in proportion to the amount of congestion.

The characteristic symptoms are as follows: A general malaise, aching of limbs, feverishness, headache, depression of spirits, the tongue has a yellowish coating on it, a disgust for food; there may be nausea, vomiting, constipation, high-colored urine, a feeling of weight and fullness, with soreness in the hepatic region, with a dull pain extending up into the right shoulder; slight yellowishness of the sclerotic coat of the eye and skin, complexion muddy, and symptoms of gastro-intestinal catarrh are generally present.

The cause is pressure—obstructed circulation. It will be readily understood that pressure on any of the blood vessels lead-

ing to, into, or out of the liver, or undue pressure on the solar plexus of nerves, would result in interference of function, and then congestion must ensue. The results follow as certainly as fate. The pressure is to be especially considered, whether it be on the nerves, blood vessels, lymphatics, ducts or cells. The minute structure of this organ is such that there is no compensation for duties not performed. The organ itself must be restored or the house is divided against itself, and a wreck sooner or later occurs. It can not perform its functions without the right kind of blood, and as it is intimately concerned in blood manufacture, it must not be circumscribed in its functions by environments that interfere therewith. Congestions of surrounding organs are factors generally concerned in the production of disturbances in the functions of this organ, and should receive special attention. Contraction of the intercostal muscles will be found to exist in a large proportion of cases. The abdominal muscles may also be concerned in the same way. Tumors, tight bandages around the body, constant pressure from any cause, have to do with the impediment to the proper circulation. All of the circumstances concerned in each particular case should be duly considered, and the action in the premises controlled thereby.

#### THE TREATMENT.

The Osteopathic manipulations to remove congestion are surely plain enough.

Our motto in the treatment of the liver is similar to what we claim to be true for all the organs.

Inasmuch as all pathological conditions are due to undue pressure somewhere, in, on, or remotely, that arrests the flow of fluids to and from them, so in diseases of the liver undue pressure or disconnection of nerve force exists. It is evident that the indications point with unerring certainty to the necessity of removing this pressure and set to rights the forces governing the action of the organ.

We have no faith in the "touching-of-a-button-theory" business in the treatment of pathological conditions, for it often happens that mechanical pressure produces such a state of congestion as to positively separate the forces that normally control the diseased organ, and then "to touch a button" would produce no response, and the touch would fail to start the "machinery." The philosophy of the Osteopathic system is to "Remove the Pressure." To know how to do this is to know Osteopathy, and results follow that are seemingly marvelous in many instances.

Whilst we teach that certain nerves control, coordinately, certain parts of the body, we also teach that nerves coming out of any particular foramen are not always all the nerves ending in the anatomically announced tissue or tissues. This indicates that universal freedom of the whole system is essential to freedom of a particular part, for the human system is a cosmos, and all controlled by mind; and this mind is conveyed through tubes called nerves. The various illustrations given in this work, studied, adopted, practiced, constitute the methods used to "Take Off the Pressure" everywhere in the body, and should be so thoroughly understood that a glance at the system in a given pathological condition should suggest the cause of the pathological condition and the means of remedying it. There is no guess-work in the treatment, nor in the probable—yes, almost positive—results, when scientifically applied, as delineated in this work. There are certain so-called centers along the spinal column from which certain nerve filaments emerge through the foramina that surely exercise positive influences upon other parts of the body, and certain special results follow as cause and effect, yet why they do so is the most difficult thing to explain. From these phenomena has been deduced a supposed science, termed Osteopathy, and yet, day by day, marvelous discoveries of results occur from the stimulation of other terminals equally as profound, mysterious and startling. These results are all along the same lines of this same process, and only demonstrate that our researches are rewarded as we advance in the study of this marvelous creature called man. We surely "are wonderfully and fearfully made." The constant application of the study of the coordination of the forces will eventuate in more marvelous revelations than we have yet learned, and put us nearer in harmony with ourselves, and serve to keep us so.

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#### ABSCCESS OF THE LIVER.

This is a circumscribed inflammation or parenchymatous degeneration of the hepatic cells, resulting in suppuration, single or double, and recognized by irregular febrile attacks of tenderness and symptoms of deranged gastro-hepatic functions, in which there is in the liver a hyperaemia, a swollen state of the liver, an effusion of lymph, a degeneration of and softening of the hepatic cells, the suppuration beginning in points in the lobules and coalescing; the walls of the abscess consisting of more or



PLATE LX.—Chest and Spinal Cord Extension.





less changed liver structure. These abscesses usually penetrate toward the surface and burst into the peritoneum, intestines, hepatic duct, lungs, gall bladder, stomach, or externally through the abdominal wall or into the pleura, and after pus is discharged cicatrices are formed in the tissues involved.

The symptoms are generally very obscure, simulating intermittent or remittent fevers and disorders of the stomach, with obstinate vomiting, debility, nervous irritability, melancholia, jaundice, constipation, light stools, and resembling typhoid fevers, as it is more or less chronic in its stage of progression to a culmination. This condition may be confounded with hydatids of the liver, but the local pain is usually so characteristic as to prevent such a conclusion. The introduction of a trochar leaves no doubt as to the condition. These abscesses may also be mistaken for a cancer, but as a cancerous condition is characterized by burning sensations, there is no excuse for failing to differentiate.

The prognosis is considered unfavorable in any event, yet recoveries do occur. When suppuration is present it should be let out. The pus is greenish yellow, and, if allowed to remain long, turns to a dark color. The relief is better secured by the use of a trochar and canula, with drainage tube.

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#### ACUTE YELLOW ATROPHY.

This is so similar a disease that it is often mistaken for Abscess of the Liver at the beginning, but instead of an increase in size, it decreases, followed by deep jaundice and profound disturbance of the nervous system, generally terminating in death in a short time. The symptoms are: There is a prodromic period, attended with gastro-intestinal catarrh, coated tongue, yellowish; nausea, vomiting, and tenderness over the epigastrium; headache, rapid pulse, slight fever and jaundice, gradually increasing in intensity, with increasing headache and persistent insomnia, vomiting of blackish, grumous, bloody, "coffee-ground" excreta, tarry stools, ecchymotic patches on the skin. Convulsions ensue, coma, and death.

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#### SCLEROSIS OF THE LIVER.

This affection is generally denominated "Hob-nail Liver," Gin-drinker's Liver. It consists of interstitial inflammation, or inflammation of the intervening connective tissue of the liver,

chronic in its progress, and resulting in induration of the whole organ, characterized by emaciation, gastro-intestinal catarrh, and jaundice. The first stage of this affection consists of a hyperaemia of the connective tissue, which soon develops into brownish red connective tissue elements, and the liver increases in size and density; the cells, being pressed upon, undergo fatty degeneration. The increase in size gives the liver the uneven or nodular appearance. The portal circulation, as well as the hepatic circulation, is interfered with, obstructed, obliterated, function ceases, the peritoneum thickens, adhesions are formed, the whole organ is rendered more or less useless, and if persistent, death soon closes the scene.

The prognosis of this affection may be briefly stated: It terminates in death. The stage is usually about one year.

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### AMYLOID LIVER.

**SYNONYMS.** Waxy liver; lardaceous liver; scrofulous liver; albuminous liver.

This is an infiltration into the substance of the liver of albuminoid material resembling starch, hence its name, amyloid. The disease seems to result from a prolonged suppurative process, more especially of the connective tissue, or of bones. The enlargement is generally uniform, and presents a translucent appearance, and has a doughy consistence. The deposits generally begin in the arterioles and capillaries, which are eventually closed by the fatty deposits. There are no peculiar symptoms characteristic of the condition in a systemic sense, differing from other diseases of the liver. The progress may be rapid or slow, but the prognosis is generally unfavorable.

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### CARCINOMA OF THE LIVER.

**SYNONYM.** Hepatic cancer.

A peculiar morbid growth, which progressively destroys the hepatic tissue, characterized by indigestion, emaciation, jaundice, ascites and terminating in death. It is a disease of advanced life, and occurs at the age of sixty years or thereabouts; sometimes at forty, or earlier. The differentiation is peculiar, for there are general uneasiness, pain, weight, jaundice, ascites, hemorrhage, feebleness, cold, dry skin, pinched features, dejected, worn expres-

sion of the countenance. The nodules are tender, and the pains are of a shooting, burning character; enlargement of the organ—and this disease always ends in death.

The conditions described present rather a forlorn prospect for relief. The medical profession has relied upon medication for a cure, and, as stated, their conclusions are generally terminated by the patient passing to other climes. Their efforts have been signal failures. It would seem like presumption for an Osteopath to make suggestions. It surely would be were it not that a success is probable in many instances that would be utterly denied by the medical profession. The promotion of tissue changes can only take place from the presence of healthy arterial blood, and as this system offers the only means of sending it to the parts, if the case is taken in time (before a breaking-down of the tissue occurs), the chances are better than from any other agency.

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#### TREATMENT FOR AFFECTIONS OF THE LIVER.

When it is considered that all the conditions enumerated result from capillary congestion, and that this results from obstructed circulation, it will be readily seen that to cure or arrest the progress of disease it is essential to remove the pressure causing the congestion; the tissue changes take place normally at once, and health in the parts is restored. It can also be most clearly seen that medicines have no power to exercise, therefore can not remove the obstructions causing these difficulties. The first thing to be done in these liver troubles is to start the forces that are prevented from acting by the presence of either foreign substances in the capillaries, due to fibrinous precipitation therein, or interference of outflow through the veins, caused by external pressure. These obstructions must be removed, whatever they may be, so that a free inflow of normal arterial blood can be had—so that waste tissue can be gotten rid of. In order to remove the waste it must be dissolved, and that can not be done without contact with the fluids drawn from the blood as it passes through the capillaries; so that a necessity is apparent of promoting the onward flow through the capillaries, that this may be naturally accomplished. If the blood is obstructed in the arterioles by pressure, the remedy is, remove the pressure causing it; and if in the veins beyond the capillaries, remove the pressure there; and if the arrest of the circulation is due to pressure upon



a nerve or nerves distributed to the parts which control the capillary circulation, take off the pressure from it. This done, and kept off, health is the inevitable consequence. Many diseased livers may be cured by this process. Simply the contact of healthy arterial blood tends to soften down the hepatized tissue, and the channels (the lymphatics) carry away the excess, and restoration to a normal condition ensues, the same as is seen in hepatization of lung tissue in the sequelae of pneumonia.

The learned Osteopath, one skilled in manipulations, can not fail to comprehend the necessity of starting at the vaso-motor area and moving all obstructions as found all the way down the neck, chest and body, through the various means illustrated in this work, and demonstrated by actual experience to be the proper course to pursue. The ribs are lifted from their drawn condition by the proper stretching of the muscular fibers, as results from manipulations of arms and lower limbs—including abdominal and dorsal muscles; the liver and abdomen as well, by mild vibratory movements over the liver itself. Care should always be had in ascertaining the condition and character of tissue involved. Too much care can hardly be exercised in the treatment of this organ, for the medical fraternity have had their special attention directed to the liver since they learned that mankind possessed that sort of a commodity, and, as a general thing, accused that organ of being more or less concerned in all other pathological conditions of the human system; hence all medication has been directed toward the liver and the movement of the bowels.

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## DISEASES OF THE BILIARY PASSAGES.

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### CATARRHAL JAUNDICE—ICTERUS.

This is a catarrhal condition of the bile ducts, an inflammatory condition of the mucous membrane of the bile ducts and duodenum as well, producing derangement of stomach, yellowness of the skin, itching, mental depression and feverishness, and usually due to eating too frequently or overloading the stomach with food or drink, debauch, pressure from any cause, or defi-

ciency of normal secretion or lack of elementary constituents.

**SYMPTOMS.** A distressed, painful feeling in the epigastrium, coated tongue, nausea, impaired appetite, looseness of the bowels, perhaps slight feverishness, eyes yellowish, jaundiced conjunctivae and skin assuming a yellowish cast; the stools are light-colored or clay-colored, colicky pains in the bowels, urine dark-colored, heavy and loaded with biliary elements, urates, etc. The surface of the body is generally cold, the heart's action slow, the mind depressed, and a perceptible tenderness on pressure of the epigastrium. The liver is sore to the touch.

#### THE TREATMENT.

As the liver possesses such important functions in the human economy, it requires more than an ordinary notice, but as this disease is due to arrest of function, we do not need to enter minutely into the anatomical and physiological description of this organ at this time, but will simply delineate the treatment indicated. That there is some arrest of circulation of the fluids can not be questioned. All of the ducts become thickened; an arrest of elimination of elements is apparent, due to arrest of the onward normal flow of the fluids in the substance of the liver itself; the solar plexus fails to receive its nerve influence from the splanchnics, and confusion reigns supreme. To correct this condition stimulate the vaso-motor area, including the pneumogastric; lift all of the pressure off of the neck muscles, raise the clavicles, the chest muscles, stimulate the dorsal region in the usual manner, lifting the arm at the same time. Treat the abdomen by vibratory movements, gently at first, increasing the force gradually; knead the liver and bowels, and treat the lower limbs thoroughly, emptying the venous blood by taking off the pressure around the saphenous veins in both limbs, and move the muscles of the back thoroughly, upward, outward. Give the colon thorough treatment, beginning at the ilio-caecal area. Treatment should be thorough, mild and deep, especially in reference to the liver and abdomen, and should occupy twenty to thirty minutes, at least every other day. Leave off food until the digestive organs are restored to a condition that it can be digested. Use plenty of water at stated and regular intervals, and occasionally flush the bowels, for apparent reasons: that of diluting poisons and precipitated chemical elements—to promote elimination. Give due attention to splanchnics.

## BILIARY CALCULI.

This condition is usually characterized by hepatic calculi, gall stones, hepatic colic, caused by concretion lodged in the ducts. These concretions originate in the gall bladder, and are derived from the constituents of the bile itself. Cholesterine is the chief constituent—crystallized precipitate. These stones are found, as a rule, in the gall bladder or cystic duct; sometimes in the liver, though rarely, and in the hepatic duct. These are manifest by being expelled, or an attempt at expulsion, for their passage produces extreme pain, piercing, agonizing, in the region of the gall bladder or ducts, spreading over the abdomen, right chest and shoulder; the muscles of the abdomen become cramped and tender, the pulse becomes small and feeble, the skin cool, cold perspiration stands out all over forehead and body, anxious face, spasmodic rigors, trembling at times, and convulsions are a common accompaniment. These paroxysms continue until the calculi pass through the duct, which may be several days, but when the calculi reach the duodenum, perfect relief ensues suddenly. Restoration rapidly ensues as a rule for that time. Sometimes, however, jaundice follows the paroxysm, and should impaction of the calculi take place, perforation, consequent upon inflammation, ensues, and this is followed by peritonitis, the calculi being discharged by the intestines, stomach, or may be through the abdominal walls.

This affection need not be mistaken for anything else if the proper observation is made. The pains diverge from the hepatic region, accompanied with nausea and vomiting. The actual passage of these calculi may be demonstrated by passing the discharges from the bowels through a sieve. There may be several hundred of these calculi in the gall bladder, and their passage affords no immunity from future formations.

## THE TREATMENT.

The Osteopathic manipulations consist of the usual splanchnic and dorsal treatment. The raising of the right arm strongly upward, lifting the ribs off of the liver, and the firm, gentle kneading of the liver and bowels, should be done, preceded first by a proper manipulation of the vaso-motor area. Hot applications to the side and over the hepatic region should be employed to relax all tissue, followed by manipulating in a careful manner the liver itself, and that followed by thorough vibratory pressure over the liver and abdomen. The passage of the gall stones will be

greatly facilitated by these manipulations, and proper treatments should follow until no more formations of stones occur. This is the best prophylactic treatment for these secretions.

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## DISEASES OF THE KIDNEYS

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The normal condition of the secretions of the kidneys is essential to health, and the facilities are so numerous to ascertain the deviation from that state to abnormal, that the doctor has no excuse for not knowing the actual condition of this secretion. The kidneys being the eliminating organs, removing from the blood such ingredients as are not essential to the welfare of the whole body, they should be kept in good working order all the time.

The kidneys are two large glandular organs, situated in the upper and posterior portion of the abdominal cavity, and are concerned in the excretion of the urine. They consist of an outer or cortical substance, and an inner medullary substance. The medullary substance consists of from 8 to 18 pyramids (the malpighii), the apices of which, the papillae, project into the calices of the ureters. The pyramids are striated, and in places send narrow projections into the cortex—the medullary rays, or pyramids of Ferrein. Between the pyramids are extensions from the cortex—the columns of Bertini. The cortex, by the penetration of the medullary rays into it, is divided into the medulla and the labyrinth. The secreting structure of the kidneys consists of long tubes, beginning in an expanded extremity, the capsule of Bowman, which invests a tuft of blood vessels, the glomeruli, and constitutes, together with this, a malpighian body; extending from this is the proximal convoluted tubule, then comes the spiral tubule, then the loop of Henle, consisting of a descending and an ascending limb; then the distal convoluted tubule, which terminates in the collecting tubule. The blood vessels of the kidneys divide into two sets of branches, one supplying the cortex, the other the medulla. The secretion is dependent upon the nerve action controlling the kidney, the healthful condition of the organ itself, as well as the normal condition of the blood vessels carrying the blood to and from it. The secretion is carried on by direct control of the sympathetic nervous system, and the



execution largely depends upon the spinal nervous system, direct connection being made through the renal splanchnic. The solar plexus is also an important factor in the secretory process of this organ.

The Osteopath reaches this organ through a system of manipulations described elsewhere in this book. Pathological conditions in general are corrected by a course of stimulation or desensitization of sympathetic and other nerve terminals, and reflex action is produced. If there is excessive pressure, by any means, upon the vaso-motor area, and continued for some time, an increased action of the kidneys ensues; or if there is undue nervous excitement mentally, there is increase in the flow of the watery secretion, but of lower specific gravity, thus demonstrating to a certainty the nervous influence over the kidneys, as well as their complete action being under nerve influence, as well as the amount of blood distributed to the kidneys and the especial influence over secretion. This nervous influence is largely under the control of the operator, directed especially to the vaso-motor area and along the dorsal region in the vicinity of the tenth, eleventh and twelfth dorsal spines, on either side. The control of outflow is had by treating downward, and excessive outflow by treating upward. These treatments are duly explained elsewhere.

#### THE URINE AND ITS TESTS.

The normal quantity of this varies from thirty to fifty ounces daily. An increased action of the sweat glands lessens the amount accordingly, and so do the various forms of fevers. Cold weather, on the contrary, other things being equal, increases the quantity secreted. There is usually less passed during the night than in the daytime. The normal color is a light amber, due, it is said, to the presence of urobilin. The color deepens or varies according to circumstances in pathological conditions. There is more or less precipitation in normal urine, after standing in a vessel for a time, owing to the presence of mucus. The normal reaction is slightly acid, owing to the presence of acid phosphate of soda, uric and hippuric acids. After meals it may be neutral or alkaline. The normal specific gravity varies also, from 1.015 to 1.020, always low when an increased quantity is passed, and high when the quantity is diminished. The odor is peculiarly aromatic, and varies according to the food eaten, smelling of garlic or onions after eating these vegetables.



PLATE LXI.—Chest Expansion and Spinal Stimuli.



There are certain organic and inorganic substances held in solution in the urine. These, of course, are drawn from the blood. There pass about three to six hundred grains of urea daily, containing uric acid from 6 to 12 grains; urates of sodium, ammonium, potassium, calcium and magnesium from 9 to 14 grains; and of phosphates of sodium, etc., from 12 to 45 grains, and the chlorides of sodium, etc., from 150 to 240 grains daily.

The following methods of testing the urine are regarded as standard:

I. Quantitative Test for Urea by the Hypobromite of Sodium (Davy Method).—Fill a graduated glass tube one-third full of mercury, and add one-half drachm of the twenty-four hours' urine; then fill the tube evenly full with a saturated solution of hypobromite of sodium, and close it immediately with the thumb; invert the tube and place its open end beneath a saturated solution of chloride of potassium. The mercury flows out and is replaced by the solution of salt; nitrogen gas is disengaged from the urea in the upper part of the tube. Each cubic inch of gas represents 0.645 grain of urea in the half drachm, from which the amount passed in twenty-four hours may be calculated.

Urine containing an excess of urates and uric acid on cooling precipitates them, viz.: "brickdust deposits" in "pot de chambre." Heat dissolves them to a certain extent.

II. Test for Urates and Uric Acid by Nitric Acid.—Nitric acid deprives the soluble neutral urates of their bases, and produces at first a faint, milky precipitate of amorphous acid urates; adding more nitric acid, the still less soluble red crystals of uric acid, resembling cayenne pepper, are deposited. Put a small quantity of nitric acid in a test tube, and pour the urine carefully down the sides of the tube upon it, and a zone of yellowish red uric acid and altered coloring matter will form at their union, and a dense, milky zone of acid urates above this, which, however, dissolve upon agitation. (See also Albumen Test.)

III. Quantitative Test for Uric Acid by Nitric Acid.—To three ounces of the twenty-four hours' urine (after being slightly acidulated, boiled and filtered while hot) add one-tenth as much nitric acid; place in a cool place for twenty-four hours, then collect the deposit of uric acid on a weighed filter, wash it thoroughly, and dry at 212 deg. F. The increased weight represents the uric acid in part excreted, approximately.

IV. Test for the Earthy and Alkaline Phosphates by the Magnesium Fluid.—Heat or liquor potassae increases the



cloudiness caused by earthy calcium and magnesium phosphates. Acetic or nitric acid clears it by dissolving them. To two ounces of urine add one-third as much of the following solution: Take magnesiï sulph., ammonii chloridi puri, liquor ammoniæ, each one part; aqua destil., eight parts. If the precipitate has a milky, cloudy appearance, the quantity of phosphates is normal, and if creamy, the phosphates are in excess.

V. Test for the Chlorides by Nitrate of Silver.—To a convenient quantity of urine add a small amount of nitric acid, to prevent the formation of the phosphates and other salts of silver; filter this, if cloudy; add to this one drop of a solution of nitrate of silver (1 part to 8), and the precipitate of white, cheesy lumps of chloride of silver denotes that the amount of chlorides are normal; if, however, only a faint milkiness occurs, the chlorides are diminished.

VI. Test for Mucus by Acetic Acid and Liquor Iodi. Comp.—Mucus alone is not visible, but causes cloudiness, from having entangled mucus or pus corpuscles, epithelium, granules of sodium urate, crystals of oxalate of lime, and uric acid in various amounts. Add to the urine a little acetic acid, or in addition a few drops of liquor iodi. comp., when threads and bands of mucin are made visible. The addition of nitric acid dissolves them.

VII. Test for Albumen by Heat and Nitric Acid.—Slightly acidulate the urine, if necessary, by addition of nitric or acetic acid, and boil. This causes a white deposit of coagulated albumen, which is not dissolved by nitric acid, unless the acid is in excess. Nitric acid causes a white deposit of coagulated albumen, which is dissolved if a large excess of acid be added. A delicate test is to put the nitric acid in the tube first, and then gradually pour the urine down the side of the tube upon it, when a white zone or ring of coagulated albumen appears. (See Tests III., IV., XI., XIII.)

VIII. Test for Albumen by Picric Acid (Saturated, Watery Solution).—Pour a quantity of urine into a test tube, and add the picric acid solution, drop by drop, and, as it passes through the urine it is followed by an opaque white cloud if albumen be present. The test is very striking and beautiful. If cloudiness appear some time after, instead of at the time, it shows nothing. This test will not detect as small an amount of albumen as heat or nitric acid.

IX. Nitric-Magnesian Test for Albumen.—The fluid is prepared by mixing one part of pure nitric acid with five parts of a

saturated solution of the sulphate of magnesium, and filtering. One drachm of the reagent is poured into a perfectly clean test-tube; the urine should be allowed to trickle slowly down upon the fluid; if albumen be present in an amount as small as one one-hundredth of one per cent., this test will show a compact, dense, white layer. This is one of the best and most reliable tests for albumen.

X. Quantitative Test for Albumen (Approximately).—Add a few drops of nitric acid to a proportion of the urine, and boil it; set this away for twenty-four hours, and the proportionate depth of the resulting deposit is the comparative indication, viz.: one-fourth, one-half, etc. For minute traces of albumen, Millard's fluid may be used. It is a delicate test, and requires care. The fluid consists of a glacial carbolic acid (95 per cent.), two drachms; pure acetic acid, seven drachms; liquor potassae, two ounces.

XI. Test for Blood by Heat and Nitric Acid.—Heat or nitric acid causes deposit of albumen, with the coloring matter changed to a dirty brown.

XII. Test for Blood by Heat and Caustic Potash (Heller's).—Heat the urine and add the caustic of potash, and heat again. The phosphates are thus precipitated, taking with them the coloring matter of the blood, which imparts a dirty, yellowish red color to the sediment viewed by reflected light, and when seen by transparent light gives a splendid blood-red color. Neither the coloring matter of the blood nor that of the bile is precipitated with the phosphates, so that coloration of urine which shows this reaction can not be ascribed to the presence of the latter pigments. When the quantity of blood in the urine is very large it is of a dark-brownish red, and after standing forms a coagulum at the bottom of the vessel. Caution.—Heat or nitric acid causes coagulation of the albumen in pus.

XIII. Test for Pus by Liquor Potassae.—Add to the urine an equal volume of liquor potassae (or preferably to its deposit from standing), and when well mixed a viscid, gelatinous or fluid mass is formed, which pours like the white of an egg or jelly.

XIV. Test for Bile by "Fuming" or Red Nitric Acid.—Allow a specimen of urine and a few drops of "red fuming" nitric acid to gradually intermingle on a porcelain dish, and a "play of colors," green, blue, violet, red and yellow, or brown, occurs if biliary coloring matter be present.

XV. Test for Bile Pigment by Pure Hydrochloric Acid

(Heller's).—Put into a test tube about 1.6 fluid drachm of pure hydrochloric acid, and add to it, drop by drop, just sufficient urine to distinctly color it. The two are mixed. Then drop down the sides of the test tube pure nitric acid, which will underlie the mixture of hydrochloric acid and urine. At the point of contact between the mixture and the colorless nitric acid a handsome "play of colors" appears. If the underlying nitric acid is now stirred with a glass rod, the set of colors which were superimposed upon one another will appear alongside of each other in the entire mixture, and should be studied by transmitted light. If the hydrochloric acid, on addition of the biliary urine, is colored reddish yellow, the coloring matter is bilirubin; if it is colored green, it is biliverdin.

XVI. Test for Sugar by Liquor Potassae and Heat (Moore's).—Add to the urine half its volume of liquor potassae. (Caution.—This may give a white, flaky precipitate of the earthy phosphates, which should be removed by filtering.) Now boil. This causes, first, a yellowish-brown color, becoming darker if much sugar is present, due to glucic, and finally to melassic acid.

XVII. Test for Sugar by Subnitrate of Bismuth, Liquor Potassae and Heat.—Add to the urine half its volume of liquor potassae, and then a little bismuth subnitrate, shake and thoroughly boil. The presence of sugar reduces the salt, and black metallic bismuth is deposited; or, if but little sugar, a gray deposit occurs. (Caution.—Albumen must be absent.)

XVIII. Test for Sugar by a Solution of Cupric Sulphate, Liquor Potassae and Heat (Tromer's).—Add to the urine a few drops of a solution of cupric sulphate, and then its own volume of liquor potassae. (Caution.—On first addition a light greenish precipitate occurs, which, on further addition of the reagent, if sugar or certain other organic matters are dissolved, becomes a transparent blue liquid.) Now boil, and a yellowish precipitate of hydrated cupric suboxide, occurring at once, denotes the presence of sugar. (Caution.—Albumen must be absent.)

XIX. Quantitative Test for Sugar by Pavy's Solution: Towitz, Take cupric sulphate, gr. 310; neutral potassic tartrate, gr. 640; caustic potash, gr. 1,280; distilled water, fl. oz. 20 (keep corked).—Take of Pavy's Solution, recently prepared, 200 minims or a multiple of this quantity, and boil in a porcelain dish; while boiling, add minim by minim, from a measured portion of the twenty-four hours' urine, and it gives a yellowish precipitate of hydrated cupric suboxide, if sugar be present. Note carefully



the gradual disappearance of the blue color, and when completed (best determined by looking through the margin of the fluid against the white porcelain dish), from the amount of urine used, determine the amount of sugar passed daily, the quantity of urine containing one grain of sugar being just sufficient to reduce the 200 minims of the cupric solution.

XX. Quantitative Test for Sugar by Fermentation and Specific Gravity.—Take two measured specimens from the twenty-four hours' urine, and to one add a little yeast. Place each specimen in a temperature of 75 deg. to 80 deg. F.; in twenty-four hours, fermentation having destroyed the sugar in the one containing the yeast, the difference in the specific gravity of the two specimens expresses the number of grains each ounce of the urine contained, approximately.

XXI. Whitney's Reagent (a solution of ammonia-cupric sulphate)—Volumetric Test Solution for Glucose, from the Laboratory of Lewis Chemical Company, New York.—This is the most convenient preparation, as well as a most reliable test for sugar. Full directions on each package. Enough for thirty-five tests for \$1.00, with test-tube pipe and all in a compact form. Secure this by all means. We have tried it.

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### CONGESTION OF THE KIDNEYS.

This means an increased amount of blood in the vessels of the kidneys; when arterial, it is called active congestion; when venous, it is called passive congestion, and is characterized by pain, frequent desire for urination, scanty, high colored, containing albumen or blood. The kidneys are generally enlarged, increased in weight and redness, showing points of vascularity, corresponding to the malpighian corpuscles or bodies, and sometimes an echymosed condition. A catarrhal condition of the ducts are usually common, shedding their epithelium.

The causes are generally attributed to "taking cold," or from passing some irritating substance from the kidney, such as turpentine, copaiba, cantharides, nitrate of silver, carbolic acid, and even chlorate of potash. This occurs also during eruptive fevers, continued fevers, or injuries of the kidneys—traumatic. If traumatic or mechanical, and continues for some time, there is an increase of connective tissue, and consequent induration, when contraction results, and is generally followed by a disease known as "Bright's" Disease of the Kidneys.



The active variety is characterized by pain in the kidneys, and over and around, and usually in, the upper lumbar region, and following down the ureters into the bladder, producing irritability of the bladder, pain in the genitalia, a constant pressing desire to urinate, but not generally pain during act of urination. The urine is high colored, and occasionally bloody, with fibrin, casts and albumen. Constitutional symptoms are, headache, slight nausea, sometimes vomiting, and a general feeling of uneasiness and discomfort. If not arrested, inflammation ensues, with its consequences. The passive form is usually accompanied with lung or heart trouble, although it may be masked, which may be followed by a dropsical condition; scanty, high colored urine, with more or less albumen therein.

#### THE TREATMENT.

The early recognition of either of the above conditions, with the proper treatment, results in better satisfaction as to consequences than when discovered after the tissues are broken down. The renal splanchnic, influenced by manipulations at the twelfth dorsal area, is the starting point for effective results of Osteopathic treatment. It must not be forgotten that all sources of irritation should be looked after. All sorts of stimulants should be withdrawn, medication given up, and complete reliance placed on natural agencies to properly adjust the system to itself. Instead of taxation of the digestive system, it should be sparingly indulged, and due regard had to pure water. The use of the popular springs' water for kidney troubles need not be considered, although may be used if desired by patient, yet there is nothing better than clear, pure water in any condition of the system, as it holds the elements in solution, and constitutes about seventy per cent. of the fluids of the body. A free use of it will not be amiss.

The patient should be in a recumbent position, so that access may be had to the back, and the dorsal muscles should be so manipulated as to remove all undue contractility. The lumbar area deserves special attention, for in the region of the twelfth dorsal we reach terminal filaments that communicate forces to the kidneys. The pressure should be firm, steady, upward, and outward, and embracing all of the lumbar area, increased by lifting the limbs and pressing strongly on the sides of the lumbar spines with thumb and fingers of one hand while raising the limbs, as directed elsewhere. The patient lying on either side, this treatment may be made by pulling one limb at a time backward, and

at the same time pressing against the spine in the lumbar region, letting the pressure be lowered about an inch each pull back of the limb. These movements should be slowly done. The kneading and the vibratory movements will be applicable in this affection. Due regard to the general circulation, and means to promote it, should not be neglected. In the chronic form, where albumen is seen in the urine, due regard should be had to freeing the venous circulation in the lower extremities. Where there is hemorrhage, it will be excellent practice to restrain the amount of pressure of blood in the kidneys by cording the lower limb, on either side, tight enough to prevent the return of the venous blood, for half an hour or so every day. Leave the cord on until the whole limb is filled with blood, and it looks dark and tight, then suddenly remove the cord and manipulate the limb upwards until the natural color returns. This relieves pressure of blood in the kidneys, promotes aeration of the blood in the surface, and gives other organs rest. This is called the hemaspasia process of cure. Many chronic and acute affections are relieved thereby, when properly applied. Rheumatism, epilepsy and paralysis have been successfully cured thereby. It is a means of "flushing" capillaries and forcing onward the obstructed flow of blood and other fluids, when all other means had failed. It is well to have plenty of arrows in your quiver when enemies are present. The cording of the arms successively may also be resorted to with equally satisfactory results. The atrophied condition of limbs is greatly benefited by the use of hemaspasia.

Study the character of the case, the conditions, necessities, kind of treatment needed in any given case, and utilize it for the benefit of the afflicted. It is the business of the physician to cure his patient, if possible, and he is not discharging his duty in ignoring any means necessary to the cure of the case, that another doctor might have used and succeeded. What "might have been done" comes too late, when death shall have closed the avenues to the soul. The manipulations alluded to will generally be sufficient to restore to health the affections of the kidneys, if resorted to in time, and many a case has been restored when all other means have been tried and failed to relieve. Osteopathy is a wonderful means of restoration in such cases.

## ACUTE PARENCHYMATOUS NEPHRITIS.

SYNONYM. Bright's Disease.

This is an acute inflammation of the uriniferous tubes, characterized by scanty, high colored urine, usually smoky colored, attended with more or less fever, perhaps dropsy, a constant nervous phenomenon, resulting from uraemic poisoning of the blood.

The pathological conditions are: engorged, swollen, more or less vascular condition of the kidneys, with red color of the organ itself, and in the chronic stage remains red, large, especially the cortex; the tubules are engorged and filled with epithelium, blood corpuscles, and fibrin. The capsule becomes easily detached, and is more opaque than normal.

The symptoms are a gradually developing dropsical condition, anaemia, dyspnoea, weakness, which, however, usually begins suddenly. There are generally fever, nausea, and violent and persistent vomiting, dull pain over and in the kidneys, following the ureters, with frequent desire to urinate; diarrhoea, skin harsh and dry, pulse quick, tense and full. Very soon dropsy appears, the eyelids and face become puffy, swollen, and a general oedema of the extremities ensues, and, if following scarlatina, there are from the start great pallor and general debility. The uraemic symptoms may develop any time during the attack. The urine is of high specific gravity, and looks like the washings of beef. Albumen is present in large quantities, and the microscope reveals casts of the uriniferous tubules, blood corpuscles, uric acid, urates, and oxalate crystals, and epithelium. The duration is usually about four weeks.

The complications may be pericarditis, pleuritis, peritonitis, pneumonitis, uraemia, retention and decomposition of the urea in the blood. It affects both kidneys, whereas acute nephritis may only affect one. The history of the disease reveals the nature of it, and distinguishes it from that of albuminuria.

The prognosis is usually favorable. The patient should be enjoined from exercise, taking absolute rest, and abstaining from food or stimulants. Water should constitute the only drink used.

## THE TREATMENT.

Manipulations from the occiput to the coccyx are needed once a day, especially in the lower dorsal and the lumbar area, using slow, steady pressure and movements, as well as move-



PLATE LXII.—To Stretch Chest Muscles and Cord.





ment of muscles upward and outward, taking off the pressure from heart and lungs, then using vibratory manipulations over loin area for several minutes at each treatment. Bending the spine strongly backward while lying on the side, using fingers as fulcrums and limb as lever, treat upward from sacro-lumbar junction. A mild general treatment should be made at least every day in acute attacks of this affection. The bathing in warm water, wrapping patient in a blanket, should receive daily attention in this affection. Put all the work on the skin and lungs possible. The rest of the kidneys is essential, therefore take off the pressure. The renal splanchnic is to be suddenly shocked each treatment, as shown elsewhere in plate. The patient should have his mind as much as possible removed from his condition. The dread of Bright's Disease of the Kidneys is not to be thought of, if avoidable.

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### PARENCHYMATOUS NEPHRITIS.

**SYNONYMS.** Chronic Bright's disease of the kidneys; croupous nephritis; chronic tubal nephritis; chronic albuminuria; the large, white kidney.

This disease is due to inflammation of the cortical and tubular structure of the kidneys, and is characterized by albuminous urine, dropsy and increasing anaemic attacks and acute uraemia. It rarely occurs after forty.

**PATHOLOGICAL ANATOMY.** A large white, or yellowish smooth white kidney, usually twice its normal size, and the capsule nowhere adherent to the organ. No appreciable alteration in the medullary substance, the color being normal. The convoluted tubes are irregularly dilated and thickened, and filled with broken-down granulated epithelium and fibrinous casts, and in pronounced cases there is fatty degeneration of the tubular epithelium, a migration and multiplication of fatty transformations, the product of the increased pressure of the veins, especially the fluid that exudes therefrom.

**SYMPTOMS.** It comes on slowly, and is seldom recognized until the dropsical appearance sets in. This is first noticed under the eyes and in the face, and extends all over the body, producing difficulty of breathing, due to accumulation of water in the chest. The patient becomes pale, debilitated; cardiac palpitation, headache, vertigo, difficult or defective vision; urine scanty, high-

colored, albuminous, showing under the microscope tube casts and granular epithelium; fatty degeneration occurs, fatty tube casts and oil globules increase. Irritable bladder is a very common accompaniment, and constant. The retinal changes are peculiarly characteristic. Many cases are easily diagnosed by the ophthalmoscope. The changes include the serous swelling of the disc and surrounding retina, hemorrhagic extravasations, dirty, white splotches, representing fatty degeneration, and dilatation of the veins and capillaries, with fatty degeneration and sometimes hyaline thickening of their walls.

The course of the disease is not alike progressively downward, for there will be periods of apparent recoveries, when no complaint will be made, periods of remission, following very severe attacks. It is a most treacherous affection, for when the patient and friends have the most buoyant hope of recovery, all of a sudden there is an acute uraemia, which results fatally in a short time. The ordinary treatment has for its object the checking of the waste of albumen by the use of internal medications, constantly fighting effects, leaving the causes untouched, to undermine the vital forces. This almost universally fails to ameliorate or to cure a single case.

#### THE TREATMENT.

It is most surely a nervous affection, originating in the medulla oblongata, due to pressure at the origin of the renal splanchnic, which emerges from the twelfth dorsal vertebra, but having its origin in the medulla. Reflex influences only cure this congestion, and the effects cease. Neither astringents, diuretics, nor diaphoretics do the work. Opiates arrest tissue change, and are therefore injurious. Give the kidneys rest. Take off the pressure and send in healthy arterial blood. This is the only remedy.

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#### INTERSTITIAL NEPHRITIS.

SYNONYMS. Sclerosis of the kidneys; contracted kidneys; small, red kidney; gouty kidney.

This is a chronic process, resulting ultimately in a shrunken kidney, in which there has been extensive destruction of the tubular substance and overgrowth of intertubular connective tissue. It is characterized by frequent voiding of large amounts of pale, albuminous urine of low specific gravity, and disorders of

the gastro-intestinal, as well as the nervous systems, with a strong tendency to cardiac hypertrophy and changes in the vessels. There are cases, however, in which albumen is never found in the urine. It is a disease of middle life, coming on from forty to sixty years of age.

**CAUSES.** This affection is usually the result of long-continued worry and anxiety. Uric acid in the blood is most generally the prime cause, and this is due to capillary congestion and venous obstruction to the return circulation. Alcoholic beverages and the use of drugs and medicines doubtless contribute their influence to its production, and are largely responsible for the large increase of this affection. The most common of these agents are salicylic acid and kindred drugs.

**PATHOLOGICAL ANATOMY.** A reduction in size of the kidney, the capsule becoming thickened, opaque and adherent. The surface of the kidney becomes granular, with cysts of various sizes, transparent in color, scattered irregularly over the surface. The tissue becomes tough, shown on section to be resistant; the cortical substance is thin, caused from atrophy, presenting only a line or two in thickness, while the connective tissue is greatly thickened, compressing the tubules into mere threads, and the glomeruli are grouped together in bunches, due to the wasting of intermediate tubes. The color varies from a darkish brown to a yellowish gray, according to the amount of blood in the organ. The left side of the heart is generally affected, hypertrophied, and there is generally a hypertrophied condition of the muscular walls of the arterioles throughout the body, which sooner or later undergo fatty degeneration. This occurs to a greater or less extent in every tissue in the body, and sometimes followed by atrophy, as is a common thing observable in the retinal tissue—a sclerosis in the nerve-fiber layer, which is commonly denominated retinitis albuminuria. It is also stated that “ganglionic centers” undergo fatty degeneration and atrophy.

**SYMPTOMS.** It is insidious in its approach, there being no special characteristic, early indicatory symptoms whereby it can be certainly diagnosed. Cardiac troubles and frequent passages of urine of a pale color should be looked upon as suspicious indications of approaching trouble in the kidneys. Albumen may or may not be present at all times, but there are generally epithelial cells and hyaline casts.

No dropsy occurs, except a slight puffiness under the eyes, oedema of conjunctivae, and disorders of vision, with forcible



cardiac action and high arterial tension. Attacks of vertigo, headache, disordered vision, epistaxis and dyspeptic conditions, with progressive anaemia, persistent dyspepsia, occasional vomiting, regardless of food; stupor, drowsiness, violent itching of the skin, tremors, convulsions, epileptic seizures or apoplectic attacks; the body weight declines, the skin becomes dry and scurfy, the strength fails, shortness of breath ensues, and the patient dies of uraemia.

COMPLICATIONS. Bronchitis; pneumonitis; pleuritis; pericarditis; cardiac hypertrophy.

This disease of the kidneys is usually a protracted one, and as it becomes more advanced there are added cardiac distress, dyspnoea, palpitation and reduplication of the first sound. Dimness of vision is a characteristic symptom, being the first symptom recognized generally by the ophthalmoscope. Hemorrhages into the retina are not infrequent, hence sudden blindness. Auditory disturbances also occur—ringing in the ears, dizziness, and more or less deafness.

PROGNOSIS. Extremely unfavorable.

#### THE TREATMENT.

Interstitial nephritis is most likely to be confounded with parenchymatous nephritis. The difference between the two conditions, pathologically, does not necessitate a difference in the treatment Osteopathically, as the attention is not to be directed so much to the changes in the structure, as described, as in the character of the secretions, and even they do not call for any material change in the treatment, as all treatment should be directed to the removal of the pressure, which results in the peculiar changes in the secretions, depending upon the structure involved.

The operator should insist upon mental quietude, and endeavor to promote normal circulation of all the fluids in the body, remembering that chemical changes take place in the various tissues of the body according to the nature and peculiarity of the particular tissue involved; and, as the healthfulness of the structure depends upon the character of the elements in the arterial blood, due regard should be had not only to keeping the blood healthy, but to keeping all the channels free through which said fluid passes. To give drugs with a view to changing the character of the tissue through which they pass, as an ingredient of the blood, is to presume more than is possible, and hence the for-

lorn hope that patients manifest when informed they have Bright's disease. •

The only thing that can be done is to remove the obstructions to the circulation of all of the fluids in all parts of the body. Begin at the neck, free the venous system there, take off the pressure from the nerves involved, then see to it that the chest is free from all pressure on the breathing apparatus (the lungs); then regulate the action of the liver, bowels, and see to it that the skin is performing its natural functions; and take off the pressure from the nerves that especially control the kidneys. See to it that care and anxiety are removed from your patient. Keep him quiet and free from anxiety and worry. Coordinate the nerves forces—take off the pressure everywhere.

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### AMYLOID KIDNEY.

SYNONYMS. Waxy kidney; lardaceous kidney.

These peculiar conditions and names applied to diseased conditions of this organ seem more or less confusing, yet each pathological condition has its peculiar characteristics, this one being an infiltration into, or a degeneration of, the very structure of the blood vessels, in the connective tissue, of which the degenerative process results, first, in an increase in size, then an atrophied condition ensues; the deposits of amyloid substance take place along the renal vessels, so that on section it presents a homogeneous mass of a lardaceous appearance; then atrophy takes place. All these changes are due to pressure.

Many complications are liable to be associated with this disease, but the prominent perceptible changes take place in all of the rest of the system. The interference of the functions of this organ is always attended with more or less grave consequences.

The characteristic symptoms are a general wasting away of the whole system, oedema of the lower extremities, ascites, with an increased flow of pale, watery urine of low specific gravity, most generally containing albumen and hyaline casts, these being transparent.

The complications are discernible, as each particular pathological condition shows what structure is involved by the condition of the urine itself generally. There is a liability of an excessive, persistent diarrhea of a watery character, due to the changes in the intestinal canal. There is, almost always, in this disease,

associated with it, some suppurative disease. The differentiation is made by the history of the case and the peculiar characteristics of symptoms presented in the various structures involved.

These diagnostic symptoms determine the prognosis largely, for when the system presents such a degenerative condition as that mentioned, results are only a question of time. Structural changes in any secreting or excretory organ can only be regarded as of a very grave character. The importance of early detection of the condition, and the proper treatment instituted to restore to a healthful one, is of the first consideration. The trouble, we believe, is due to imperfect digestion of carbonaceous material, due to deficiency of pancreatic secretion, as well as undue and continuous pressure on the venous system in the kidney or some vessel carrying the blood from the organ itself.

#### THE TREATMENT.

The only indication in this case is to remove the obstacle, and to supply the system with the elements thus destroyed, so as to restore the equilibrium of forces, due to disturbance of, or deficiency of, the molecules. This can do no good without a proper restoration of the normal circulation of all of the fluids in the body, through their natural channels, which is to be effected by repeatedly removing the pressure and furnishing proper food.

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#### PYELITIS—SUPPURATIVE NEPHRITIS.

This is a suppurative inflammatory condition of the pelvis of the kidney, due to a catarrhal condition, which is a result of obstruction of capillary stasis of blood. There are lumbar pains, irritability of the kidneys and bladder, the urine alkaline, or neutral in reaction, milky in appearance, and if pus has formed, fever is present and exhaustion rapidly ensues, and pus will be found in the secretion voided.

Obstruction of the ureters by renal calculi; pressure from a tumor or the prolonged use of the bromides tend to produce this condition. It may result from rheumatism or as a sequela of infectious diseases. The pustular condition is due to the increase of the alkaline constituents of the blood, due to disturbance by pressure or otherwise, of the pneumogastric division of the nervous system. The lack of equalization of forces is the cause of these disturbances in the connective tissue involved.

## THE TREATMENT.

The rational method of treatment is found only in the restoration of coordination of these forces. To lay down any specific course of manipulations would not be proper, for treatment does not consist so much in the manipulations of certain parts as it does in how these are made. Routinism is the bane of all treatment in all schools—automatism. To back down and refuse to treat a case simply because some one has said "there is no cure in Osteopathy for it," shows the deficiency of mentality or practical application necessary to use the science, or a concession that it is not adequate to the performance of the object assigned. If there is no cure for a thing, why say anything about it? If all diseased structure is due to obstructed circulation, how to take off the pressure seems to be the *sine qua non*. Hence the thing to do is to devise means to take off the pressure. These pathological conditions would not exist if the physician understood the methods used by Osteopaths, so as to remedy the trouble before the degenerative processes had set in and produced structural changes that make reparation impossible. There are, however, many conditions pronounced hopeless by the medical side of the profession that yield to this system favorably.

## ACUTE URÆMIA.

SYNONYMS. Uraemic poisoning; uraemic intoxication; uraemic coma; uraemic convulsions.

DEFINITION. A group of nervous phenomena, which occasionally develop during the course of acute or chronic Bright's disease, and other maladies, the result of the retention or accumulation in the blood of an excrementitious material, supposed to be urea, the flow of urine being either normal, lessened, or increased.

CAUSES. Suppression of urine, from acute or chronic Bright's disease, probably more frequent in chronic parenchymatous nephritis; cystic, tubular, or cancerous kidney; the puerperal state; operations on the uterus, bladder, urethra, or rectum.

SYMPTOMS. Uraemic intoxication is the result of the failure of the kidneys to perform their normal function of eliminating some one of all of the poisonous elements of the urine. The toxæmia may develop suddenly, by a convulsive seizure followed by coma, or slowly and gradually. Usually the attack is preceded



by a decrease in the urinary secretion and slight or marked oedema in various parts of the body; although it must be borne in mind that in rare instances, during, or immediately prior to, the appearance of the uraemic phenomena, the normal urinary flow has been largely exceeded. The acute outbreak may manifest itself in a variety of ways.

**Gastro-Intestinal Variety.**—The patient suddenly experiences attacks of vertigo, pallor of face, nausea and vomiting, with fever, the temperature varying between 100 and 103, pulse tense and rapid, respiration hurried, and the urine scanty, with low specific gravity; unless symptoms are promptly relieved convulsions may occur, followed by coma and death, or drowsiness supervene, followed by coma, which is really nothing but a profound sleep. Rarely an acute maniacal outbreak follows the gastro-intestinal symptoms.

**Convulsive Variety.**—Without any appreciable prodromes, epileptiform convulsions, with or without loss of consciousness. The convulsions may consist of a single paroxysm, or a succession of fits may follow one another at interval of a few minutes or several hours, the patient in a condition of more or less profound insensibility during the intervals. The fits almost exactly simulate true epilepsy. In this variety the temperature is high, from 103 to 106 or more, the pulse rapid, with or without tension, the respirations quickened. Coma followed by death is a very common ending of this variety of uraemia, or after a profound sleep of hours the patient gradually recovers his usual health. Alcoholic excesses are responsible for many of these attacks.

**Cerebral Variety, or Uraemic Coma.**—Develops either gradually, with an increasing drowsiness associated with headache, and irritability of temper (mild mania). Nausea, vomiting, and rise of temperature, often reaching 105, rarely 107, with rapid, full pulse, or the patient may fall suddenly into a condition of profound coma, the symptoms closely resembling an apoplectic stroke, except the high temperature. Uraemic coma is always accompanied with rise of temperature and stertor. "The stertor is peculiar; it is not the 'snoring' of apoplexy, but a sharp, hissing sound, produced by the rush of expired air against the teeth or hard palate." (Loomis.) The respirations are accelerated, the pulse rapid, but minus tension. This variety may suddenly terminate fatally with a convulsion, or a deepening coma with prostration and cold, wet skin, with oedema of the lungs, or, rarely, gradual recovery.



PLATE LXIII.a.—Chest Expansion and Back Treatment.



**DIAGNOSIS.** Uraemic conditions closely resemble a number of conditions in which convulsions and coma are prominent symptoms. Much valuable assistance is obtained in the diagnosis by a knowledge of the condition of the kidneys. Always obtain a specimen of urine at once and subject to an albumen test at least.

Another valuable aid is the temperature record. Acute outbreaks of uraemia are always associated with a rise of temperature, the result of the irritation of the heart centers and not due to an increased arterial pressure.

Cerebral apoplexy may be mistaken for uraemic coma, or the reverse. The chief points of distinction are, in the latter the attack is usually in patients suffering from dropsy, and that the coma is not sudden in its appearance, but is generally preceded by other nervous phenomena, such as headache, vertigo, dimness of vision, obstinate vomiting, and convulsions. Again, the uraemic stertor is a sharp, hissing sound, while that of apoplexy is "snoring." Apoplexy is followed by paralysis; uraemic coma is not.

An epileptic seizure is preceded by the sharp cry and extreme pallor of the face, the countenance being dusky in uraemic convulsions.

**PROGNOSIS.** A very grave condition. The prognosis depends upon the amount of retained poison, the length of time it has been retained, and the condition of the organs of elimination.

#### THE TREATMENT.

Regulate the vaso-motor nervous system, then give a general treatment, using considerable time in the manipulations over and in the region of the renal splanchnics, vibratory, and kneading deeply. Stretch the serrati muscles in the mesentery plexus of nerves by drawing the body well backward and pressing strongly against the sides of spines at the same time. The treatment should be thoroughly done each time, and not in haste. These cases require care, as well as thoroughness. The mesentery circulation is usually at fault, especially the venous.



## CYSTITIS.

SYNONYM. Catarrh of the bladder.

DEFINITION. An inflammation of the mucous membrane lining the urinary bladder, acute or chronic in its course, and of either a catarrhal, croupous, or diphtheritic character; characterized by rigors, moderate fever, hypogastric pain, frequent but scanty micturition, and severe vesical tenesmus, the urine containing pus (pyuria).

CAUSES. Acute Variety.—Long retention of urine; foreign bodies in the bladder, pyelitis; urethritis; blows over the pubes; myelitis, and secondary to fevers or diphtheria. Chronic Variety.—Following the acute variety; retention the result of enlarged prostate or a urethral stricture; calculi; gout; chronic Bright's disease.

PATHOLOGICAL ANATOMY. In acute catarrhal cystitis there first ensues hyperaemia of the mucous membrane of the entire or a portion of the bladder, manifested by redness, swelling, and oedema; followed by an increased secretion of the small glands at the base of the bladder, and an increased growth and consequent desquamation of the vesical epithelium, together with a copious generation of young cells; if the hyperaemia be decided, rupture of the capillaries and extravasation of blood occur. If the inflammation be intense, suppuration of the submucous connective tissue may result, and ulceration of the mucous membrane permit the submucous abscesses to empty into the bladder; if of a croupous or diphtheritic character, the morbid anatomy does not differ from the same variety of inflammations in other mucous membranes.

In chronic cystitis "the mucous membrane is thick, blue-gray in color, and very tough. Muco-pus and viscid mucus are formed in large quantities upon its surface. The muscular wall of the bladder may sometimes be half an inch thick, and the fasciculi give a ribbed appearance to the internal surface, called the "columnar bladder." The hypertrophy of chronic cystitis may be eccentric or concentric. In some cases diverticuli are formed, in whose walls are dilated and tortuous veins. In nearly all cases bacteria are found in abundance." (Loomis.)

SYMPTOMS. Acute Cystitis.—The onset is usually abrupt, by rigors, slight fever, loss of appetite, sleeplessness, a feeling of depression; frequent micturition, though the urine is only voided drop by drop, and its passage followed by distressing vesical

tenesmus, the result of spasm of the bladder; pain over the pubis and in the iliac regions, of a dull character, at times becoming sharp and agonizing. Burning along the urethra adds to the distress of the patient. The urine is cloudy, of an alkaline reaction, and at times is foetid, the microscope showing epithelium, pus, and red blood corpuscles.

Chronic Cystitis.—The onset is gradual and insidious, and is excited by some obstacle to the evacuation of the urine, such as stricture, the presence of a stone in the bladder, or enlargement of the prostate gland. There are present dull pain, frequent but scanty micturition. The urine is alkaline, containing large amounts of muco-pus or pus; on standing it deposits a thick, glairy, viscid sediment, in which, under the microscope, triple phosphates and large pus corpuscles, extremely regular both in contents and in shape, may be detected. Although the quantity of urine voided by the patient is small, yet if immediately after micturition the catheter is used, several ounces of fetid, cloudy, alkaline urine may be removed. Patients with chronic cystitis usually present decided constitutional debility and mental depression. Severe local pain, emaciation, and occasional bloody urine indicate ulceration of the vesical mucous membrane.

DIAGNOSIS. Pyelitis has lumbar pains following the course of the ureters, frequent micturition without the severe vesical tenesmus; the urine, although cloudy, has an acid or neutral reaction.

PROGNOSIS. The acute variety is, as a rule, good, being controlled by the cause. The chronic continues for years, and after hypertrophy of the bladder is incurable.

#### THE TREATMENT.

The treatment should be directed to the spine, from the eighth down, including the sacrum, and movement of the dorsal and lumbar muscles outward and upward; while the patient lies on the side or stomach there should be strong pressure on either side of the spines and pulling the limbs backward so as to spring the spine forward, stimulating the abdominal viscera so as to free the portal venous circulation; then, with the patient lying on the back, lower limbs flexed so as to thoroughly relax the abdominal muscles, manipulate the lower abdomen by a kneading process, vibrating gently, persistently, thoroughly, for several minutes, care being taken to have the bladder emptied before treatment is begun. The congestion being removed by taking off the

pressure, let the patient rest. Occasionally wash out the bladder with warm water, and repeat the manipulations every day, or even oftener for a few times; then every other day. The bowels should be regulated, even if the syringe and warm water have to be used daily. There should be divulsion of the sphincters with the bivalve or digits if contracture exists there.

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### INCONTINENCE OF URINE.

This is a most annoying affection, characterized by inability to hold the urine, involuntary discharge of urine, usually in children, and is most troublesome at night, the patient "flooding the bed" every night. Some are supposed to do so from habit. Much anxiety on the part of mothers is exercised to prevent it, and many physicians have tried to cure the so-called habit. The affection has but one leading characteristic—"an unconscious discharge of urine during sleep." It is confined to child life—occasionally observed in adult life.

The affection is due to irritation of the sympathetic nerve filaments that supply the mucous membrane of the urethral canal, or reflexly from an irritable prepuce, due to phymosis, or prostatic enlargement. The sacral and hypogastric plexuses of the nervous system control the bladder and urethra, and as the separation of the motor, from the sacrum, from the sympathetic, brings into prominence the sensory, relaxation of the sphincter urine muscle ensues, and the water runs off without stint or limit only to the point of completely emptying the bladder. The sacral plexus area is hyperaesthetic, and when the patient lies on the back the pressure irritates the terminal sacral filaments, reflex effects follow, the sphincters relax, and the discharge occurs. Many have recommended elevation of the hips during sleep, and the only effect of that is to lessen the pressure.

#### THE TREATMENT.

The patient being a child, let the operator place it on the table or bed, face down, take hold of both ankles with one hand, place the other hand on the sides of the sacrum, with the fingers and thumb spread or applied to either side of the spinous processes of the sacrum, raise the feet, pressing at the same time against the sacrum, move the feet from side to side, then lower the feet and limbs to the level of the body; then repeat the same process, placing the fingers a little higher up the sacrum each



time the thumb and fingers shall have covered the whole lumbar region as high up as the last dorsal. Then begin low down on the sacrum with the fingers, and use rapid vibratory movements upward, following up and covering the same area. This is most effectual, and many cases are cured in two or three treatments. It should be repeated every other day, however, until a perfect cure is effected.

Where the affection is due to phymosis, circumcision should be performed, and the urethral canal treated with sounds until all irritation ceases, and this should be followed up with Osteopathic treatment as well. The Orificial Surgeon and Osteopath are alike in many things, and the one is sometimes as essential as the other. They are agreed in this, therefore ought to "walk together."

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### MOVABLE KIDNEY.

**SYNONYMS.** Floating kidney; wandering kidney; ectopia renis.

**DEFINITION.** A condition of the kidney, either congenital or acquired, in which the tissues around about the organ are so lax and the renal vessels so elongated as to permit the kidney to be moved in certain directions, causing a movable tumor in the abdomen.

**CAUSES.** The kidney is normally held in position by the layer of peritoneum which is attached to the anterior surface of its adipose capsule. In movable kidney, the adipose tissue in which the normal kidney is imbedded partly or wholly disappears. The renal vessels are in many cases abnormally long. Relaxation of the abdominal walls from pregnancy or other causes. The use of tight corsets or girdles about the waist; violence; increased weight of the organ from disease; the pressure of tumors growing in the neighborhood of the kidney; the traction of hernias. The condition may be congenital or acquired, more frequently the latter. It is far more frequent in women than in men.

**SYMPTOMS.** Floating kidney may and often does exist without any noticeable symptoms, the condition being unknown until accidentally discovered by the physician while making a physical examination of the abdomen. As a rule, however, patients experience a heavy, dragging pain in the abdomen, aggravated when



walking or standing. There are also present gastro-intestinal symptoms, more or less constant, with melancholia, aggravated by the mental anxiety the presence of a tumor in the abdomen causes the patient, in spite of the assurances of the physician that it is not a cancer. At times, from some unknown or unrecognized cause, the movable kidney swells and becomes very sensitive to the touch, and migrates a considerable distance from its normal position. Such an occurrence aggravates all the former symptoms mentioned. This condition has been ascribed to a twisting of the ureter and consequent retention of the urine in the pelvis of the kidney, or to localized peritonitis, or to a partial strangulation of the kidney from compression or twisting of its blood-vessels. Hysterical symptoms are frequently observed in women suffering from wandering kidney.

**DIAGNOSIS.** The possibility of dislocation of the kidney is to be recollected in determining the nature of obscure tumors within the abdomen. The late Prof. Austin Flint based the recognition of this variety of abdominal tumor on the following diagnostic points: "It is situated in the hypochondriac region. It has the size and shape of the normal kidney, and this may be determinable by palpation, which is most advantageously employed by placing one hand over the lumbar region and the other in front on the abdominal walls, and then making counter-pressure from one hand to the other. It is generally movable, and in some cases the organ can be restored to its proper situation." Other tumors are to be excluded by the absence of their diagnostic characters.

**PROGNOSIS.** It is a rare occurrence to have a fatal termination from movable kidney *per se*.

#### THE TREATMENT.

Inasmuch as there is no attachment, in this condition, to the peritoneum and the adipose capsule, the indications are to be met. If a relaxed abdominal wall is permitting depression of the kidney, it must be corrected. If a tumor is causing the trouble, it must be removed. If extreme tenderness exists, that may be relieved by removing portal congestion, and then require deep inhalations, and use upward pressure with both hands, from below upwards, as exhalation takes place, having the patient lie on the back, with limbs flexed. Treat dorso-lumbar region thoroughly three times a week, and especially use pressure about the second lumbar, as the limbs are strongly pressed or drawn backward, both at the same time; the patient being recumbent, lying on the

face, the arm of the operator placed under both limbs above the knees, with the thumb and fingers of one hand pressing the spine, raise the limbs as strongly against said pressure as the patient can comfortably endure; hold that position for a moment, then swing the limbs from side to side two or three times, then lower the limbs on the table, then repeat said move, each time the fingers being moved down the spine, clear to the lower end of the sacrum. These processes should be gone through with three times each week for several weeks, or even months.

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### RENAL CALCULI.

**SYNONYMS.** Nephro-lithiasis; gravel; renal colic.

**DEFINITION.** Renal calculi are concretions formed by the precipitation of certain substances from the urine, around some body or substance acting as a nucleus. Their presence may not be recognized until one or more attempts to pass along the ureters, when an attack of renal colic results; or, by irritation, pyelitis is produced; or, more rarely, they are voided by the urine without exciting any symptoms. By gravel is meant very small concretions (sand), which are often passed in the urine in large numbers.

**CAUSES.** Occur at all ages; frequent before the fifth year, and from five to fifteen. Males are more liable than females. A special liability seems to exist in some families, but the precise etiology of calculi is not yet determined.

**VARIETIES.** 1. Uric acid, as calculi and gravel, and especially associated with the gouty diathesis. 2. Urates, chiefly urate of ammonium; nearly always in childhood. 3. Oxalate of lime or mulberry calculus; characterized by hardness, roughness, and very dark color. 4. Phosphatic calculi form as frequently in the bladder as in the kidney, and present a chalky or earthy appearance. 5. Alternating calculi, consisting of alternate layers of two or more primary deposits.

**ANATOMICAL CHARACTERS.** In structure, a urinary calculus usually consists of a central nucleus, surrounded by the body, and outside of all there may be a phosphatic crust. The nucleus may or may not be of the same material as the rest of the stone, sometimes being a foreign body, mucus, or blood. A section generally shows a stratified arrangement, or it may be partly or completely radiated.

**SYMPTOMS.** The clinical signs are those consequent on the results of their presence, to-wit: renal hemorrhage, renal congestion, inflammation terminating in abscess, pyelitis or pyelonephritis, cystitis, or renal colic. The symptoms begin abruptly, by severe, agonizing pain in the lumbar region, following the ureters into the corresponding groin and thigh. Pain and retraction of corresponding testicle; also of glans penis. Face pale and features pinched, the surface cold and damp. Irritability of the bladder, the urine passing in drops containing some blood. So severe is the pain at times that the patient may faint or pass into unconsciousness, or have a general convulsion. If both ureters are obstructed, uraemic symptoms will arise. The paroxysm usually terminates suddenly after some minutes or hours, the stone escaping into the bladder.

**PROGNOSIS.** Renal calculus is attended with many dangers. It may produce extensive disorganization of the kidneys, or its passage along the ureter may prove fatal. If the stone be very large, or if more than one, the prognosis is graver. Calculus is a disease very apt to recur. Renal sand (gravel) and small concretions may, after more or less delay, be voided with the urine.

#### THE TREATMENT.

The operator will direct most of his attention to the relief of the pain during the passage of the stone. Cause the patient to breathe deeply, and as exhalation takes place use efforts to knead the kidneys so as to favor the onward movement of the calculi. Occasionally stretch the abdominal muscles by pulling the lower limb or limbs backward, using considerable pressure from the last dorsal vertebra, and along down through the lumbar region, thereby fully stretching the abdominal muscles over the mesentery vessels and nerves, taking the precaution to regulate the circulation of the blood through the vaso-motors. Relief occurs as soon as the passage of the calculi is effected. The kneading of the kidneys will be somewhat painful to the patient, but may be done by being gentle and seizing the opportunities as the exhalations take place, as the abdominal muscles are then relaxed. General treatment should be given at intervals of two or three days, to promote the normal action of the secretory apparatus, through normal circulation of the blood, which is the natural preventive of precipitations in the kidneys.



PLATE LXIII.*b*.—Different Position of Plate LXIII.*a*.





## DISEASES OF THE PERITONEUM.

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The peritoneum is the serous membrane lining the interior of the abdominal cavity and surrounding the viscera contained in it. Beginning at the diaphragm, two layers proceed to the liver, then separate to inclose that organ, and open out over it and meet again on the under side and pass on as the gastrohepatic omentum, to the lesser curvature of the stomach; and meeting again at its lesser curvature, these two folds embrace the stomach and meet again at its greater curvature, passing down in front of the small intestine, forming the greater omentum. They are then reflected upward as far as the transverse colon, which they inclose, meeting again at the back of the colon, proceeding to the spine as the transverse mesocolon. Here the two layers diverge. The upper ascends in front of the pancreas to the under surface of the diaphragm, the starting point; the lower is reflected from the spine, over the small intestines, as the mesentery. From the root of the mesentery it passes into the pelvis, invests the upper part of the rectum, and thence reflects on the bladder, forming between the two (rectum and bladder) the retrovesical pouch. In women it is reflected from the rectum to the upper part of the vagina, and thence over the uterus, from which it proceeds to the bladder. From the bladder it passes up the anterior wall of the abdomen to the diaphragm. It completely envelops the stomach, liver, spleen, first portion of duodenum, the jejunum, ileum, transverse colon, sigmoid flexure, the upper part of the rectum, the uterus, and the ovaries.

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### PERITONITIS—INFLAMMATION.

Inflammation of the peritoneum may be either acute or chronic. It is characterized by fever, intense pain, tenderness, tympanitis, vomiting and prostration. It may be limited to any part, or it may involve the entire membrane. Inflammation of this membrane, as of all other parts of the system, results from congestion, or impeded capillary circulation. It may be caused by severe cold, protracted irritation, pressure or blows upon the abdomen, penetrating wounds, inflammation of intestines, or any organ that it covers; perforation of the stomach, intestines,

gall bladder, urinary bladder, vermiform appendix, or surrounding parts; septicaemia, pyaemia, erysipelas, or hernia, or injuries during parturition. The chronic form may result from tuberculosis, scrofula, cancer, albuminuria, sclerosis of liver.

The inflammation is the result of the arrest of the normal secretions of the membrane—the congestion of the capillaries—often to the extent of bursting and consequent extravasation of the tissues. The fibrinous exudation is of a dull and opaque character, and is adhesive, gluing the parts together. This is the stage of adhesive inflammation. If an exudation of serous fluid ensues, and is poured out into the peritoneal cavity (several gallons of which may occur), it is termed exudative inflammation. In this kind of inflammation, if recovery takes place, the fluid is absorbed, largely, but the unabsorbed portions form adhesions between the membranes of the different abdominal organs, often causing deformity of the parts involved. In the local form, where the inflammation is circumscribed, the same general conditions ensue, and results are the same, although circumscribed, of course. The chronic form follows the acute, or is associated with Bright's disease of the kidneys, sclerosis, scrofula, or tuberculosis. The membrane may be irregularly thickened or opaque, and adhesion having taken place in various parts restricts their action, and where encapsulation ensues, pus may form.

**SYMPTOMS.** Acute Form.—When idiopathic, the onset is usually sudden, ushered in by a chill of more or less severity and duration, followed by high fever, wiry pulse and tense, severe pain of a cutting or boring character, extreme tenderness over abdomen, so that the slightest touch of the abdomen intensifies the pain. The knees are flexed, and every effort of the sufferer is made to relax the abdominal muscles; decubitus ensues, the patient slips down in bed; intense distension of the abdomen is present, rigid, tympanitic, from the effusion; the bowels usually constipated; shortness of breathing, on account of the diaphragm being crowded up against the lungs, even as high up as the third or fourth rib, causing compression of lungs and heart, or displacement, and of spleen as well, and liver. Appetite is greatly impaired, nausea and vomiting are almost a constant feature, hiccough a not infrequent annoyance on account of the irritation of the terminal ends of phrenic nerve filaments that end in the under surface of the diaphragm. In some cases, with great inflammatory conditions, the temperature will be less than normal in the acute form. If from extension of the inflammation.

the pains are gradually increased and all of the symptoms are magnified; and if from perforation, all of the symptoms of shock ensue.

Under ordinary conditions and circumstances these symptoms continue for several days, then begin to decline, and a tedious convalescence takes place; or all of the symptoms suddenly grow worse, strength fails, surface becomes cold, pulse more rapid, collapse; with hypocritic face, anxious expression, pinched features, sunken eyes, drawn upper lip, pupils suddenly dilate, and death closes the scene.

Chronic Form.—There may be irregular chills, fever, sweats, distended abdomen, with constipation alternating with diarrhea, diffused tenderness, localized painful spots and hardness, colicky pains during digestion of food, gradual or rapid emaciation, dullness of the lower abdomen on percussion, from the presence of encysted fluid.

Too much care can not be exercised in diagnosing this sort of inflammation. It is nearly always associated with diseases and accidents of the abdomen, and should be readily differentiated from diseases of other tissues or other organs, such as acute gastritis, acute enteritis, rheumatism of abdominal muscles, the biliary colic or renal colic, all of which have distinctive and peculiar characteristics that need not be mistaken for peritonitis.

#### THE TREATMENT.

It will be remembered that the cure of this inflammatory condition must result from a removal of obstructions from the veins and lymphatics of the peritoneum itself. In acute peritonitis extreme soreness characterizes the disease, and as a consequence manipulations should be exceedingly gentle. The amateur will find that automatic manipulations do not answer his purpose here. The first step to take should be with a view to removing the pressure consequent upon the presence of feces in the colon. This may be accomplished by the free use of warm water from a fountain syringe, through a long tube or nozzle, passing it, if possible, beyond the sigmoid flexure, and filling the colon with the water, letting it remain for a few moments; then letting it pass off. After the patient rests a few moments, repeat this process. This not only serves to remove much of the pressure, but starts up the action of the lymphatics and veins, and the water enters directly into the tissue, dissolving the precipitated elements and carrying them off through the veins, thereby decreasing effusion, relieving tension, and as a consequence lessening pain. This



should be the first thing done. After removing the pressure in this way, Osteopathic treatment proper may be instituted. Begin at the vaso-motor area, regulating the peristalsis in the arteries, then endeavor to unite the forces through the splanchnics and pneumogastric nerves, treating the neck muscles, chest, dorsal and all the intercostales, so as to take off all of the pressure from the lungs and the chest cavity. The vibratory manipulations over the abdomen should be light, mild and carefully done. The movement of every muscle, superficial and deep, should be made, being particular to give the liver due attention, for it is through it that the portal system must empty its blood; the waste material must pass off that way also, so that it becomes a matter of necessity to open the channels that lead into this portal system. Cording the lower limbs, holding the blood in the veins for thirty to forty-five minutes, relieves pressure, lessens pain, oxygenates the blood in the limbs, until room has been made for greater expansion of lungs, on account of abridgment of action of abdomen from tenderness. Applied alternately to the other limb, when possible, will be found absolutely beneficial, especially when the soreness is so extreme as to inhibit Osteopathic manipulations over the abdomen. Stretching the arms high above the head and moving the muscles from the spinous processes, moving the arm as in treating the splanchnic region in other affections. These treatments should be repeated as often as every day, or oftener as conditions of patient demand them. The judgment of the operator should determine that matter.

As in other intestinal or bowel troubles, do not feed the patient until the digestive organs are in a condition to assimilate food. Would any one presume that assimilation would be possible under the conditions existing as above described? Open the closed-up channels that are holding the foreign material producing the present difficulty, and the appetite will assert itself in due time. Then let the patient eat, with judgment, of course. There will be no starvation, with plenty of water introduced.

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### DROPSY.

**SYNONYMS.** Ascites; dropsy of the abdomen.

**DEFINITION.** An infiltration of serous fluid into the peritoneal cavity, distending the abdominal walls, displacing viscera, embarrassing respiration, added to the cause producing it. Aside

from general dropsy there may be dropsy of the kidneys (nephritic), or heart (cardiac).

The principal cause of dropsy is mechanical obstruction of the portal system, from cirrhosis of the liver, diseases of the heart or lungs, pressure from tumors, cancer, or impediment to the circulation of venous blood.

**PATHOLOGY.** The quantity of fluid in the peritoneal cavity varies greatly, there being from a few ounces to many gallons; it is of straw or greenish color, having an alkaline reaction. The peritoneum becomes thickened, and presents a cloudy, sodden appearance, due to long contact with the fluid.

**SYMPTOMS.** Swelling to a greater or less degree of the abdomen, and constipation, due usually to pressure of the fluid upon the sigmoid flexure; scanty urinary secretion, due to pressure upon the renal vessels; difficulty of respiration, due to pressure upon or against the diaphragm; the umbilicus is forced outward.

**DIAGNOSIS.** This is easily formed by palpation, or holding the hand on one side of the abdomen and tapping with the fingers on the other side of it, when a peculiar wave-like impression is imparted to the other hand. If the patient stands erect the fluid tends to precipitate to the lower abdominal region, and percussion reveals a dullness over the site of the swelling, and a tympanitic sound above the swelling. This may be verified on the patient changing position. The differentiation may be readily distinguished from ovarian tumor by the history of the case; and from pregnancy, by the character of the enlargement; and from the distension of the bladder, by its changeable position; and from chronic peritonitis, by pain and tenderness, peculiar thickened abdominal walls, and association with tubercule.

**PROGNOSIS.** This is influenced largely by the cause producing the obstruction that produced the affection, which will be greatly influenced by the condition of the organs involved, as organic diseases of the heart, liver, kidneys, or lungs render it most unfavorable, while the idiopathic form usually terminates favorably in a few weeks or less.

#### THE TREATMENT.

The ordinary treatment for ascites by the medical profession is by medicines. When these fail, as they generally do, resort is had to tapping—the use of the trocar or the aspirator. Resort is generally had to such agencies as produce watery stools, or that act on the kidneys and skin, called hydragogues and diaphor-

etics, such as potassii aceta, podophyllin, jalap, digitalis, *et id omne genus*. It is evident that the removal of the accumulation of water should be effected. Acting upon this suggestion, the physician turns his whole attention to that object, and when it is removed, as is frequently done, the patient is reduced to such weakness as to present indications of collapse, and often dies from simply prostration.

The Osteopathic treatment for dropsy consists of the restoration of the normal circulation of the blood and other fluids of the organ involved. No pathological condition can possibly exist in the body when all of its channels, glands, and organs are in a normal condition, and the fluids are permitted to pass through them. This is an admitted fact. Now, as all of the processes of life are carried on through a coordination of the nervous system, our first attention should be directed to it. Whatever the organ involved, it will be found upon careful investigation that pressure upon the nerves terminating in that organ or tissue is the prime cause of the dropsy; now the effects extend to other organs and parts of the body, involving perhaps all of it. The treatment, then, consists in removing obstructions everywhere. Start the flow of fluids to moving. This is the only salvation—"the moving of the waters." It will be found that this fluid is the product of waste material confined in the tissues, due to the separation of the terminal sympathetic and motor nerve filaments, that is caused by the paralysis of said filaments primarily in some organ or vessel or gland. Our business is to find these obstructions and take off the pressure, keep them off by repeated efforts, and let nature perform its normal functions. We cure nothing. All we can expect to do is to adjust the system to itself, remove foreign and unnatural influences, and await effects—results.

The heart and lungs should be freed the first thing. Stimulate the vaso-motor area, remove all pressure caused by contracted muscular fibers in the neck; raise the clavicles, raise the arms successively, stimulate the cervical, brachial, dorsal, lumbar and sacral regions; vibrate thoroughly the abdomen, knead the bowels, liver and spleen, arouse general circulation in the lower extremities. Be sure to see to the venous system, that all obstructions are removed from them throughout the whole body. Stimulate the renal splanchnics and lumbar area, moving the muscles upward and outward from the spines of the vertebrae all down the back. Unite the splanchnic and pneumogastric terminals, so that these two forces—positive and negative—may

arrest the degenerative processes going on in the system. An excess of the alkaline element is predominant in the whole system, and this is neutralized by the union of the splanchnic and pneumogastric nerves in the solar plexus, effected through proper manipulations of the dorsal region and the sides of the neck. General treatment is usually demanded in all cases of ascites, and special treatment of the organs especially involved. Acidulated drinks will aid in neutralizing the alkaline elements, causing rapid elimination of the excess of fluids. This should surely receive our careful consideration. This is the first time that such an idea was ever suggested as a reason for the use of such an agent—an acid.

The treatment should occupy twenty to thirty minutes at each sitting, once a day. The lower dorsal needs due attention.

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## DISEASES OF THE INTESTINAL CANAL.

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### INTESTINAL INDIGESTION.

This may be termed intestinal dyspepsia—really duodenal indigestion, a failure of the normal secretions that are formed in the mouth and stomach, due to nervous failure in the salivary and peptic glandular systems, hence an incomplete formation of chyme. Not only is the deficiency of the formation in the glands named, but in the pancreas also, and perhaps in the biliary secretion, as it takes all of the secretions to make chyle. Add to this condition a complete or partial inactivity of the muscular walls of the intestines themselves, producing stasis, or lack of intestinal peristalsis, and we have a condition properly denominated intestinal indigestion, usually characterized by pain and distension and tympanitis, experienced several hours after meals, producing anemia and nervousness. The pathologists enumerate as causes: Imperfect diet, over-eating, use of tobacco; deficient amount of exercise, too much stimulus; diseases of the stomach, liver, pancreas, malaria. Not once saying that the secretions that digest food are at all concerned in the production. Here is where the whole trouble lies—nervous exhaustion. If the nervous system had performed its function, the secretions would have been in



proper proportion, quantity and quality, and no dyspepsia would have existed.

**SYMPTOMS.**—They are legion. The principal are pain, flatulence, borborygma, headache, loss of appetite, pains in the limbs, with frequent attacks of diarrhea, frequent colic. The chronic form is characterized by most of these, with increased marked nervous phenomena, depression of spirits, sleeplessness, headache, vertigo, ringing or buzzing in ears, cardiac irritability, numbness, tingling in the extremities, fainting, sometimes epileptiform attacks, harsh, dry skin, urine high-colored, uric acid and oxalate of lime precipitates, anaemia, emaciation, general distress, hypochondriacal.

#### THE TREATMENT.

Begin with the vaso-motor system, holding that area for a short time, free all of the muscles of the neck, raise the clavicles, shoulders and chest muscles by raising the arms, and treating the spine with the fingers as the arm is raised, pulling the muscles strongly upward and outward at each raise of the arm, as far down as the twelfth dorsal. Treat both sides the same way; then have the patient lie on the back, manipulate the liver, stomach and bowels slowly, thoroughly, deeply, gently, for fifteen or twenty minutes. Take off all of the pressure everywhere. The sphincter muscles of the lower bowel will most generally need attention, and should not be neglected.

The patient lying on the stomach, relaxing all muscles, the spine should receive special attention all the way down, and especially in the splanchnic region. The rotary manipulations along the spine, over the abdomen and liver, should be carefully done. Flushing the bowels every night, retaining the water, as much as a quart, will be of great benefit. Full, deep inspirations at stated periods, and as much as half a dozen inspirations at a sitting, every two to four hours, will aid in the recovery, the patient instructed to breathe through the nostrils, with mouth closed. Permit the moderate use of water, either hot or cold, but the victuals should not be "washed down" with water at meals, nor should they be eaten in haste. Thorough mastication is important. No piece-meals should be indulged in, and if only two meals a day were eaten it would be better. The diarrhea, when it occurs, should receive the reverse treatment—from the sacrum to the first lumbar, springing the lumbar region well back.

The pains in the bowels will be readily relieved by the splanchnic treatment; that is, raising the right arm high, and



PLATE LXIV—Treating Back, Lying on Couch.



pressing steadily, firmly, in the splanchnic region on the right side of the spinous processes.

The treatments should be done slowly and carefully, occupying from ten to thirty minutes, as often as every other day at least, until recovery. These maladies need no medicines. The positive and negative forces properly united, and all pressure kept off, are the means of cure that nothing can possibly supersede.

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### INTESTINAL COLIC.

This is a disease of the alimentary tract, having usually the same cause as intestinal indigestion, and only differs in character of paroxysms, being those of an acute pain, seemingly starting at or near the navel. It is relieved by the same kind of treatment (except those pains brought on from taking poisons).

Associated with this affection we may have various sorts of pain, and in different localities of the abdomen, so that it is essential that a proper differentiation be had or made regarding the true state of affairs.

Gastralgia, hepatic colic, nephritic colic, uterine colic, ovarian colic, and inflammatory disorders of the abdomen should have special attention. So also lead colic, which should receive the proper antidotal remedies, which are alum and morphia—so stated on good authority, yet Osteopathy is a more effectual remedy for the colic; then morphia need not be used, but the alum only.

### THE TREATMENT.

Take hold of the patient's right arm, stretch it strongly up to the side of the head, and at the same time use pressure with the fingers of the other hand on the right side of the spinous processes from the fourth to the eighth dorsal vertebra, letting the arm down quickly for a few times, as the fingers are lowered along the spine.

If there is other trouble, treat accordingly, as indicated, repeating as often as is required. There can be no iron-clad rules for the operator to follow. It is presumed that the general manipulations are sufficiently understood to qualify the operator to do whatever should be done in any given condition.



## CONSTIPATION.

This is a functional inactivity of the intestinal canal—a dormant or lessened peristalsis of the intestines and colon, usually attributed to biliousness. Yet it is said that a lack of biliary secretion produces constipation. The accusations against the liver are so numerous and groundless that it would be a great insult to the reader to even attempt to record them. It is not the liver's fault that it becomes torpid, nor is it its fault that the bowels do not get rid of the effete substances called feces. The commonly attributed causes are as groundless as it is possible to imagine. Dyspepsia, character of the food, diseases of the stomach, liver, malaria, lead poisoning, syphilis, have been enumerated as causes. The prime cause of inactivity or irregularity of action is the failure to respond to nature's suggestions. The irregularity of the movements is generally attributable to neglect on the part of the person. There is a tacit resignation on the part of the intestines to wait the convenience of the subject until the "next day," and thus a habit is formed which, duly cultivated, becomes fixed; then the patient complains of being constipated. The bowels are then moved only occasionally, once perhaps every three or four days, and then with much straining, distress, flushed face and cerebral congestion; or the bowels may be moved every day, but the stools are small and hard. These may be changed to partly formed stools, and retained in the rectum, causing much uneasiness, pain, vertigo, headache, mental torpor, palpitation of the heart and abdominal distension. The patient usually indulges the mental state that unless the bowels move once or more times each day something dreadful will happen, hence a resort to purgatives is had, and a habit is formed of moving the bowels therewith, and no movement occurs without such procedure. In the large majority of such cases, if the patient would wait, the actions would come around all right and regular. At any rate, our treatment will suffice, and no one need be constipated long; but cured of it and all of its possible consequences, without resorting to physics. The "regulator pellets," the "mild laxatives," and "the syrup of figs" may then be dispensed with. The evil consequences of these physics are equal to, if not greater, than the constipation.

## THE TREATMENT.

While it is said that the "fifth and seventh ribs may be turned a little," causing inactivity of the liver, we are not disposed to

believe such a statement as at all consistent with actual facts, and are not going to attempt to make believe such a thing in order to make it appear marvelous to cure constipation—"to set a rib," or "adjust an atlas," to take off the pressure (where it does not exist). Facts shall form the basis of our treatment, as well as the course to establish Osteopathy. This world has been controlled by ignorance and deception long enough, so far as treatment of disease is concerned at least, and in regard to causes as well. It seems like some are possessed largely of a desire to overstate the facts, and thus deceive for gain.

It is thought by some that the bile is the natural physic, and their constant efforts are directed to "acting on the liver" to cure constipation, as well as every other affection that flesh is heir to, and nothing seems "orthodox" unless a catharsis comes of it—in almost all cases. The regular doctor urges "a movement of the bowels" when his patient has a "malaria," when he has a colic, when he has a jaundice, when he has a diarrhea, flux, or is sick at the stomach. Think of it! The laity have no possible or even probable idea of the amount of imposition they suffer at the hands of physicians. Routine prescriptions, ranging from incompatible compounds to *podophyllum peltatum*, are gulped down the poor deluded victims' throats until they can't rest. All of which in no possible manner benefit the patients or effect a cure. The indulgence of such things is surely reprehensible, to say the least of it. These same medicine vendors denounce nature's own way of doing its own business, and if an Osteopath cures a case that has "suffered at the hands of many physicians," he is denounced as an infamous "quack." No law is too severe against him whom they thus stigmatize. The "world do move" nevertheless, and the "common people" are becoming alive to the fact that "there is a better way."

If it could be understood that peristalsis is the result of nervous influence, there would be little difficulty in seeing the philosophy of its necessity, as constipation is due to lack of proper nerve influence. That there are certain agencies which act by irritation of the mucous membrane, and some mechanically, is not questioned, but the normal action is what the Osteopath designs to establish to cure constipation. The how to accomplish that is what follows:

Place the patient on a stool, chair, or any way get-at-able; take hold of the right wrist, extend the arm upwards, place the fingers of the left hand against the sides of the spinous processes,

on the right side of the processes, press hard, holding taut, and suddenly lower the arm; then lower the fingers an inch or so, and proceed as before, covering the whole splanchnic area, beginning about the fourth dorsal vertebra. The neck should be properly extended, and the muscles duly manipulated, the clavicles raised, and the patient being on the back, the liver should receive treatment as prescribed elsewhere—the bowels kneaded from the lower right side, from the region of the ileo-cecal locality upwards, following the course of the ascending colon to the hepatic flexure, thence across the abdomen, to the left side, embracing the splenic flexure, thence down to the sigmoid flexure. This should be done several times, and the gentle tapping of the ends of fingers should not be lost sight of, nor omitted, following the same course, vibrating the abdomen for a few moments each treatment, always following the colon from its commencement to its ending in the sigmoid flexure, and vibrating in that direction likewise. The liver should be thoroughly kneaded at the same treatment, being from fifteen to thirty minutes in giving the treatment. If, upon examination, it be found that the sphincter muscles of the rectum are unduly sensitive and contracted, they should be divulsed thoroughly. It is a fact most thoroughly demonstrated, that irritation of the terminal filaments of the sympathetic nerves, by divulsion of the internal sphincter ani muscle relieves constipation, cures hemorrhoids and assists in curing more dyspepsia than almost every other method known. It aids in flushing the capillaries everywhere in the whole body.

The introduction of warm water by the aid of a fountain syringe is surely commendable, proper and right, even to flushing the colon two or three times a week. One ordinary glass tumbler full of water to every ten pounds weight of body should be drunk daily. Usually too little water is consumed, to be healthy. Remember that water is at least 70 per cent. of the fluids of the body, and that in order to hold the soluble material of the inorganic substances and disorganized material in solution so that debris may be disintegrated, carried off, ushered into channels especially set apart for that purpose, there must be a sufficient amount of water constantly introduced into the body as it becomes lessened by use or evaporation. These principles and directions carried out, will be satisfactory to both patient and doctor.

The manipulation of the first to fourth sacral: We turn the patient on the face, and move by vibratory movements on either



side deeply, firmly and persistently for two to five minutes—stimulating the nerve filaments that are distributed to and influence the sphincter ani muscles, relaxing them.

Sometimes there is a displacement of the coccyx, which produces hemorrhoids, constipation and other rectal disorders, which needs adjustment, and to set it right frequently corrects the whole difficulty. This is done by anointing the forefinger, introducing it into the rectum, turning the palmar surface posteriorly, curving upwards and backwards until the bone is reached, and then place the fingers and thumb of the other hand on the foramina of the last two or three sacral vertebrae, using considerable pressure to antagonize the finger placed on the inside of the rectum against the coccyx, and adjust it as needed; and when done close the thumb against the muscles and integument with considerable force, squeezing the tissue while removing the finger from the rectum. This stretches the sphincter muscles at the same time, which is usually found to be essential. This, by the way, is the Osteopathic treatment for piles (hemorrhoids), which should be repeated every five days, and will be quite effectual in very many cases. Rectal plugs are often useful also. It will be found that an occasional divulsion of the sphincter muscles conduces to a restoration of many ills that do not down with other treatment. It takes off the pressure and flushes the capillaries, and does unaccountable benefit in many ways, frequently curing many chronic as well as acute disorders. Among the acute disorders may be named flux. A full divulsion of the bowel (the sphincters) in case of flux, and an immediate flushing of the lower bowel with water as warm as can be borne, will invariably cure that affection in an incredibly short space of time. Our Osteopathic treatment, however, is so effectual that other means are usually unnecessary to resort to, or recommend.

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### CATARRHAL ENTERITIS.

This is placed alongside of bowel complaints, but with the addition of inflammation. It is a catarrhal inflammation of the mucous membrane of the bowels, or small intestines, accompanied with fever, tenderness, pain, and loose discharges therefrom. The locality involved gives the name to the affection—the duodenum being the seat, it is named duodenitis, etc.

It is characterized at first by a hyperaemic condition of the



mucous membrane and glands, followed or accompanied with pain, tenderness, swelling, or oedema; increased watery secretion, proliferation of the epithelium, peeling off of the mucous membrane, resulting in hemorrhage, and then followed by ulceration of the glands. These changes may involve the whole intestinal tract, involving Peyer's patches, and be confounded with the disease recognized as typhoid fever.

CAUSES. Like many other intestinal disorder, it is attributed to a specific virus, improper food, temperature of summer, exposure to cold and dampness, foreign substances ingested in intestines, such as fish bones, hard kernels of fruit, coins, stones, etc.

The similarity of symptoms in all inflammations of the intestinal tract renders them rather difficult of differentiation, and diagnosis uncertain, but a careful observer may distinguish this from typhoid fever by the prodromes in the latter, the gradual rise in temperature in typhoid fever, and the eruption; the points of difference in this from dysentery and peritonitis, by the distinct peculiarities of the two latter affections. The prognosis is generally favorable.

#### THE TREATMENT.

The treatment consists of thorough manipulations of the neck, stretching up, with hands at the occiput and under the chin, turning slightly while extending the neck, raising the clavicles, gently vibrating the abdomen, lightly at first, continuing the process for several moments; then turning the patient on one side, pressing the thumb and finger on either side of the spine with one hand, taking hold of the ankle with the other hand, gently pulling the limb backwards, pressing at the same time along the sides of the lumbar spines, beginning at the sacro-lumbar junction, and moving upward about an inch each time the limb is retracted. The pulling backward must be done very gently, for the pain will not permit severity. The splanchnic area should receive special attention next, treating back from the fourth dorsal to the tenth, pulling the arm up strongly each move made. The treatment should occupy about twenty minutes each time, and be repeated every six to eight hours. Flushing the bowels and drinking hot water, as directed for typhoid fever, should be observed strictly. For any fever, treat as directed in the vasomotor area three to five minutes.

CROUPOUS ENTERITIS—OR MEMBRANOUS  
ENTERITIS.

This is an inflammation of the mucous membrane of the intestines, of a croupous character, characterized by a whitish gray covering of the mucous membrane, firmly adherent and cemented together, and fastened to the intestine by rootlets dipping down into the intestinal follicles; characterized also by feverishness, soreness and distension of the abdomen, and pains more severe around the umbilicus, and tenderness, occurring in paroxysms, continuing for half an hour or so each time, lasting for a day or two, followed by looseness of the bowels, and each stool accompanied with tenesmus and severe pain, the stools containing mucus, with or without blood; and generally casts of mucus, cylindrical, like the mucous membrane of the bowels, come away in the discharges, leaving a feeling of raw soreness, although great relief ensues when these shreds or casts are expelled. This soreness may continue for a day or two afterward. These paroxysms may occur at intervals of a week or two, or they may not occur for longer periods—may be not for a year or two. The stool characterizes it from flux as well as from peritonitis. It is recognized as a most difficult disease to cure by the regular medical profession. A diet without fecal-forming material is recommended. It is said that it is a disease especially confined to adult life.

The causes are attributed to a peculiar state of the nervous system. That is singular, surely. What is that peculiar state of the nervous system? And yet opium and morphine, as well as hydrargyri chloridum corrosivum and liquor potassium arsenitis are recommended as prophylactics. Is it any wonder that the people are tired of doctoring?

## THE TREATMENT.

This disease requires a general treatment, beginning at the vaso-motor area. Hold it for two to five minutes, and then manipulate the neck carefully, slowly, deeply, moving all of the muscles, raising the clavicles, the arms slowly to the side of head, pressing on the sides of the spinous processes firmly, and down as far as the tenth dorsal, then treat up from the sacrum to the twelfth dorsal; then, with patient lying on the back, gently vibrate with the hand the whole abdomen, beginning low down on the left side, moving to the right with the hand over the whole body, easily, slowly and persistently for several minutes; then turn the

patient on the side, stretch the lower limbs backward, holding the fingers and thumb against the lower, lateral lumbar spines, moving the hand upward each time the limb is retracted. Treat the lower limbs carefully and thoroughly, and especially empty the saphenous and other veins of the limb. An all-round general treatment should be given once a day. Special treatment of the vaso-motor and treatment in lumbar area upward, and on abdomen by gently kneading and vibratory movements, may be used every four to six hours. Hot applications to the abdomen will not be amiss for the soreness, and hot water injections should be used once or twice a day. Give no food of any kind until the tongue cleans off and the patient feels hungry. Let the feeding go until nature demands it.

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#### DIARRHEA.

This affection is characterized by loose, alvine discharges, without tenesmus (griping), and generally due to functional or organic derangement of the digestive organs. It is frequently an accompaniment of typhoid fever, albuminuria, pyaemia, and tuberculosis. It is due to nervous shock, mental shock, atmospheric changes, change of diet, water, etc.

It may assume two forms—acute and chronic. There are recognized four divisions: Feculent Diarrhea, Lienteric Diarrhea, Bilious Diarrhea, Chronic Diarrhea.

Feculent.—That variety wherein feculent stools are discharged, attended after a short time with colicky feelings, pains, flatulency, with frequent desire to stool, and pain, relieved for the time by the stool. After four or more stools, they become lighter. This form is most usually the result of overeating, eating too rapidly, or ingesta of indigestible substances, and frequently from worms in the intestinal tract.

Lienteric.—This is characterized by frequent discharges of loose, undigested food—unassimilated food. The stools may contain mucus, covered with serum and bile, and may be mixed with undigested food. The peculiar characteristic of this form is that the patient emaciates rapidly, the irritable undigested food producing increased peristalsis, and all of the contents of the bowels are rapidly evacuated.

Bilious.—In this variety the stools are usually green or yellow, and passed with a scalding sensation at the anus, and more or less griping pains in the abdomen, owing to the excessive



PLATE LXV.—Showing Plate LXIV. Continued.





biliary secretion mixed with the food. These discharges may be accompanied with or without nausea or vomiting, and any of them may merge into a chronic form, or frequent attacks of the acute form assume a chronicity by their frequency and persistency.

Chronic.—The main peculiarity is the similarity of the stools to the acute, except the stools may be changed to a pale color and assume the characteristics of a flux and present dyspeptic symptoms. Continual anemic conditions, varied appetite and chronic dyspeptic conditions are often notable and persistent for years.

#### THE TREATMENT.

When considered in the light of comparison as regards efficacy in the cure of these affections, the Regular School treatment stands in about the same relation to the Osteopathic that the "tallow-dipped candle" does to the modern electric light on a dark night. Our treatment wholly eclipses any other ever discovered or known to humanity. If some people even now were to be told that diarrhea could be cured in five minutes, many cases of it, with a single treatment, they would at once say it could not be done, and denounce the proclaimer a fit subject for an insane asylum. To think of such a boon to humanity—a positive, proven fact—being spurned by those who "compass sea and land" to find some specific remedy that will surely cure diarrhea! To pass by this and denounce it as a "fraud" looks so unreasonable that we refrain from giving them the castigation they deserve. A trial—yes, even one correct application—of this science to this one condition alone will convince the most skeptical of its efficacy. The very many instances of entire immunity at once places this at the head of all heretofore known remedies. To think of the grief and tears of many mothers over the loss of little loved ones, whose small mounds mark their silent resting places in the lonely charnel house of the dead, who might have lived many days to cheer them in their declining years had they been treated Osteopathically! The thought of giving relief is that others may be spared a like fate through the new and natural method of curing disease! This volume will more than repay the purchaser for the outlay in the treatment of this one affection. To know how to relieve it is many times more valuable than a money consideration, even in the "summer complaints of infants." It will be a great relief to mothers to be in possession of a remedy that will cure their babies in so short a time, so easily, and with so little inconvenience to themselves, and without distress or annoyance

to the little one. Then, to know that the treatment is equally as efficacious for all ages only adds intensity to the interest therein.

While it may be a matter of interest to the manipulator to ascertain whether there are "slips in the vertebrae" or a "dislocated atlas," and to find "a cold spot" on the surface somewhere along the side of the spinal column, yet it will be a more satisfactory desideratum to know that diarrhea can be cured without even knowing that such are the probable diagnostic signs of the prevailing affection. That is another attempt to wrap the science in mystery and to egotize self. The facts in the matter are, the splanchnic and pneumogastric nervous systems are involved in this affection—and what does the laity know about the solar plexus or "the abdominal brain" any way? If the reverse current is turned on, the wheels turn in the opposite direction, and to know how to turn the "crank" is to know how to direct the force.

In all lienteric troubles there is an excess of negative power. The alkaline elements predominate, and what is necessary to be done is to turn on the other current—neutralize the alkalinity. And inasmuch as pressure below the solar plexus, along the mesentery plexus, reverses the motion (reverses the peristalsis), and that we control precipitation through pressure along the left side of the lumbar vertebrae, our salient point is at the first and second lumbar areas. We use pressure there with the hand, knee, or the fist or fingers, bending the body backward at the same time, holding it there for a moment or so; we start the forces the other way; that is, arrest the onward peristalsis at once. After a move or two backward, with pressure at the point mentioned, the bowel should be held or gently pressed for a few moments, or manipulated from the left side in the sigmoid flexure region upward very gently for a few moments. The patient, lying on the back, may be treated as follows: Standing at the side of the table or bed on which the patient may be, place the hands on either side of the spinous processes, at the dorso-lumbar junction; then, pressing moderately with the finger tips, pulling outward therewith, raise the body from the bed and hold it suspended, so that the back of the head and feet only may touch the bed, holding it for a moment or two, repeating same once or twice, then holding the hand on the abdomen a short time. This will usually suffice for an attack of diarrhea. For children, take hold of the back of the neck with open hand, holding the child so as to secure action, and with other hand holding the feet, lay the body (back down) across the knee, resting weight of body on the lumbar region for a moment

or so. This stretches the mesenteric plexus, through the spinal sympathetic filaments. The influence is conveyed, action is had immediately. While it is a demonstrated fact that these manipulations cure, it should not be lost sight of that there may be a necessity for looking after the spinal vertebrae, and we would not underrate its importance, yet in many instances the cause of the affection is not due to a "dislocation of one of the bones of the spine," or diarrhea would be continuous in such an event. Our motto is, "Take off the pressure" everywhere, in the application of the principles of this science. The nervous system controls the body, and interference with its action produces pathological results, and it is our business to see to it that all disturbances of it be intercepted, so that there be no interference whatever anywhere. The harmonious action of the whole body depends altogether upon the nervous system being free to act in all parts of the body. The nerves control the manufacture of all of the secretions, the assimilation of the material from the product of the food, the building up of the waste, and the removal and reformation of it into new products that go to reconstruct the blood; and a perfect coordination is essentially required to promote that harmony in the system denominated health.

In severe cases of several days' standing, where patients are greatly emaciated, rest in bed is necessary, so that nature may have time to recuperate her powers properly.

There should be due regard for a restoration of the fluids of the body that have been wasted, and as water is the essential solvent of all ingesta, it should be furnished in due proportion and at stated intervals, compatible with the conditions found, whether by oral or anal orifice, or both. The water generally is more suitable hot. As much as will assimilate or be taken up without irritation or discomfort, should be the guide as to quantity, and the effects watched, in any given case. Food should be administered according to the state of the digestive organs, but hot water will usually satisfy the demands of the system until the tongue cleans off and the salivary glands are ready to secrete the necessary ingredients to mix with the food.



## SPORADIC CHOLERA—CHOLERA MORBUS.

This is an acute catarrhal inflammation of the stomach and small intestines. The inflammation involves the mucous membrane, caused by the acrid secretions passing through and out of the intestine through the mucous membrane. It comes on suddenly, and with severe griping, abdominal pains, followed or accompanied with loose, watery stools, vomiting, cramping, cold, clammy perspiration, rapid emaciation, extreme thirst, feeble, rapid pulse, spasmodic cramping of the muscles of the abdomen and extremities, with increased prostration, often ending in collapse and death. It is extremely dangerous, baffling the skill of physicians and uninfluenced by medication. It is more liable to come on during the later summer months or in autumn, generally after the patient has been exposed to a cool atmosphere, after eating fruits, melons or trashy ingesta (a debauch), and usually in the early morning hours (about 2 o'clock A.M.) On account of its prevalence some years more than others, it is supposed that some specific cause induces it, or climatic influences tend to precipitate such a condition. Be that as it may, the condition of the person has much to do in its attack. There is no mistaking it for anything else. It has no uncertain symptoms. It completely takes possession of the person, like a thief in the night, stealing upon him at the dead hour of midnight, and grasping him at his very vitals, throws him into spasmodic muscular convulsions, rendering nerves and muscle and every tissue in the body wholly incapable of performing their normal functions. The discharges at first are the normal feces, but soon the tendency is to a watery consistency, increasing in whiteness, until finally the "rice-water" discharges become characteristic of cholera, hence the name, "cholera morbus." The patient rapidly loses strength and the body shrinks; cold, clammy sweat stands on the surface all over the body; pulse small and feeble; intense thirst is present, but liquids are ejected as soon as swallowed. A more doleful and distressed condition can not well be imagined, but this is no overdrawn description of the facts as they usually occur, often resulting in death in a few hours. The medical world has taxed its inventive genius for ages to discover a remedy that would cure this distressing and marvelously mortal disease, and found no specific in the way of medication until the Osteopath came upon the stage of life. If any evidence will convince the people or the medical fraternity of the efficacy of this system of healing, the cure

of cholera morbus ought to do so. It is the most complete success of anything ever discovered—the quickest, easiest, and therefore the best. There is such a similarity in this disease and Asiatic cholera that there need be nothing added to the description, nor need there be any difference in the treatment. The tendency of the watery portions of the blood to leave the solid constituents exists in both conditions alike, and the chemical affinity being restored cures the disease. The essential thing to do is to restore that affinity.

#### THE TREATMENT.

Place the knee or knees against the sides of the dorsal vertebrae at the junction of the dorso-lumbar vertebrae, take hold of the patient in such a manner as to bend the upper part of the body and lower extremities backward as far as the patient can comfortably bear, holding it in that position for a moment or two, and then let it resume its normal attitude; then repeat the process two or three times. Afterward place the hand next to the skin, and on the abdomen, pressing gently thereon for a moment or so, gradually increasing the pressure as the patient can bear it. This restores normal action of the bowels at once, arrests peristalsis, and starts the forces in the other direction. To stop the vomiting, should it not do so with this treatment, take hold of the right arm, raise it high above the head, pressing on the side of the spine hard, in the upper splanchnic region. These movements should be made slowly and steadily, giving the system time to respond before repetition of the move. The vaso-motor area should receive special attention in this affection. Treatment of the cervical region is especially recommended to equalize the circulation. The use of hot water is especially indicated, particularly the flushing of the bowel, having the patient retain it as long as possible. The introduction of the water through a rectal rubber tube several inches long is better than by the ordinary syringe nozzle, as desire to stool is thus avoided. Hot water drunk freely will be admissible also. Remember that the stream of water in the system has run out, and a replenishing is necessary to redissolve the precipitated molecules of the elements in the blood and tissues.

The splanchnic and pneumogastric nervous systems are the two prime factors to be considered in the treatment of many pathological conditions, and in no condition have we such brilliant results as in cholera morbus! A union of these two forces reversing the current, produces the most radical changes that can

be imagined. Reverse action is at once established, and the flow reversed, starts the fluids the other way, naturally. The whole matter lies in the movement of the current, and that depends upon which way the "crank" is turned (or the crank turns it). Where does the laugh come in now? The State Boards and legislative lobbyists, all of them combined, never can devise or produce a remedy that will be so effectual as is that of the Osteopath in the prompt cure of cholera morbus. What benefit is it to delineate minutely the symptoms and pathological changes of a disease and then guess at a remedy? Where is the use of standing by and watching the course of the destructive character of a disease and do nothing to arrest its ravages? That same State Medical Board will cause to be enacted laws "regulating the practice of medicine," and measures to arrest those who are as honestly endeavoring to ameliorate the sufferings of mankind as they pretend to be. What right have State Boards to select my doctor and dictate the kind of medicine I shall have thrust down my throat? If I could, I would, with one fell sweep, abolish in every State such legislative excrescences and unjust proscriptive enactments, and leave the people the right of choice.

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### ENTERO-COLITIS.

An inflammation of the mucous membrane of the lower portion of the ilium and commencement of the colon or large intestine. Ulceration of the intestinal glands takes place if allowed to run on, and then the affection becomes chronic.

There are usually fever, sickness at stomach and vomiting, a diarrhea, tenderness and swelling of the whole abdomen, severe or dull pain and considerable emaciation, due to general breaking down of the mucous membrane; follicular enlargement, Peyer's patches tumified and the black points projecting above the mucous membrane presenting an ulcerated appearance. In the chronic form an intensification of the hypertrophy involving the deeper structure ensues, ulcers coalesce, patches of mucus peel off, leaving the surface down to the submucous coat bare, raw, sore. This is a disease of children, producing restlessness, fever, thirst, loss of appetite, nausea, vomiting, semi-fluid stools, frequent, greenish, sour; attended with large abdomen, much emaciation, crossness on the part of the child, peevish, and a reduction to early prostration, and if allowed to run into a chronic form, presents a



sallow, unhealthy skin of loose appearance, it hanging in folds or drawn tightly over and around the joints, face peaked, abdomen large and tender, and several stools day and night, usually preceded by rumbling in the abdomen, severe pains; a sudden loud, gushing stool relieves the distress, and the little sufferer relapses into quietude for some time afterward. Many children suffer from this affection, and it is regarded as a very serious condition, and usually proves fatal under the regular method of treatment by physicians, the child wearing out gradually until death closes the suffering. The numerous compounds and astringents, and the carefully selected measures, fail to arrest the disease. Here again we see the magic influence of Osteopathy. The idea of expecting an astringent to pass through the long intestinal tube, and the various mixtures of abdominal and intestinal secretions, to the seat of this affection, and affect the parts involved, seems to us the height of absurdity—and so it is, as proven by results. Where is the trouble from? What does the result have to do in the treatment, when the cause still remains—a separation of the two forces?

#### THE TREATMENT.

Take hold of the body of the patient on either side of the spinous processes at the dorso-lumbar junction, with the fingers of each hand, and raise the patient thus, the whole weight, keep it suspended for a moment, then let it down; repeat this process two or three times, and then place the hand on the abdomen gently, holding steadily, for two to five minutes, then gently manipulate the bowels and use the vibratory rotary movements of the hands a few moments; then raise the arms, treating from the first dorsal to the tenth vertebra, raising both hands up on either side of the head, lowering them each time, replacing the fingers along down the spine. This stops vomiting. The neck should receive gentle manipulations, beginning with the vaso-motor area.

After the stools are checked, it is a matter of much importance to nourish a patient. It will be remembered that when the skin hangs in folds, the watery portions of the system are nearly all evaporated, and the solid constituents of the body are precipitated. Circulation is therefore sluggish, the skin rough, scaly, dry and harsh, and soreness still present in the ileo-cecal region, the surface perhaps raw and exuding a muco-purulent secretion, and there is need of nourishment. Much judgment is to be exercised now. Begin with warm, sweetened water. Let the child drink or nurse it as warm as it can bear, as much as half



to one pint at a time ; let it rest for four to six hours, then repeat the water. Mucilage of ulmus is the best food for a day or two, till the ulcers heal. The water is to be continued at intervals for at least twenty-four hours. Sterilized sweet milk is admissible ; also barley and oatmeal mixed and boiled a long time and strained, and the serum therefrom given in proper quantities, but do not feed too much at a time, nor oftener than six hours. Satisfy the hunger by using the water. A bath in wheat-bran water daily will be found an excellent adjuvant to recovery.

It is to be hoped that the case will not run on under Osteopathic treatment until inflammation shall have been established, and the little one emaciated to the extent described above. Then there will not be so much care needed to raise one from the jaws of death. The system must have time to reinstate its lost powers, even after the treatment has united the forces.

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### CHOLERA INFANTUM.

This is defined as an acute catarrhal inflammation of the mucous membrane of the stomach and intestines. It usually comes on in the summer time, and is common with children during their first dentition, characterized by colicky pain in bowels and loose, watery discharges, febrile reaction and prostration. It comes on suddenly, with vomiting, purging, pains, fever and intense thirst, with rapid pulse, child restless, feverish, irritable, and rapidly runs into extreme prostration ; mouth and lips dry, tongue parched, thirsty, cold, clammy sweat, contracted pupils, semi-comatose, and rapidly sinking into a low collapsed state. These characterizations apply to the severe cases, but in milder cases the picture is not so intense. The prognosis is usually doubtful. It resembles the cholera morbus in adults, and requires the same treatment. It is said by one authority that it is caused by "irritation of the sympathetic nervous system." The duration depends upon its severity, constitutional vitality, the character of the attack, and the treatment.

#### THE TREATMENT.

The treatment consists in bending the body backward gently, with pressure on either side of the spinous process in the dorso-lumbar region, or the lifting of the patient up, with the fingers pressing on the sides of the spinous processes in that locality, or by taking hold of the child's heels and back of neck, laying it



PLATE LXVI.—Showing How to Extend Pectoral Muscle:



across the knee, bending it gently backward, so that the weight of the child shall center on the small of the back—stretching the mesenteric plexus and the plexuses of the abdomen, and gently pressing and vibrating slowly over the same for a short time. This treatment ordinarily cures at once, in a very few moments. Should subsequent treatments be needed, they should be given in the same way. For the equalization of the circulation and reduction of the fever, should there be any, treat the vasomotor area a few moments in the usual way.

The child should be allowed to nurse as much hot water as is comfortably borne, sweetened so as to be palatable, instead of food, until the stomach has time to rest, waiting a reasonable time after the bowels have become quiet. Let the little patient rest. The mother is generally too anxious to “keep the little one from starving to death,” not considering the ordeal the digestive organs have undergone (exhausted, and needing time to rest). Then do not permit an already worn-down nerve force to be imposed upon ere it has a breathing spell. The water is sufficient for dissolving the solid elements consequent upon watery exudation, and to restore their normal solution, so as to permit return circulation of the molecules necessary to recuperation. Wait, then. Sterilized milk or the mother’s milk will be the diet needed, but not too often.

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#### BLOODY FLUX.—ACUTE DYSENTERY.

This is an acute inflammatory condition of the large intestine, either catarrhal, croupous, or ulcerative in character, with fever, tormina, tenesmus, frequent small, mucous or bloody discharges from bowel. It occurs sporadically, epidemically or endemically.

**CAUSES.** Sudden atmospheric changes, hot days and cool, damp nights; errors in diet, drinking ice water when the system is too hot, or when fatigued; drinking water from wells and cisterns that is mixed with precipitants, vegetable decomposition, or clay, sand or dirt, without filtering, are attributed causes. Flux generally prevails at a season of drouth, when the springs and wells are scarce of water, much dust flying in the air, hot days and cool nights.

There are several forms of this affection—the Catarrhal, Diphtheritic, Tropical. It is not considered contagious, but is infectious. It is characterized by congestion of the mucous



and the submucous membrane, or tissue of the lower bowel, colon and rectum. Constipation usually precedes an attack. The irritation of the mucous membrane by foreign substances may be regarded as the starting point. It frequently comes from a lodgment of a foreign atom, such as an apple-core, in the mucous folds of the rectum; frequent discharges from the use of drastic cathartics; accumulated feces in the region of the sigmoid flexure. Congestion of ever so small a part of the mucous membrane of the large intestine may be sufficient cause to produce sloughing of the mucous membrane and give rise to serious consequences. The disease usually begins, however, with a diarrhea, loss of appetite, fever, nausea, which continue for two or three days, when the mucous discharges appear, with the peculiar tormina, tenesmus, and sick, fainty soreness in the lower bowel, pus and bloody stools, with severe pains in the hypogastric region, especially preceding stool and on movement.

#### THE TREATMENT.

It is stated by one author that "dysentery is one of the four great epidemic diseases of the world, and in the Tropics it destroys more lives than cholera, and has been more fatal to armies than powder and shot." The magnitude of it may in a measure be imagined. Its various forms signify nothing only as regards tissue involved, stage of the disease, mildness or severity. The treatment must be modified and applied according to the individual circumstances of the case, all things taken into consideration, whether the catarrhal, amoebic, croupous or chronic, and complications attending each variety. All cases should be attended to as early as possible, and the patient should be enjoined to rest quietly in as nearly a recumbent position as practicable, and to avoid mental worry, anxiety, fatigue, and exposure, indigestible food and excesses of all kinds. Keep quiet.

Presuming the patient is reclining on a couch or bed, the operator begins the manipulations by changing the current of the nerve wave by pressing hard and firmly in the region of the dorsal and lumbar junction of the spine, either with the knees or fingers, or, if a person light enough to raise, by placing the fingers on both sides of the spinous processes in that region, and bending the spine forward as far as practicable and holding the patient in that position for one or two moments, then repeating the same process two or three times. The same end may be accomplished by holding the clinched fist of the patient under the back at this region, on the left side of spine, for some minutes, if an adult.

The pressure should be steady, beginning moderately, and gradually intensifying it until relief is had. This treatment may be done by the patient himself oftentimes, with perfect satisfaction and assurance of immediate relief.

The gravity of this disease is such that the tendency is to want to resort to some remedy or compound in the shape of medicine, notwithstanding its almost universal failure. The human mind is so molded by habit, it seems so natural to "take something," that a resort is had to their old ways. When it is once known that Osteopathy, properly applied, cures without doubt, it will be sought by the afflicted, adopted, used.

In this affection, as in all other acute or chronic diseases, due regard should be had to the hygienic treatment, diet, etc. The discharges from the bowels should be removed from the room at once, the sheets and clothing properly aired, the room disinfected, and the body kept cleansed by proper bathing, daily, and the utmost strictness observed in regard to the administration of water. Hot water will be found the most soothing drink, and should be given in small quantities, often, satisfying as fast as possible the waste. Flushing the bowels once a day will be most soothing.

In further demonstration of the efficacy of taking off the pressure from the sympathetic nerve filaments, we will add another treatment that may not come amiss. The sympathetic nerves, as all nerves do, exercise their influence at their end bulbs, and as the filaments that terminate in the lower bowel in this affection are impinged upon, and infiltration of tissue by serous exudate separates these filaments from the terminal motor filaments, increasing the congestion of blood by lessening peristalsis in the arterial walls, a breaking-down of the tissue ensues as a consequence of decomposition of the elements in the parts. The indications are, "Take Off the Pressure." How is this done satisfactorily? We answer, By the bivalve. Divulse the sphincters gently, thoroughly, almost to paralysis, then inject as hot water as patient is able to bear, repeating the injection for several times at the same sitting, immediately after divulsion; and lastly, let a pint to three pints remain in the colon, then leave the patient to rest. This will cure almost every case in all stages of the disease. It is worthy of the most critical consideration and thorough trial. It is effectual.

## TYPHILITIS.

SYNONYMS. Inflammation of the caecum; typhilitis sterco-  
coralis.

This is an inflammation of the mucous membrane and deeper structures of the caecum and ascending colon. The painfulness and tenderness in the right iliac region simulate those in typhoid fever, but the bowels are usually torpid, constipated, due largely to mechanical obstruction from accumulation of feces in the caecum.

The characteristic symptoms of this affection are, pain, tenderness and swelling, with some prominence of abdomen in the right iliac region, distension of bowels, meteorism; local pain is peculiarly characteristic. It is very likely to be diagnosed with the condition called appendicitis, but may be differentiated from it by the local prominence manifest in the region of the cecal valve, due to presence of feces therein. While in appendicitis there are pain, soreness, feeling of weight, tense, prominent abdomen and hard swelling in right iliac region, there is not the special prominence in the locality of the caecum as there is in typhilitis. Great depression of the vital powers ensues, proportionate to the tissue involved.

## THE TREATMENT.

The patient should be placed on the back, with the hips a little elevated, and the operator should begin manipulating gently on the abdomen over the parts affected, vibrating with the open hand or fingers until the tenderness is somewhat overcome, then deeper and firmer, so that gentle pressure may be made, beginning in the right iliac fossae, pressing upward, following the course of the ascending colon, and across the transverse portion, then down the descending portion, moving the impacted feces forward, onward, downward. Vibrating over whole abdomen from right to left, kneading deeply yet gently, for fifteen or twenty minutes, affords relief at first sitting. The vaso-motor area and the whole spine are to be treated in the usual way, raising and stretching the serrati and intercostales, manipulating the liver, drawing up the abdomen from the iliac fossae as the patient strongly exhales. The intelligent Osteopath will not fail to meet the indications promptly. Flushing the abdomen is urgently recommended in such cases, and would better be done before manipulations begin. The treatment of the splanchnics should be made first of all the treatments. Gentle treatment,



general, should be given every day until cured. The kneading process should always be done with much gentleness and care. Roughness in manipulation is apt to be attended with after inflammation. Too much care in this regard can not be exercised in this or any other inflammatory condition. Toleration comes from gentleness to begin with. The primary object is to first remove the pressure from the lumen of the colon, then to take off the pressure producing the congestion in the walls of the intestine, so as to restore the normal function. These objects are accomplished by this treatment. It is often a matter of surprise to operator and patient to see the astonishing results of this treatment, even when other means have failed.

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### APPENDICITIS.

**SYNONYMS.** Inflammation of the appendix vermiformis; perityphilitis.

This is an inflammation of the appendix and connective tissue around and in the vicinity of the caecum (or localized peritonitis), eventuating in suppuration, sloughing or abscess.

The attributable cause of this condition is impaction of the appendix with a foreign substance in the canal. The symptoms are a feeling of weight, soreness and pain in the deep structure of the right iliac region, frequently accompanied with vomiting, tenderness to that extent that the right limb is kept constantly drawn up, to relax the abdominal muscles, in order to relieve pressure. The abdomen becomes tense, prominent, hard, tympanitic; a gradual rise of temperature and pulse, drawn, pinched countenance, indicative of intense suffering. The special tendency of the disease is to suppurate. Pronounced chills usher in this process, and followed soon by high fever and intense pain, throbbing and great restlessness. It is distinguishable from typhoid fever by a lack of prodromes; from typhilitis, by absence of colicky pains, and the tympanitis preceding the presence of the tumor.

As it is expected that the Osteopath will be able to cure this condition without a surgical operation to remove the offending member, it ought to be understood that sometimes a case goes beyond the purview of manipulations, and resort must be had to the knife; but in the great majority of cases, if taken in time, they are curable without surgery or surgical interference—a thing that is perhaps too frequently resorted to.



## THE TREATMENT.

The attempt should be to speedily arrest the inflammatory process. This usually may be done by the following course of manipulations: Place the patient on the left side in such a position as to relax all of the muscles of the right iliac region, then begin with the vibratory movements of the fingers, as gently as possible at first, and gradually manipulating the deeper structure in that area until toleration is obtained; then have the patient take long, deep inhalations, while the intestines are gently drawn upward and out of the iliac fossae; then, continuing the manipulations over the abdomen so as to remove all the sources of congestion. Next, take hold of the right wrist, and stretch the muscles of the right side upward, thoroughly, strongly, and treat either side of the spine all the way down as the arm is raised and lowered, giving general treatment as indicated for such conditions, same as for other general conditions of inflammations in abdominal region, and be gentle, persistent, patient, thorough. Hot baths, hot water injection, hot local applications should be brought into requisition whenever indicated. The colon should by all means be flushed in this affection. The vaso-motor area should receive attention to control arterial circulation. Much depends upon the care of the patient, the gentleness of the manipulations in a case of appendicitis, as well as in all abdominal inflammations. No rough, bungling treatment should be indulged in for a moment. Discretion, caution, are necessary.

Treat the lumbar area thoroughly.

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**PROCTITIS.—RECTITIS.**

**SYNONYMS.** Catarrh of the rectum; dysentery.

This means an inflammatory condition of the mucous membrane of the rectum and anus. The symptoms are pain, tenesmus, frequent stools of mucus, pus and blood, hardened feces, an uneasy, burning sensation in the rectum, stools wrapped with mucus, hard lumps passed with much straining and pain, frequently with prolapsus of mucous membrane at each stool. It is generally attended with constipation, enlarged prostate in the male, hemorrhoids, stranguary, and in females with prolapsus of uterus.

**THE TREATMENT.**

As in all other cases of inflammation, there has preceded it a state of congestion, and decomposition of the elements of the

blood and waste products are the result. The terminal end filaments of the sympathetic and motor nervous system have been denuded, separated, and an effort on the part of the system is taking place to restore the breach. The pressure still exists. What are the indications? Take off the pressure, send in healthy arterial blood to build up the tissue, furnish it the material. Regulate the circulation of the blood first. Stimulate the spinal nerves, the splanchnics, and treat the liver, stomach; manipulate the abdomen carefully and thoroughly, deeply; divulse the sphincters gently, strongly, gradually; bathe the parts with water hot as can be borne, using it freely with a fountain syringe, ten or twenty minutes at a sitting; then put into the rectum a teaspoonful of bovine after the bathing, three times a day. Bend back in lumbar region, gently, over knees, backward as strongly as patient can well bear for a couple of minutes once a day. Drink freely of hot water, rest quietly, breathe deeply several times at a sitting, and every three hours. Oxygenate the blood. Draw up the pelvic viscera from the iliac fossae carefully, when the patient is lying down and limbs flexed. Use gentle vibratory manipulations over the abdomen once a day at least. Careful and gentle divulsion need not be done oftener than every two or three days. This course will surely relieve the case and cure it in a short time. No medicines are required.

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### INTESTINAL OCCLUSION.

**SYNONYMS.** Obstruction; strangulation; invagination.

This occurs suddenly or gradually, and is attended with more or less pain, nausea, vomiting, a constipated condition of the bowels, and resulting in collapse, and death if not relieved. It has been attributed to accumulation within the bowel of hardened feces (an improbable result, truly), foreign bodies, stricture, ulceration, cicatrices, pressure against the bowel, strangulations, invagination, twisting of intestines.

With more or less suddenness of onset, this condition assumes grave characteristics. The site of the occlusion can rarely be exactly determined, but the pains gradually become intensified, tenderness in limited areas over the abdomen, and the stercoraceous eructations become characteristic, the abdomen becoming intensely hard, pulse rapid, feeble; cold, clammy perspiration all over body, cold extremities, constipated.

## THE TREATMENT.

It would be useless to recommend the ordinary course of treatment pursued by medical men in this critical situation. It being a physical displacement, it requires physical manipulations to restore a normal condition. Under the old way of treatment it always has been considered a grave condition, but we hope to render it less so before we dismiss the subject. In the first place, the earlier the operator is called to see or treat the case, the more likely the success, or the sooner remedied.

To begin, however, stretch the abdominal muscles strongly upward, extending both arms strongly above the head, the patient lying on the back, with hips elevated a few inches higher than the shoulders, and both limbs flexed on the abdomen, and if possible, have the patient inhale deeply, retaining the air in the lungs for a half to one minute, while the arms are being extended. next, raise one arm strongly above the head, placing the fingers on the side of the dorsal vertebrae; press strongly, while stretching arm taut at the side of the head, and let it down rather suddenly, still holding the fingers hard against the back at the angles of the ribs in the splanchnic area. Now, with the patient lying on the back, with limbs flexed, vibrate carefully, over the abdomen, gradually increasing the force as much as the patient can bear without producing pain, and manipulate in the direction of the ascending colon, following it in its course; then gently knead the whole bowel, drawing it up from the iliac fossae, and use pressure along down the lumbar vertebrae and as low down as the last sacral, lifting all pressure from the nerves along the whole spine. Press gently on vaso-motor area for three to five minutes. Unite the two forces through the splanchnics. Lastly, have the patient lie on the left side and fill from a fountain syringe the colon full of water as warm as the patient can bear, and after it is passed out, repeat again, but have patient retain it as long as practical or possible. This mechanically assists in adjusting intestines. Turning the patient on the stomach or side and pressing against the lumbar region while the limb is drawn strongly backward, or away from body, in a circular-backward move, will be in the line of treatment, and greatly beneficial in adjusting the position of the abdominal viscera.



PLATE LXVII.—Treating Shoulder and Side Muscles.





## INTESTINAL PARASITES.—WORMS.

The recognized varieties are *Taenia Solium*, *Taenia saginata*, *Bothriocephalus latus*. The *taenia solium* is the most common in this country. It is denominated the "armed tapeworm" on account of a double row of hooklets. The head measures about one-fortieth of an inch in diameter; head is globular in shape, slim neck, and gradually increasing in size as it merges into larger segments resembling gourd seeds, and these segments are joined together, and each segment contains a male and a female; and it is said that an ordinary tapeworm has about five million ova. This variety inhabits the upper portion of the small intestines. The hooklets are imbedded in the mucous membrane. Their presence is best determined by segments passed in the feces. It is thought that they are introduced into the stomach by food or drink. The *taenia solium* varies in length from a few feet to sixty feet or more. It is thought to come from pork, partially cooked. This variety is termed the *cysticercus cellulosus*.

The *tenia saginata* is an unarmed variety, derived from eating beef, and is termed the *cysticercus bovis*. The *bothriocephalus latus* is also unarmed, and is said to be derived from eating fish.

The symptoms of the presence of tapeworm are not always clear cut, but their actual presence is determined by segments being occasionally passed with the stools. There is usually colicky pain in the stomach and bowels, inordinate appetite, hunger for fatty diet, an all-gone feeling at the stomach, emaciation, continual fainty feeling that food satisfies for a time, emaciation, palpitation, and not infrequently pruritis at anus and nose. Many of these symptoms are present in disorders of the digestive tract when no parasites exist. The remedies that remove the one will remove all varieties. When present, it should certainly be gotten rid of.

## THE TREATMENT.

The first and important thing to do for the removal of these parasites is to turn in on it the bile. The increased quantity of bile increases the peristalsis of the intestines, and often causes the worm to let go his hold, and the movement onward prevents his reinserting his hooklets in the mucous membrane, and thereby he passes from the bowel bodily. It requires three or four days' treatment of the liver to consummate the desired object. There are several mechanical means of removing it from the

intestine, and the choice is immaterial. The Felix mass (or ext. of male fern) is a popular means. A tea of the pomegranate root-bark is another means. Pepo Extract is another. Grated cocoa, eaten in large quantities, with a free use of sweet milk, is another method used. The active principle of granatum (pellitorine) is the surest remedy. If a normal circulation of the blood is kept up, parasites can not remain in the body. It will be found in all cases that the depression of nerve force exists prior to the existence of parasites of any kind, and needs righting. Sulphuric ether or chloroform, in ten-drop doses on sugar, with cathartic, is effectual.

The taenia solium, after it is a fixture in the intestinal canal, is only gotten rid of by positively removing "the head." The bowels should be thoroughly cleansed of all the fecal contents by mild mechanical means, such as Oleum ricina, and fasting for a couple of days, drinking freely of hot water, Osteopathically stirring up the liver and stimulating the splanchnic nervous area, and living on food that is taken up by absorption in the stomach. The rational treatment (increasing intestinal peristalsis), with the presence of bile, secures satisfactory results without any other agencies.

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### ROUND WORMS.—THREAD WORM.

Other varieties of intestinal parasites are, *Ascaris lumbricoides* and the *Oxyuris vermicularis*.

The ascaris is the most common variety that affects the human family. They inhabit the small intestines most frequently, although they are found in the stomach, and may be in the alimentary tract anywhere—even up in the throat. They vary in size, but measure from an eighth to a fourth of an inch in diameter, and are usually ten inches long, numbering in some cases several hundred in one person—even found in large "knots." The oxyuris (or thread worm) is denominated "seat worm," and resembles a white thread, and is usually quite small, measuring about a sixth to a half an inch in length. It inhabits the large intestine, and especially the rectum, sometimes completely covering the entire mucous membrane, and migrating to the genital organs, producing intense itching of the parts. These varieties are so common that a further description seems superfluous. Various means have been instituted to get rid of them. Like all other parasites that infest the human body, there is first a degen-

eration of the tissues of the body, and especially an unhealthy condition of the intestinal tract, that furnishes a breeding or generative spot for them before they enter therein, or before their presence is manifest. Chemical changes in the elementary constituents due to nervous depression result in a compatible resting place for them in which to live and generate.

#### THE TREATMENT.

Correct the digestive system. The overtaxed digestive organs must have rest. This is the first desideratum. Restore the nerve forces by treatment in the vaso-motor area, the splanchnics, along the lumbar areas, and right the torpid liver; arouse all of the secretions, the glandular organs from the salivary to the Peyerian follicles, and the lumbricales migrate for other climes. To remove worms and leave the digestive organs uncured, does no good. The vermicide most common and most effectual in the ascaris variety is Santonine. For the local removal of the thread worm, inject into the bowel or rectum lime water, from one to four ounces. This destroys them immediately. Then follow that up with salt water; one teaspoonful of salt to a pint of water is strong enough—effectual. The Osteopathic treatment should be used with an eye to restoration of normal digestive conditions. Then the worms will not be found to inhabit the intestinal tract.

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#### HEMORRHOIDS.—PILES.

Before considering the pathological condition recognized as piles, it will be well to consider the venous system of that part of the body. The rectum derives its blood from the internal pudic artery, the inferior hemorrhoidal being a branch thereof. The veins begin at the lower end of the rectum, forming the superior hemorrhoidal veins, which unite to help form the inferior mesenteric and the middle and inferior hemorrhoidal, and these terminate in the internal iliac. The portal and general venous systems have a free communication by means of the branches composing this plexus. The hemorrhoidal branches from the inferior mesenteric inosculate with those of the internal iliac, and thus establish a communication between the portal and the general venous systems. Besides this anastomosis between the portal vein and the branches of the vena cava, other anastomoses between the portal systemic veins



are formed by the communication—between the gastric veins, which empty themselves into the vena azygos minor; between the left renal vein and the veins of the intestines, especially of the colon and duodenum; between the veins of the round ligament of the liver and the portal veins; between the superficial branches of the portal veins of the liver and the phrenic veins. It is a noted fact that the hemorrhoidal veins gather up all of the blood distributed there by the arterial system, and either empty it into the inferior mesenteric or the internal iliac, and anything that obstructs the normal return of the blood in any of the veins that return the blood from the lower extremities causes a varicose condition of the limbs. Any obstruction interfering with the return of blood through the iliac or mesenteric veins would cause the same or a similar condition in the veins of the rectum. This is denominated hemorrhoids or piles. Hemorrhoids is a varicose condition of the veins of the rectum. It is necessarily a result of an impingement of the sympathetic nervous system, which is generally due to a pressure on the return circulation of the venous blood. This may occur as a result of congestion of other and remote organs—the liver, the spleen, the colon, the sigmoid flexure; in the latter from the impaction of feces. Hemorrhoids are sometimes due to the effects of cathartics. Some agents (such as aloes) have a special influence in their production, by relaxing the tissue, mucous membrane and venous walls. Excessive irritation of the sphincter muscles, and pressure upon the inferior hemorrhoidal plexus of nerves, produce them. Inflammation or congestion of adjacent structures, interfering with the venous return circulation, may frequently become a factor in the production of hemorrhoids. Its removal cures the varicosity of the hemorrhoidal veins. Correcting undue sphinctral contraction frees the venous system and the veins disengage, the piles cease. Ostopathic treatment saves many a rectum from surgical interference by taking off the pressure that produces hemorrhoids.

#### THE TREATMENT.

An examination of the rectum should be made with a bivalve speculum, to ascertain the condition of the parts. If tumors exist, they will be found either above the internal sphincter muscle, on the muscle itself, or below, in which latter case there is usually more or less of knotty, lumpy projection outside of the rectum, in the form of a bluish colored, round, intensely sensitive, painful,

hard tumor. This is due to pressure on the vein above, holding the blood in the vein, dilating it by pressure of the blood within. Tumors formed between the folds or within the grasp of the internal sphincter muscle are usually pressed upward or downward, and form large or small tumors, according to the size of the veins involved; and the tumors formed above are generally due to pressure in the sigmoid flexure, or lower bowels, or pressure in the iliac fossa. The removal of the tissue involved to cure the piles is like removing the bottom of a vessel to get the contents out. If the pressure is removed, the piles remove themselves. There are so many ways for the venous blood to be emptied into the larger channels that it seems scarcely worth while to suggest a way to the intelligent anatomist, when he understands the philosophy of Osteopathic manipulations. To open up the normal channels and let the pent-up congestion flow out is the province of the Osteopath, and hence surgery is a useless *dernier ressort*.

If we find the cause to be constipation, the remedy is to cure the constipation. If the trouble comes from pressure upon the iliac veins, remove that. If from pressure on the inferior or superior mesenteric veins, remove that. If from enlargement of the liver or spleen, attention must be given these organs. Treatment of these organs is given elsewhere.

The ordinary treatment, Osteopathic, is made by the use of the forefinger, introduced into the rectum, the palmar surface turned backward, reaching up and backward above the internal sphincter muscle, and placed on either side of the coccyx, straightening that if necessary, or at least adjusting it to a normal curve, and using considerable pressure and pulling the muscular structure on either side of the coccyx sidewise and backward, stretching the internal sphincter, and pressing on whatever tumors are found in the rectum, slowly, gently, manipulating them till softened, and the blood is more or less removed from them—at one sitting; then gently withdrawing finger, with the thumb clasped against integument until the finger is drawn out of the rectum. This treatment should be repeated every three to five days until cured. By placing the thumb and fingers of the other hand on the outside of the sacrum and on the sacral nerves, pressing firmly, a condition of desensitization ensues, and the internal effects of the treatment become less painful. This treatment is done without the use of an anaesthetic.

Enlargement of the prostate gland is treated the same way—

only the palm of the finger is turned forward, and strong manipulations made outward on the sides of the gland, which reduce it wonderfully, even at one sitting. Use Vaseline as a lubricant for the fingers. This mixture is appropriate for use on the finger in the rectum: Pulv. opium, x. grs; tannic acid, xx. grs; vaseline, i ounce; mix.

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## HERNIA.

SYNONYMS. Rupture; a break.

This being such a common affection, and so little is done for it except along the line of "trusses" that we feel constrained to add in this book new suggestions of the possibility of relieving it by Osteopathic manipulations. To reduce it when "down," or to "replace it" during "strangulation," is no simple thing to do, until experience or instruction is had; so we are inclined to suggest the following. To reduce it, put the patient on the back, shoulders lowest if possible, or raise the pelvis, then have the limb flexed on the side of the rupture, catching hold of the limb as if treating varicose veins; firmly, gently, strongly flex the leg on the thigh, thigh on the abdomen, using the fingers of the hand in the groin to press around the hernia. Flexing a time or two usually reduces the hernia. To manipulate to cure the hernia is to be done by having the patient lie on the back, flex both limbs so as to relax the abdominal muscles, then knead the several muscles in such a way as to equalize the tension of their muscular fiber, and the rent is lessened as each manipulation is made. These should be made three times each week. Several cases have been cured by these means—this course. We surely advise all to faithfully try it. There is no reason that it should not be cured this way. Relaxation of the muscular fiber, due to straining, produces it; equalization of the force of retention will restore the condition, persistently followed. Try it. Free lumbar nerves.

## DISEASES OF THE SKIN

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To overcome the prejudice of the people concerning the use of salves, unguents, lotions and "blood purifiers" is the hardest task imaginable.

While the expression regarding spiritual things, "Ye make void the commandments of God by your traditions," has stood out in bold relief for centuries, there are few who draw consolation therefrom by a return to the commandment itself, and obeying it. When foreign substances are in the system, it continually seeks to rid itself of the annoyance; yet we stand aghast, watch it wriggle, suffer, exhaust itself in a vain effort, and instead of attempting to relieve the pressure, add more to it. How foolish! To make the country tillable, healthy, agriculturally profitable at the head of streams, to remove the water that dams up, backs up and covers the area, the rubbish farther down is removed, giving vent to the water along its course "to the sea," and then the utility of the soil is realized in rich harvests of golden grain. Apply the illustration to the human system: Take off the pressure across the veins, let the debris be carried out, back to the place of purification (the lungs), and the same effect is experienced. The whole philosophy of this science rests upon this principle, and that it may be carried out is the design of this treatise. Study every relationship of it to every condition found in the body, and apply it where applicable, and favorable results may be expected. The physician's quiver is usually a small one when it comes to prescribing for the various ills of the physical body. Some have few, some more remedies, but we venture the assertion that a larger area of the pathological conditions is attempted to be covered by a fewer number of remedies, with the ordinary physician, than are recommended (manipulations) by us to accomplish the object—remove the cause of trouble (a seemingly patent expression among doctors).

Whilst there may not be the slightest relationship of the remedies used by the medicine vendors to the object to be accomplished (and it seldom does it), yet the victim from habit gulps it down without a question or a doubt, thinking the doctor knows his business, and it is all right. True, isn't it? But if we show the "better way" it is regarded as an innovation, an infringement on



the long-established and time-honored rights of the learned medical profession that calls for summary vengeance at their hands. We feel assured that this prejudice (for it is nothing else) will yield as investigation is made. This science will stand all the criticism that a scrutinizing public sees fit to apply to it, and in the end stand out in bold relief as the greatest boon that was ever conferred upon mankind in the way of amelioration from physical ills! It is not questioned by those who know, and these are not a few, and the application is universally satisfactory.

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## DISORDERS OF SECRETION.

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### SEBORRHŒA.

**SYNONYMS.** Acne sebacea; pityriasis; tinea furfuracea; dan-druff.

**DEFINITION.** A functional disorder of the sebaceous glands of the skin; characterized by an excessive and abnormal secretion of sebaceous matter, forming upon the skin either as an oily coating, or in crusts and scales.

**VARIETIES.** Seborrhoea oleosa; seborrhoea sicca.

**CAUSES.** In newly-born infants an increased secretion of sebaceous matter—the vernix caseosa—is a physiological process. The origin of the disease is for the most part illy understood, anaemia being a factor in many cases.

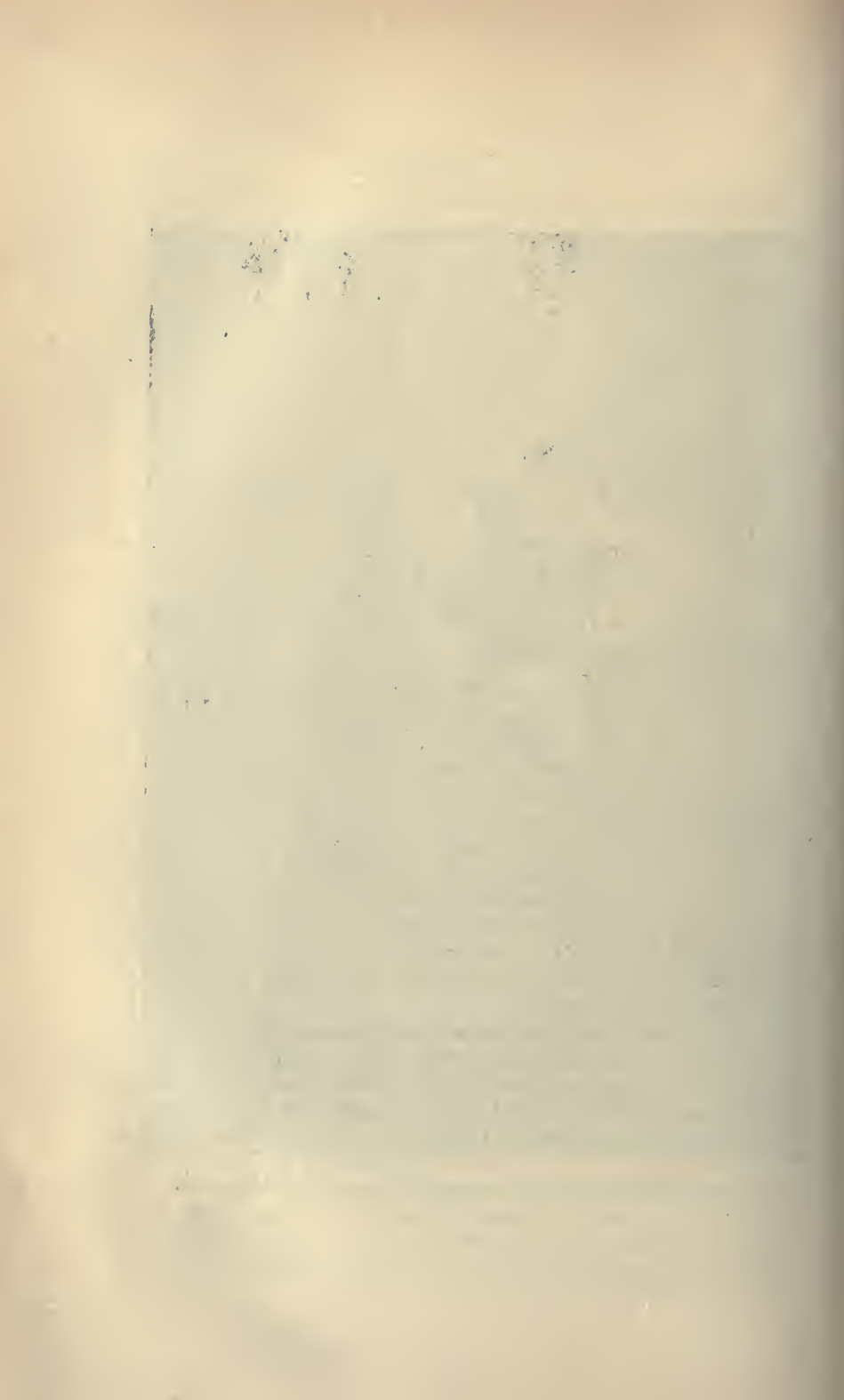
**PATHOLOGY.** Seborrhoea is a functional derangement of the glands; if it be allowed to become very chronic, there occurs atrophy of the glands and follicles.

**SYMPTOMS.** The affection may occur upon any portion of the body, its most frequent seat being, however, the scalp (seborrhoea capitis or pityriasis capitis), and next in frequency the face (seborrhoea faciei). Seborrhoea oleosa appears as an oily, greasy coating upon the skin, without hyperaemia, and not attended with itching. The secretion is of an oily character, the quantity at times being so great as to collect in minute drops of a clear, yellowish fluid upon the surface.

The most common seat for this variety is the face (seborrhoea faciei), and nose (seborrhoea nasi). Seborrhoea sicca consists in the formation of dry, more or less greasy, masses of scales, or crusts of a grayish, yellowish, or brownish-yellow color, having



PLATE LXVIII.—Spine, Liver and Stomach Treatment.



a strong tendency to adhere to the skin, and attended with decided itching. Occurring upon the scalp—seborrhoea capitis—it is a frequent source of premature baldness.

DIAGNOSIS. Seborrhoea capitis may be mistaken for dry eczema, but the former is always a dry disease, while in eczema moisture has occurred at some period of the affection. The scales in seborrhoea are very abundant and pale; in eczema the scales are scanty and reddish, the parts irritated, infiltrated, and thickened.

Seborrhoea sicca and psoriasis have many points of resemblance, whether occurring on the scalp or on the body. In seborrhoea the scales are minute or caked, grayish or yellowish in color, of an unctuous feel, and usually uniformly diffused. In psoriasis the scales are very dry, abundant, thick, white, irregularly dispersed, with intervening healthy skin, and the surface beneath the scales is always reddish and inflamed. The clinical histories of the diseases are entirely different.

PROGNOSIS. If properly treated, favorable, although the affection is obstinate to eradicate.

#### THE TREATMENT.

The treatment, Osteopathically, consists of manipulations that effect a return of blood in the venoles, the waste material in the lymph spaces, through the larger veins, giving room for new material along the sides of the capillaries. This relieves the whole difficulty and restoration ensues. After so treating the neck, and extending same, raise the clavicles, chest and chest muscles, so as to give room to expand the lungs, that oxygen may be permitted to enter therein; make vibratory manipulations around the scalp or wherever eruption is. This soon starts up the vital forces and restoration ensues. It is unreasonable to suppose that an eruption would get well until the cause is removed—the obstruction.

In children this affection is quite common, and very annoying indeed. Osteopathy effectually cures it if applied three times a week, for it removes the condition called stasis, due to venous engorgement. The veins being the sewers of the system, the debris must be permitted to move on. Decomposition, the breaking-down of tissue, results from impeded circulation, and it must be removed bodily, physically, literally, then a normal condition (health) ensues speedily. Tissue elements may be lacking sometimes, then the proper one should be supplied, either in food or in substance. The Kali sulph. is the one in this case.



## COMEDO.

**SYNONYMS.** *Acne punctata nigra*; black-heads or worms.

**DEFINITION.** A disorder of the sebaceous glands; characterized by retention in the excretory ducts of an inspissated secretion which is visible upon the surface as yellowish or whitish pin-point and pin-head-sized elevations, containing in their center blackish points.

**CAUSES.** Among the causes assigned are anaemia; menstrual disorders, urethral irritations, dyspepsia, and constipation.

**PATHOLOGY.** Comedo is an affection of the sebaceous glands and ducts, consisting of an accumulation of serum and epithelial cells in the glands and follicles, dilating the ducts to such an extent as to produce the point or elevation upon the surface. The obstructed gland may relieve itself, or it may continue distending until a papule is formed. The duct sometimes contains small hairs, and also the microscopic mite—*demodex folliculorum*—having a length of from 1-150 to 1-75 of an inch, and breadth of about 1-500 of an inch, which was at one time erroneously supposed to be the cause of the affection.

**SYMPTOMS.** Essentially a chronic affection, observed for the most part on the face, neck, chest and back. Each single elevation or black-head or point is designated a comedo, or if a number, in the plural, as comedones.

Each comedo is small, varying from a pin-point to a pin-head in size, having a brownish or blackish appearance, from the dust or dirt that has adhered to their unctuous surface. If they form in great numbers upon the face they are disfiguring, giving the individual the appearance of having had minute grains of powder implanted in the skin. There are no evidences of inflammation unless acne is associated, but, on the contrary, the skin has a dirty, greasy, unwashed appearance.

**DIAGNOSIS.** There is no condition resembling comedo, so that its recognition is easy, unless complicated with acne; but even then the inflammatory appearance of acne should prevent an error.

**PROGNOSIS.** Favorable, although often remarkably obstinate.

## THE TREATMENT.

Nothing succeeds like success, and there is no success without favorable results of effort. The secretions in this affection become poisonous from lack of circulation, the deficiency of pan-

creatic secretion, and the over-crowding of the digestive tract with the fats. The splanchnic nervous system is at fault. The digestive tract should receive special attention until corrected. Bathe the face in salt and water (one teaspoonful to a pint of water) several times a day, and rest the digestive organs from one meal a day—breakfast is preferable—and the “black-heads” will soon be exchanged for normal, smooth, healthy skin. The glandular system acts normally when the pressure is removed and the normal elements generated in the system, or supplied when lacking. Proper vibratory manipulations should be made on the abdomen, over the liver, spleen, pancreas and stomach as often as three times a week, to cure such cases.

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### MILIUM.

**SYNONYMS.** Grutum; tubercula miliaria or sebacea; acute punctata albida.

**DEFINITION.** An accumulation of serum in the sebaceous glands which are minus their excretory ducts; characterized by the formation of small, roundish, whitish, sebaceous, non-inflammatory elevations, situated immediately beneath the epidermis.

**CAUSE.** The origin of the affection is nerve pressure of end fibers.

**PATHOLOGY.** The sebaceous gland is distended with the sebum, which is unable to escape, owing to the obliteration of the duct, nor can the contents be squeezed out, as no sign of aperture is to be found, the formation being completely inclosed. Rarely the retained secretion undergoes a metamorphosis into hard, calcareous, stone-like masses—sebaceous concretions or cutaneous calculi.

**SYMPTOMS.** Milia may occur upon any portion of the body; their usual seat, however, is upon the face, forehead, and about the eyes. They form gradually, are about the size of a millet seed, of a whitish, pearl, or yellowish color, hard, and of a rounded shape, giving the sensation to the touch of hard bodies embedded in the skin. They are not associated with inflammatory symptoms.

**DIAGNOSIS.** Milium and comedo are somewhat similar in appearance; the differences are that in milium the sebaceous gland is distended without an opening, while in comedo the duct of the gland is always patulous upon the surface. Milium

usually exists singly, the skin looking normal; while comedo is more general, the surface having a soiled and greasy appearance.

PROGNOSIS. Favorable.

TREATMENT. Same as for Comedo.

### SEBACEOUS CYST.

SYNONYMS. Wen; sebaceous tumor; encysted tumor.

DEFINITION. A distension of the sebaceous gland and duct, with hypertrophy of the walls, which forms a thick, tough sack or cyst; characterized by the appearance of a firm or soft, more or less rounded tumor, having its seat in the skin or subcutaneous connective tissue.

CAUSE. Obstructed capillary circulation.

PATHOLOGY. Hypertrophy of the gland and duct walls, the result of pressure from the accumulated contents, which consist of the altered products of the sebaceous secretion.

SYMPTOMS. The development of wens is slow and insidious. The localities where they are most commonly developed are the scalp, face, back, and scrotum.

The tumors occur singly or in numbers, in size from a pea to a walnut, or larger, in shape either rounded, flattened, or semi-globular; in consistency they are either hard or soft, and doughy; they are freely movable and painless.

DIAGNOSIS. Sebaceous cysts may be confounded with fatty tumors.

TREATMENT. Excision and careful and thorough dissection of the cyst.

### HYPERIDROSIS.

SYNONYMS. Hydrosis; ephidrosis; excessive sweating.

DEFINITION. A functional disorder of the sweat glands; characterized by an increased secretion of sweat. The sweating may be either general or partial.

CAUSES. Often undetermined; occasionally inherited; nervous derangements; malaria; diseases of the heart and lungs.

PATHOLOGY. A functional derangement of the sudoriparous glands, over which the vaso-motor system has control. The character of the secretion, chemically, may not differ from the normal.

**SYMPTOMS.** Universal general sweating, such as occurs during the course of pneumonia, rheumatism, tuberculosis, typhoid and other febrile maladies, can hardly be considered a distinct affection.

Hyperidrosis may be acute or chronic, the amount slight or large, being constant or paroxysmal, the extent general or local, and it may or may not be symmetrical.

Bromidrosis is the designation when the secretion has an offensive odor.

Chromidrosis is the designation when the fluid poured forth is variously colored. Uridrosis, when the excretion from the sweat glands contains the elements of the urine and particularly urea. Phosphoridrosis, when the perspiration appears luminous in the dark.

Local hyperidrosis occurs most commonly upon the palms, soles, axilla, and genitalia.

Hyperidrosis of the palms may be so profuse that the fluid accumulates and keeps the parts constantly macerated, the wearing of gloves being impossible, for as soon as the parts are wiped dry they are again bathed in the secretion. Jamieson states that hyperidrosis of the hands is very common in those who are daily excessive spirit drinkers.

Hyperidrosis of the soles is a disagreeable and often distressing condition, as the socks and shoes become saturated, and thus keep the soles constantly bathed, allowing the macerated epidermis to peel off, leaving a more tender skin exposed, causing pain and distress when walking. The maceration of the epidermis, the secretion about the toes, together with the moisture of the socks and the soles of the shoes, promote the rapid development of the bacteria foetidum; all these together produce a most disagreeable, disgusting, and persistent odor, which is termed bromidrosis pedum.

Hyperidrosis of the genitalia attacks males more particularly, giving rise to a disagreeable, penetrating odor.

The sweating may be limited to one side—unilateral hyperidrosis.

**PROGNOSIS.** The majority of cases are extremely intractable; complete recovery is rare in a fair proportion, while some cases are easily relieved.

#### THE TREATMENT.

After the general treatment to promote a free circulation of the blood, have the patient lie on the stomach, face down, and



finish up the treatment by vibrating the lumbar area upward from the sacro-lumbar to the dorso-lumbar region, deeply, firmly, slowly, for several moments, then use friction along each side of the spines upwards, with the fingers' ends, several times at one sitting. This treatment reverses nerve action, changes the condition and character of the circulation, and cures the case. Some cases require the Nat. mur. as a tissue-builder, and to supply the chloride of sodium molecules in the system. The 6x potency is the most suitable, and used in the form of tablets, trice, daily. The ordinary assimilable quantity of these triturations is two to four grains at once.

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### ANIDROSIS.

**DEFINITION.** A functional disorder of the sweat glands; characterized by a diminished or insufficient secretion of sweat.

**CAUSES.** The result of a congenital deficiency of the sweat glandular apparatus. Local anidrosis may result from injury to a nerve, during the course of chronic diseases of the skin, as ichthyosis, eczema, psoriasis, lepra, and elephantiasis arabum. In rare cases an individual ceases to sweat entirely at times; in such cases the general health is impaired, and during the hot season much suffering may ensue.

**TREATMENT.** Same as for Hyperidrosis.

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### SUDAMINA.

**SYNONYMS.** Sudamen; miliaria crystallina (Hebra).

**DEFINITION.** A non-inflammatory affection of the sweat glands; characterized by the rapid development of millet-seed-sized, translucent, whitish vesicles, in great numbers, upon any portion of the body.

**CAUSES.** A high temperature, causing unusual activity of the sudoriparous glands.

**PATHOLOGY.** The glands being excited beyond their capacity for normal excretion, the excessive fluid, instead of escaping upon the surface, from some cause collects between the layers of the epidermis, in the form of minute, translucent pin-point-sized vesicles.

**SYMPTOMS.** Each minute vesicle is distinct, but they exist in great numbers, very closely resembling drops of free sweat. They develop rapidly, never coalesce, become puriform, or rup-

ture. Fresh crops form from time to time. Their duration is transitory; the fluid is absorbed, the covering of each dries, forming a thin, delicate membrane, which disappears as a slight desquamation.

TREATMENT. Same as for Hyperidrosis.

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## HYPERAEMIAS OF THE SKIN.

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### ERYTHEMA SIMPLEX.

DEFINITION. An acute affection of the skin, in which occurs an abnormal quantity of blood in the dermal vessels; characterized by discoloration, which disappears upon pressure, and with more or less local increase of temperature.

VARIETIES. Idiopathic erythema; symptomatic erythema.

CAUSES. Idiopathic Erythema.—Heat, cold, pressure, friction, or the contact of irritants, such as mustard, arnica, and dye-stuffs. Symptomatic erythema occurs most frequently in childhood, from diseases of the stomach and intestines; during the course of the various exanthemata.

SYMPTOMS. A more or less rapidly developed redness of the skin, varying in color from pink or light red to dark red, which disappears upon pressure, to rapidly return again. The extent and form of the congestion vary according to the cause, at times being as small as a coin and isolated, and again diffused over a large area. The temperature of the congested part is slightly above the normal. Slight itching and burning are usually associated with the discoloration.

DIAGNOSIS. Erythema resembles acute dermatitis in color, but the subjective symptoms of the latter are so decided that an error should not occur.

#### THE TREATMENT.

The treatment demanded in this condition is the vaso-motor, and general treatment to equalize the normal circulation of the blood. Give attention to the digestive organs and kidneys.

## INFLAMMATIONS OF THE SKIN.

## ECZEMA.

SYNONYMS. Tetter; salt rheum; scall.

DEFINITION. A non-contagious inflammation of the skin; characterized by any or all of the results of inflammation, at once, or in succession, such as erythema, papules, vesicles or pustules, accompanied by more or less infiltration and itching, terminating in a serous discharge, with the formation of crusts, or in desquamation.

FORMS. Acute; chronic.

VARIETIES. Eczema erythematosum; eczema vesiculosum; papulosum; eczema pustulosum; eczema rubrum; eczema squamosum; eczema fissum; eczema verrucosum; eczema sclerosum.

CAUSES. Eczema attacks persons in all spheres, the rich, the poor, the infant, or the aged, and males or females. Many families, especially those having the "catarrhal predisposition or peculiarity of constitution," seem more liable; indeed, it appears probable that a predisposition to eczema may be transmitted from parent to child. Among the causes suggested are: dentition, improper food, gastro-intestinal disorders, intestinal parasites, deficient urinary secretion, the rheumatic and gouty diathesis, vaccination, prolonged contact of hot fomentations, heat and cold, and contact with the poison vine (*rhus toxicodendron*) and poison tree (*rhus venenata*). Obstructed circulation and nerve pressure, usually the splanchnics.

PATHOLOGY. Eczema is a catarrhal inflammation of the skin—a dermatitis, with superficial serous exudation. There is first hyperaemia, or congestion of the vessels of the skin—eczema erythematosum, when uniformly distributed, eczema papulosum, when the congestion is limited to distinct points. The hyperaemia is soon followed by a serous exudation. If the superficial exudation be profuse enough to form small drops, and if the epidermis possess sufficient resisting power not to give away immediately before it, vesicles form, producing the variety known as eczema vesiculosum; if the vesicles contain a large admixture of young cells, so that if the serum be turbid, yellow, and purulent, the vesicles become pustules, termed eczema pustulosum; if the serous exudation be not sufficient to either elevate or break through the epidermis, instead of either vesicles or pustules forming there occur dry scales, rising from the reddened skin—eczema



PLATE LXIX.—Manipulation of Locomotor Ataxia.





squamosum. When the exudation is sufficient to detach the epidermis, thus exposing the red and moist corium, it is termed *eczema rubrum*.

In chronic *eczema* the skin is subacutely inflamed; is very much thickened, hardened, and infiltrated with cells which extend throughout the entire corium, even into the subcutaneous connective tissue. The papillae are enlarged, and at times may be distinguished with the naked eye. Pigmentation may take place in the deep layers of the rete and in the corium, especially about the vessels.

**SYMPTOMS.** *Eczema* is the most common of all cutaneous affections, with symptoms varying in accordance with the particular variety of the affection and location, although the general characteristics of a catarrhal inflammation are present in all; these are redness, either limited or diffused; heat, of the part affected; swelling, the result of the serous exudation, giving rise either to a discharge (weeping), with subsequent crusting, or to the deposition of plastic material. The most constant, annoying, and troublesome symptom is the itching, or at times burning, which varies from that which is simply annoying to that which is almost unendurable.

*Eczema* runs its course either as an acute affection, lasting a few weeks, not to return, or to return acutely at wide intervals, or, as is much more frequently the case, it assumes a chronic state, continuing with more or less variations for months, years, or even a lifetime. It may appear upon any portion of the body, or involve the whole integument (*eczema universale*). The varieties are named in the order which the lesions assume at their commencement.

*Eczema Erythematosum*.—An erythema or redness of the surface, with a yellow tinge. The size of the macule may be very small, or quite extensive, with irregular outlines. There may be slight swelling of the patch, but no discharge occurs unless it be where two surfaces come into contact (*eczema intertrigo*), as about the genitalia. Cases without discharge are covered after a few days with a thin film of dry, exfoliating epidermis or scale (*eczema squamosum*). When a discharge (weeping) or moisture occurs, it is followed with more or less crusting.

Intense itching is a constant symptom.

*Eczema Papulosum*, or *Lichen Simplex*.—This variety of *eczema* appears in the form of small, rounded papules, the size of a pin-head, of bright red, or at times dark red color; they may be

either discrete or confluent. In some cases all, while in others a greater or less number, of the papules pass into vesicles and run much the same course as vesicular eczema. The itching is of the most intense character, leading to severe scratching, by which the summits of the papules are torn, causing them to bleed, the blood forming dark red crusts.

*Eczema Vesiculosum*—Begins with burning, pain, redness, and swelling, followed by an immense number of minute vesicles, either discrete or confluent, rapidly distending with a clear or yellowish fluid and attended with intense itching. Soon the vesicles rupture, the fluid rapidly diffusing over the surface and drying into yellowish, honey-like crusts. New crops of vesicles soon follow, or if subsequent vesications do not occur, the fluid rapidly diffuses over the excoriated surface, which also, in turn, dries into large, yellowish crusts. After a variable time the various symptoms gradually subside.

Itching is the most prominent subjective symptom, is intense, and gives rise to an irresistible desire to scratch.

All portions of the body are liable to this variety of eczema, the most frequent location, however, being the face, and when occurring in children is commonly known as *crusta lactea*.

*Eczema Pustulosum*, or *Eczema Impetiginosum*.—This variety usually begins as vesicular eczema, the fluid rapidly changing to pus. After a short period, during which the pustules have increased in size, they burst, and the escaped fluid forms thick, greenish-yellow crusts, which in turn, rapidly dry and fall off, or crumble away.

The location of the variety is most usually upon the scalp and face. It is stubborn to treatment. Itching is a prominent symptom.

*Eczema Rubrum*, or *Eczema Madidans*.—This is a variety only from a clinical standpoint. It may result from any of the foregoing varieties. The surface of the skin is inflamed and infiltrated, red, moist, and weeping, the profuse serum rapidly drying into thick, yellowish, greenish, or brownish crusts, the color depending upon the character of the fluid, which may be serum, pus, or blood from the exposed and lacerated corium. The crusts adhere closely and firmly to the part, and unless removed by mechanical means, may remain indefinitely, the disease pursuing its course beneath. *Eczema rubrum*, or *madidans*, "then, presents two appearances—as it occurs with its crust, and as it exists without this covering. In the one case the skin itself is altogether

obscured by a dirty, yellowish, or brownish crust; in the other the skin presents a bright or violaceous red, punctate, wounded surface, deprived in great part of its epidermis, and exuding a scanty or profuse, clear or opaque, syrupy, yellowish fluid. Sometimes this is streaked with blood." The itching and burning are severe. It may develop upon any portion of the body, but is most commonly seen upon the legs, particularly in the elderly people. Its course is chronic and increasing in severity.

*Eczema Squamosum*.—This is also a clinical variety. It results from erythematous, vesicular, pustular, or papular varieties of the affection, but more particularly the first named. A typical case presents itself in the form of variously sized and shaped reddish patches, which are dry, or more or less scaly, the skin being more or less infiltrated or thickened. Its course is usually chronic.

*Eczema Fissum*, or *Rimosum*.—Another clinical variety. During the progress of the erythematous, vesicular, or pustular varieties of eczema, cracks or fissures result when the lesion occurs upon regions subject to constant motion, such as between the fingers, toes, and the various joints. At times the fissures are extensive and deep, and of a bright red color, showing the true skin, and intensely painful upon motion. Chapped hands are typical instances of fissured eczema.

*Eczema Sclerosum*.—This variety of eczema, occurring most commonly on the palms, soles, and finger tips, is characterized by hypertrophy of the papillae, showing itself as hard, thickened, infiltrated, localized patches, which are most apt to crack (*eczema fissum*).

*Eczema Verrucosum*, or *Papillomatsum*.—Differs from the foregoing in that the thickened, infiltrated patch has a warty, verrucous appearance. Its course is chronic.

*Eczema Acutum et Chronicum*.—The line which divides these two conditions is drawn by means of the clinical and pathological features. The course of eczema, in the majority of instances, is chronic. It may be said that so long as the general inflammatory symptoms are high and the secondary changes slight, the affection is acute, and that when the process has settled itself into a definite line of action, continually repeating itself and accompanied by secondary changes, it is chronic.

**DIAGNOSIS.** The many varieties in which eczema manifests itself render the diagnosis a matter of importance. The following characteristic features of eczema are of value in arriving at a



diagnosis: inflammation, swelling and oedema, thickening from cell infiltration, redness, the discharge of moisture, followed by crusting, on removal of which a moist surface is presented, and itching and burning.

Erysipelas may be confounded with erythematous or vesicular eczema. The points of difference are the fever and other general disturbances. The deep-seated inflammation of the skin, rapidly spreading, with heat, swelling and oedema without moisture, giving the surface a deep red, shining, and tense appearance, are characteristic of erysipelas and very different from eczema.

Herpes and vesicular eczema bear some resemblance to each other; herpes zoster is distinguished by the neuralgic pains which are associated with it, and are never associated with eczema. The other varieties of herpes occurring about the face and genitalia run their course in a few days, while eczema is of much longer duration, and has a discharge followed by crusting.

Seborrhoea of the scalp and squamous eczema of the same region closely resemble each other. In eczema, however, the skin is more or less red, inflamed, and thickened, and the scales larger, less abundant, and less greasy and drier than seborrhoea. In eczema the scales are usually seated upon a circumscribed patch, while in seborrhoea, as a rule, they cover the scalp uniformly. Itching occurs with both disorders. The history of the two affections should be of material aid to render the diagnosis clear; still, however, in many cases the difficulty is marked. Both are frequent affections.

Psoriasis should never be confounded with a typical case of eczema, but chronic eczema, with infiltrated, inflammatory, scaly patches, frequently looks very much like psoriasis.

#### THE TREATMENT.

The various forms of inflammations succumb to the treatment for restoring normal circulation over, in, and throughout the system. The means recommended should be used, and persistently applied result in amelioration, generally.

The tissue elements sometimes are indicated (the Kali sulph.), and attention to the terminal end filaments of the sympathetic nerves in the sphincters, the liberation of the obstructed venous channels, especially under the arms and in the angles of limbs, at the elbows, knees and at the hips.

The use of chloride of sodium for excessive moisture is indicated. The tissue elements should not be neglected. Certain food known to excite the skin should be avoided. Due attention

to cleanliness should be had. The use of salt baths (not strong) should not be forgotten. All of the varieties are usually amenable to general treatment persistently applied three times a week.

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## URTICARIA.

**SYNONYMS.** Hives; nettle-rash.

**DEFINITION.** An inflammation of the skin characterized by the development of wheals of a whitish, pinkish, or reddish color, accompanied by stinging, pricking, and tingling sensations.

**CAUSES.** Very frequently the result of sudden surface hyperaemia, or rather too rapid circulation through the superficial capillaries, the result of exposure to heat. Irritants and poison produce an attack when brought into contact with the skin. Gastric, intestinal, hepatic, nephritic, ovarian, uterine, and bladder derangements are very frequent causes. Certain medicaments; malaria; nervous disorders; associated with purpura and rheumatism; pregnancy; lactation; menopause.

**PATHOLOGY.** An acute inflammation of the papillary layer of the skin, characterized by the rapid development of a "wheal"—a more or less firm elevation—consisting of a circumscribed collection of a semi-fluid material, the result of a rapid exudation into the upper layers of the skin. The production of the wheal is the immediate result of a disturbance of the vaso-motor system, which is shown by the interference of the circulation in the wheal, the blood being driven from its center to its periphery, causing the whitish apex and red areola, so characteristic of the developed wheal.

**SYMPTOMS.** An attack of "hives" is characterized by the sudden development of wheals upon the cutaneous surface, which usually as suddenly disappear, their site being temporarily marked by a spot of redness or hyperaemia.

With the appearance of the wheal occur distressing itching, burning, tingling, crawling, pricking, and stinging sensations, to relieve which the patient still further irritates, tears, or otherwise wounds the surface by scratching, whence are often developed deep-colored, flat, lenticular papules.

Very frequently an attack of "hives" is associated with fever, headache, and gastric disorder. The "wheals" may appear upon any portion of the body; their size varies from that of a pea to that of a walnut or an egg—the "giant wheals"; the number vary-

ing from a very few to being so numerous as to cover the whole surface of the body. The shape, size, color, and number of the wheals that may occur in any given case have given rise to a number of names to designate the lesions. Thus, *urticaria annularis* occurs in rings; *urticaria figurata* occurs in spirals; *urticaria vesiculosa* has a vesicular development at the summit of the wheal; *urticaria bullosa*, a bullous development at the summit; *urticaria papulosa*, or *lichen urticatus*, the wheal and a small papule are combined; *urticaria tuberosa*, or giant wheals; *urticaria hemorrhagica*, or *purpurta urticaria*, a combination of *urticaria* and *purpura*; *urticaria evanida*, a rapid appearance and disappearance of the lesion; *urticaria perstans*, slow disappearance; *urticaria conferta*, when the wheals are confluent; *urticaria pigmentosa*, where the wheals are succeeded by pigmentations of the site, the tints varying from dark brown, greenish yellow, to a chocolate color; *urticaria febrilis*, when the wheals are associated with fever; *urticaria ab ingestis*, when associated with indigestion.

#### THE TREATMENT.

The treatment to consider first is the digestive tract, especially the stomach, and the arrest of the capillary congestion in portions of superficial capillaries. This is done by increasing the general circulation by general treatment. All difficulties of this sort are due to indigestion or a peculiar idiosyncrasis, that of certain ingesta, and more especially salads, fish, etc.

We have used the third potency of *Rhus. tox.* in the active, itching stage. *Kali sulph.* is a good remedy. The restoration of general circulation seems to be effectual. Treat the splanchnics to establish digestion, as directed elsewhere. Take off the pressure from nerves.

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#### HERPES.

**DEFINITION.** An acute inflammation of the skin, characterized by the development of one or more groups of vesicles, filled with a clear serum, occurring for the most part about the face (*herpes facialis*) and genitalia (*herpes pro genitalis*).

**CAUSES.** *Herpes facialis*.—During the course of febrile and nervous disorders; in connection with digestive disorders and colds. *Herpes pro genitalis*.—The origin is local, from uncleanness or friction.

**PATHOLOGY.** *Hebra* defines the various forms of herpes as

“a series of acute cutaneous diseases of cyclical course, marked by an exudation which collects in drops under the epidermis and elevates it; forming vesicles which are never solitary, but always appear in groups.”

**SYMPTOMS.** The appearance of the vesicles is usually preceded by a feeling of heat in the region, together with slight tumefaction or swelling. Rarely the herpetic attack is attended with malaise and pyrexia. The eruption usually appears in the form of a small cluster of pin-head to split-pea-sized vesicles, containing a clear fluid, becoming cloudy, afterward puriform, and dries in small, yellowish or brownish crusts; they are few in number and may coalesce. They disappear without leaving a scar. Herpes facialis occur upon any portion of the face, but most frequently about the lips—herpes labialis. The alae of the nose, auricles, and the mucous membranes of the mouth and tongue are frequent locations, in the latter appearing as excoriated patches from rupture of the vesicles.

**Herpes Progenitalis.**—In the male the chief site is the prepuce (herpes praeputialis). In the female they are comparatively rare; but when occurring, it is upon the labia majora and minora and the skin about the vulva.

This variety is preceded by burning, itching, or neuralgic pains, accompanied by redness, congestion, and more or less oedema. The lesion in these parts is likely to be mistaken for one form or other of venereal disease.

**Herpes Gestationis.**—A rare affection of the skin occurring during pregnancy, consisting of erythema, papules, vesicles, and bullae, attended with intense burning and itching. It may appear at any time of pregnancy up to the seventh month, and continues until some time after delivery.

#### THE TREATMENT.

Everything from a “black cat’s blood” to hydrargyri chloridi mitis has been used for “shingles.” Nothing is so effectual as our method of restoring the normal circulation. Arousing the glandular system to normal action, and connecting the nerve filaments of the motor and sympathetic nerves, remedies all the trouble. Chloride of sodium is deficient in the elementary constituents—use it; arouse the circulation of lymphatics and venous blood; vibrate the parts around the sides of the pustules, and finally on them, daily, and then every other day, until entirely relieved.



Miliaria, Pemphigus and Impetigo should receive a like treatment as Herpes, locally and generally.

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### HERPES ZOSTER.

**SYNONYMS.** Zono; shingles; a girdle.

**DEFINITION.** An acute, inflammatory disease; characterized by the development of groups of firm and distended vesicles situated upon inflamed bases corresponding to a definite nerve trunk, and accompanied by more or less severe neuralgic pains.

**CAUSES.** The eruption and consequent neuralgic pains are the immediate result of an inflammation of the ganglia or of the nerve trunks and branches—a neuritis—probably of the trophic fibers of the affected part; but the cause producing this condition is obscure. Among the many that have been suggested are: cold, injuries to nerves, anemia, and the medicinal use of arsenicum.

**PATHOLOGY.** An inflammation of either the ganglia, the nerve trunk—probably the trophic system—causing the development of vesicles in the lower strata of the rete, with infiltration of serum.

**SYMPTOMS.** Begins with neuralgic pains, either of the burning or lightning-like character, with slight febrile phenomena, followed by the appearance of papulo-vesicles along the tract of pain; these soon become vesicles situated on bright red, highly-inflamed bases. The vesicles are about the size of pin-heads, or perhaps a little larger, usually discrete, although they frequently coalesce, forming irregular patches, coming in groups until the third to the fifth or even tenth day, when they gradually desiccate, and at the end of the second week nothing remains but a slight scar, which may also disappear after a time or, rarely, is permanent. When the eruption is at its height it is perfect in its anatomical formation, each vesicle being well-shaped and seated on a bright red, inflamed patch of skin, and distended with a translucent, yellowish fluid.

The eruption is almost invariably confined to one side (unilateral) of the body, although, in rare instances, it is seen upon both (bilateral) sides. It is usually found upon nerve tracts. According to the region affected, it is termed zoster capitis, zoster frontalis, zoster faciei, zoster ophthalmicus, zoster auricularis, zoster nuchae, zoster brachialis, zoster pectoralis, zoster abdominalis, zoster femoralis.



PLATE LXX.—Showing Treatment for Eye Troubles.



In the very young the eruption may develop and pursue its course without the neuralgic pains.

**DIAGNOSIS.** The characteristics of herpes zoster or shingles are usually so well marked that an error in diagnosis should not occur. The neuralgic pain preceding the eruption and its development in distinct groups upon inflamed bases following a nerve tract are so different from the simple herpes of the face, or genitalia, or from the lesion of eczema.

**PROGNOSIS.** Favorable. The affection is self-limited, the duration being about two weeks.

**TREATMENT.** Same as in Herpes, locally and generally. Give special attention to nerves controlling digestion.

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### MILIARIA.

**SYNONYMS.** Lichen tropicus; miliaria rubra; miliaria alba; prickly heat.

**DEFINITION.** An acute inflammation of the sweat glands; characterized by the development of discrete, whitish or reddish, pin-point and millet-seed-sized papules, vesicles, or vesiculo-papules, productive of prickling, tingling, and burning sensations of a most aggravated character.

**CAUSES.** Excessive heat, the result of excessive or tightly-fitting clothing, or a high external temperature. Most common in fleshy adults who perspire freely, and in children. Nervous prostration; severe dyspepsia and general debility seem to predispose to "prickly heat."

**VARIETIES.** Miliaria papulosa; miliaria vesiculosa.

**PATHOLOGY.** The pathology of the two varieties is the same, both being inflammatory affections of the sweat glands; in the one papules, and in the other vesicles develop about the orifices of the excretory ducts. In either variety there occurs hyperaemia of the vascular plexus of the sweat glands, followed by slight exudation about the ducts, giving rise to the minute papules or vesicles, which remain until the cause has been modified or removed, when they are rapidly absorbed.

**SYMPTOMS.** Miliaria Papulosa—Known as lichen tropicus and "prickly heat," is of a sudden onset, with the occurrence of numerous minute, acuminated bright red papules, about the size of a pin-head or millet-seed, and but slightly raised above the level of the skin. The papules are preceded by and accompanied with



sweating (hyperidrosis), and distressing tingling, pricking, and burning sensations. If the attack be severe, vesico-papules and vesicles are freely interspersed among the numerous papules. Rarely the secretion of sweat is notably diminished.

*Miliaria Vesiculosa*.—In this variety, instead of papules, immense numbers of vesicles develop, of the size of pin-points and pin-heads, or a whitish (*miliaria alba*) or yellowish-white color. The surface from which they rise is of a bright red color, owing to each vesicle being surrounded by an areola (*miliaria rubra*). The vesicles are preceded and accompanied with sweating (hyperidrosis) and the most distressing tingling, pricking, and burning sensations.

Either variety may attack all parts of the body, but the abdomen, chest, back, neck and arms are the regions usually invaded.

**DURATION.** This varies with the cause. It may appear, fully develop, and disappear in a few hours. In those predisposed it may continue more or less marked through the entire summer.

**DIAGNOSIS.** If the cause, nature, and seat of the affection are taken into consideration, no error should occur.

*Eczema papulosum* has a resemblance to "prickly heat," but the course of the eczema is slow, and the papules are larger, more elevated, and firmer than those of *miliaria papulosa*.

**TREATMENT.** Same as in Herpes, locally and generally.

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## PEMPHIGUS.

**SYNONYM.** Water blisters.

**DEFINITION.** An inflammatory disease of the skin, either acute or chronic, characterized by the development of a succession of rounded, irregular-shaped blebs or bullae, varying in size from a pea to an egg.

**VARIETIES.** *Pemphigus vulgaris*; *pemphigus foliaceus*.

**CAUSES.** Obscure. It is usually associated with a depressed state of the general system; disorders of menstruation; during pregnancy.

**PATHOLOGY.** Hebra thus describes the appearance of the blebs: "Sometimes a circumscribed, light-red spot appears, perhaps of the size of a bean or a large coin; this is paler in the center, and may even present a tinge of white, indicating the point at which the bleb is to form, and from which it will spread outward

over the surrounding skin, and, in fact, is at first a wheal, passing afterward into a bleb. In other cases the bleb is not preceded either by a red spot or by a wheal, but begins originally as a small collection of clear fluid beneath the cuticle. Thus, hyperaemia of the skin may exist before exudation is poured out, or the latter may be formed before any congestion of the papillary layer is discoverable."

The contents of the blebs or bullae are yellowish or colorless serum, of a neutral or alkaline reaction; the older the fluid the more alkaline it becomes. In the late stages of a bleb the fluid becomes puriform. In rare instances blood is contained in the bleb (*pemphigus hemorrhagicus*).

**SYMPTOMS.** *Pemphigus Vulgaris*.—The onset is slow (*pemphigus chronicus*), without constitutional symptoms, or acute (*pemphigus acutus*), preceded by febrile reaction. The lesions are the successive development of blebs, usually from half a dozen to a dozen, varying in size from a pea to an egg, of a round or oval shape, their walls distended with a colorless fluid, the color becoming yellowish or puriform as they grow older. They develop abruptly from the sound skin, with a definite line of demarcation, unattended with symptoms of inflammation. A characteristic phenomenon of the lesion is their successive appearance; a crop no sooner disappears than another forms, throughout the course of the affection, each crop running its course in from three to six or ten days. With the appearance of the blebs occur itching and burning, usually of a mild character, although occasionally in a distressing degree (*pemphigus pruriginosus*).

*Pemphigus Malignus*—Is characterized by the great size and number of the blebs, which coalesce, rupture, and are succeeded by excoriated surfaces, which occasionally take on ulcerative action, the patient's health being seriously impaired.

*Pemphigus Foliaceus*—Differs from *pemphigus vulgaris* in that the blebs, instead of being distended or tense, are flaccid and only partially filled with fluid, as they rupture before arriving at their state of full development. This variety also appears and disappears in crops. After rupture the fluid immediately dries into thin whitish flakes, which are detached in quantity, leaving a red, excoriated surface—the rete and corium. If the affection has continued for some time, the skin presents the appearance of a superficial scald. The course of this variety is essentially chronic.

All portions of the body are liable to the lesion, as also the

mucous membrane of the mouth and the vagina. It is most common, however, upon the limbs.

**DIAGNOSIS.** In a typical case no difficulty should be experienced in making a diagnosis. The mere presence of blebs, however, does not necessarily constitute pemphigus, for it must be remembered that they are at times developed in other diseases, as well as by artificial means; the appearance of blebs in crops is a strong diagnostic point.

**PROGNOSIS.** The course of the affection is most uncertain, and relapses are frequent. In arriving at an opinion, the occurrence of fatal cases must not be forgotten.

**TREATMENT.** Same as in Herpes, locally and generally.

### IMPETIGO.

**DEFINITION.** An acute inflammatory disease, characterized by the development of one or more discrete, rounded, and elevated, firm pustules, about the size of a pea, unattended with itching.

**CAUSES.** Occurs for the most part between the ages of three and ten years, in the well-nourished and healthy. It is not associated with eczema. It is not contagious.

**PATHOLOGY.** The lesion is a well-formed, typical pustule, developing abruptly from the surface, containing a whitish-yellow fluid, pus corpuscles, blood corpuscles, epithelial cells, and cellular detritus. The abscess or pustule is about the size of a pea, circumscribed, and superficial.

**SYNONYMS.** The affection manifests itself by the development of from one or two to a dozen or more distinct pustules, about the size of a split pea, of a rounded shape, raised above the surface, with thick walls, of a yellowish or whitish color, surrounded by a distinct areola, which soon fades, are without a central depression or umbilication, and unattended with either itching or burning.

The affection runs an acute course, usually lasting a couple of weeks. The pustules, after attaining their full size, remain stationary for a few days, when they disappear by absorption and desiccation, the crusts dropping off, displaying a reddish base, which soon disappears with pigmentation or scar.

The pustules occur on all portions of the body, the most

frequent locations being the face, hands, fingers, feet, toes and lower extremities.

**DIAGNOSIS.** Impetigo is unassociated with general symptoms, and its particular lesion—the pustule—is discrete, points of importance in the diagnosis.

Eczema pustulosum is also a pustular affection, but the large number, their disposition to coalesce, their location upon an inflammatory base, their rupture and subsequent crusting and itching, are diagnostic points.

The diagnostic points from ecthyma will be pointed out when describing that affection.

**PROGNOSIS.** Favorable.

**TREATMENT.** Same as in Herpes, locally and generally.

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### ECTHYMA.

**DEFINITION.** An affection of the skin, characterized by the formation of one or more large, isolated, flat pustules, situated upon an inflammatory base.

**CAUSES.** It is most common among those who live in squalor and poverty, and in delicate and poorly-nourished children. Improper and insufficient diet, want of ventilation, excessive work, and uncleanness are all prominent causes.

**PATHOLOGY.** The lesion is a typical pustular process, severe but superficial, and not extending beyond the papillary layer of the corium. The pustule is situated upon a firm and highly-inflamed base; the number varies from one to a dozen or more.

**SYMPTOMS.** The disease is characterized by the development of one or more round or oval, yet flat, pustules, about the size of a pea-bean, attended with moderate heat, burning and pain, and if the number be large, slight febrile reaction. The pustules are first yellowish in color, surrounded by a firm and sensitive bright red areola, the pustule afterward becoming reddish from the admixture of blood, soon drying into flat crusts of a brownish color. The duration of each pustule is between two and three weeks, new ones forming until the cause is removed.

The most prominent sites are the thighs, legs, shoulders, and back.

**DIAGNOSIS.** Ecthyma and eczema pustulosum have points of resemblance, but a study of the clinical history of the latter should prevent error.



Impetigo differs from ecthyma in the size of the pustule and crust. Ecthyma differs from a boil in not having a central core.

PROGNOSIS. With care and the removal of the cause, recovery is always prompt.

#### THE TREATMENT.

Besides the general treatment, use local vibratory movements around the pustules. Beginning some distance from the same, using one finger, circle round the tumor, rapidly, using considerable pressure, gradually drawing nearer to the sore, and continue these movements slowly, but kept up for ten or fifteen minutes, and ending these manipulations on the summit of the boil or tumor.

These will be discussed at one sitting if not too far advanced. If not, the process should be repeated at intervals of twelve to twenty-four hours. In the case of carbuncles it will be necessary to exercise more force and persistency, and if the element of Silicia be used, sixth potency, amelioration will be more rapid, as connective tissue elements are deficient, and should be administered.

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### FURUNCULUS.

SYNONYMS. Furunculosis; furuncle; boil.

DEFINITION. An acute affection of the skin, characterized by the occurrence of one or more circumscribed cutaneous or subcutaneous abscesses (boils), which usually terminate by necrosis of the central tissue, its subsequent expulsion in the form of pus or a core, and a resulting cicatrix.

CAUSES. The result of a depraved condition of the system, induced by general debility, excessive fatigue, nervous depression, improper food and exercise, anaemia, diabetes, uraemia, or the result of local friction, pressure, or contusions.

PATHOLOGY. The process resulting in a "boil" has its origin in either a sebaceous gland, a sweat gland, or a piliary follicle, and never begins in the meshes of the corium. "It begins as a small, roundish spot, which increases in size until certain dimensions are attained, when it undergoes suppurative change, resulting in the formation of a central point or core, composed of the tissue of the gland in which the furuncle originated, which, together with the pus, is cast off. It shows no disposition to become diffuse, being always a circumscribed inflammation.

After the discharge of the core, a cavity of more or less depth remains, showing the tissues around it to be hard and infiltrated. After a few days or a week it fills up by granulation, leaving a cicatrix, which is often permanent. The central point or core, when thrown off, is composed of a whitish, tough, pultaceous mass of dead tissue, varying in size with the extent and depth of the inflammation." (Duhring.)

Hydro-adenitis, as seen in the axillae, around the nipples, and about the anus or perineum, differs from the ordinary "boil" merely in being deeper seated.

SYMPTOMS. "Boils" may occur singly, or more commonly in crops of two, three, or more, another crop following their disappearance (furunculosis).

The abscess begins as a small, rounded, imperfectly defined, isolated, reddish spot, of a highly inflamed character, painful on pressure, its size gradually increasing, its central point presenting evidences of suppuration. It reaches its full development in about a week, when it consists of a slightly raised, rounded, and pointed inflammatory swelling with a yellowish point in the center—the "core." Abscesses with no central suppuration or core are called "blind boils." The size of a developed boil varies from a split pea to a walnut, the color deep red, with a yellow center, and is surrounded by a slight areola. The pain of a boil is dull and throbbing, painful on pressure, and is usually worse at night. The constitutional symptoms are mild or severe, according to the number and size of the lesions.

Any portion of the body may be attacked; its preference, however, is for the face, neck, back, axillae, nipples, buttocks, anus, perineum and labiae.

DIAGNOSIS. The characteristics of furuncle are so marked that an error seems impossible. It may be, however, mistaken for carbuncle, the differences between which will be pointed out when discussing that affection.

TREATMENT. Same as for Ecthyma.

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## CARBUNCULUS.

SYNONYMS. Carbuncle; anthrax.

DEFINITION. An indurated, more or less circumscribed, dark red, painful, deep-seated inflammation of the skin and sub-

cutaneous connective tissue, terminating in a slough and the subsequent production of a permanent cicatrix.

**CAUSES.** Not positively determined. A deep-seated bruise is a supposed cause. Perhaps, as in furuncle, impairment of the general health is the important factor. It is generally noted to occur in middle life and old age, and in men more frequently than in women. A "specific" cause for anthrax is not an improbable discovery.

**PATHOLOGY.** Although Billroth regards furuncle and carbuncle as differing only in degree, the explanation of Warren, of Boston, seems the more probable, he being the first to call the attention of histologists "to the existence of small columns of adipose tissue leading from the panniculus adiposus up to the roots of the lanugo hairs, taking an oblique direction in a line with the erectors pilorum. The inflammation resulting in supuration of the subcutaneous adipose tissue must either form an abscess or become diffuse. In phlegmonous erysipelas the latter condition is observed. But when the inflammation is in the dermoid texture, the exudates infiltrate the skin and naturally follow the canals occupied by the 'columnae adiposae.' The pressure thus exerted upon the whole dermoid tissue can not fail to strangulate the circulation, and thus produce gangrene of the tissue, even if the exudate be not poisonous enough to destroy the cells by its presence. It can, by this explanation, be easily understood why this disease is apt to affect the skin on the nape of the neck and the back more than on other parts of the body. At this point the skin is dense, its fibrous element extending deep into the adipose layer, which is surrounded with strong bands; hence, the pus confined in such a place, seeking the easiest outlet, will travel along these miniature adipose canals, producing the peculiar appearance pathognomonic of carbuncle."

**SYMPTOMS.** Carbuncle is recognized by its peculiar form; commencing in the lower layers of the cutaneous tissue, it first resembles somewhat a phlegmon minus its bright redness. At first it is somewhat rounded, with a strong tendency to the production of vesicles on its surface; soon, however, becoming firm, circular and flat, and raised above the surrounding parts, spreading through the subcutaneous tissue and skin, becoming at times enormously large, and having a dark red or violaceous color. As the disease progresses, the pressure results in the softening of the tissues, the skin becoming gangrenous, breaking down at numerous points, forming perforations, through which



PLATE LXXXI.—Flexing Limb on Thigh and Abdomen.





centers of suppuration appear in different stages of advancement, either as whitish, fibrous plugs, or as cavities, from which a yellowish, sanious fluid oozes, the surface of the anthrax having a cribriform appearance, perforated like a sieve. The entire mass terminates in a slough, which, on being detached, leaves a large, open, deep ulcer, with firm, everted edges, granulating slowly, a permanent cicatrix marking the site of the lesion. The development of the carbuncle is attended with severe pain, of a deep, throbbing, and burning character. The constitutional symptoms vary with the size, number, and severity of the disease; loss of appetite, coated tongue, general malaise, and moderate febrile reaction accompany all cases, to which are added those of septicaemia in severe cases.

The duration is from two to six weeks. Its favorite site is the back of the neck, shoulders, back, and buttocks. It is usually single.

**DIAGNOSIS.** The disease is distinguished from furuncle by its great size, its flat form, its course, the multiple points of suppuration, and the character of the slough. Also, by the pain; in furuncle, sensitive and painful to the touch, carbuncle not being particularly sensitive. Furuncles generally occur in numbers or in crops; carbuncle is almost always single.

**PROGNOSIS.** A guarded opinion should always be given, as death is not infrequent from anthrax, especially in elderly people with impaired health. The mortality, however, is not so great as the laity suppose. A great danger is septicaemia, from the action of the poison on the blood, or the result of secondary abscesses.

**TREATMENT.** Same as for Ecthyma.

When called late, and the carbuncle has broken down, the integument abraded, the local application of pure carbolic acid, once in twenty-four hours, does much in arresting the progress of degeneration of tissue. Keep up free circulation and vibratory movements until cured. Study the tissue side of these affections. Supply them somehow, either with food or the element prepared as stated above.

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## ACNE.

**SYNONYMS.** Acne vulgaris; acne disseminata; varus; stone-pock.

**DEFINITION.** An inflammation, usually chronic, of the seba-

ceous glands ; characterized by the development of papules, tubercles, or pustules, or by a combination of such lesions, usually in various stages of formation, occurring for the most part upon the face.

VARIETIES. *Acne papulosa* ; *acne pustulosa* ; *acne artificialis*.

CAUSES. Not always understood, as the affection is frequently associated with apparently the most robust health. A frequent cause is puberty. Among the other causes observed are gastro-intestinal disorders, anaemia, chlorosis, uterine disorders, urethral irritation, scrofula, and the use of large doses of the bromides and iodides. *Acne* may exist alone or be associated with *comedo* or *seborrhoea*.

PATHOLOGY. An inflammation of the sebaceous gland structure and surrounding tissues. There first occurs retention of the sebaceous secretion, which is soon followed by hyperaemia and exudation about the glands and in the gland wall (*acne papulosa*), infiltration of the connective tissue (*acne tubercula*), followed by suppuration (*acne pustulosa*). If the inflammatory action be severe, destruction of the gland with a resulting *cicatrix* occurs.

SYMPTOMS. *Acne Papulosa* or *Acne Punctata*.—This variety of the affection is the earliest stage of the inflammatory action, and is usually of short duration, being soon followed by the development of pus. It is characterized by the occurrence of pin-head to pea-sized, flat, more or less pointed papules, situated about the sebaceous follicles, lightish in color, with a minute central black point, the opening of the sebaceous duct. Pustules are not infrequently observed scattered among the papules. The lesion is unaccompanied with either local or constitutional symptoms. While the forehead is the most frequent seat for this variety, they sometimes are seen elsewhere.

*Acne Pustulosa*.—This is the fully developed affection. It is seen upon the face, neck, shoulders, and back, as pin-head to pea-sized, rounded or acuminated pustules, seated upon an infiltrated, reddish base of superficial or deep inflammatory product (*acne indurata*). Scattered among the pustules may be seen numerous papules. There are no constitutional symptoms, nor is pain complained of unless the pustule be handled.

*Acne Artificialis*—Is rather a clinical variety, the result, usually, of large doses of the bromides or iodides, the lesion being identical with *acne pustulosa*.

DIAGNOSIS. The lesion is so characteristic, the course so

chronic, and the location so frequently upon the face, that an error seems impossible if care be exercised. The resemblance of the papular and pustular syphiloderms must not be mistaken for acne.

PROGNOSIS. Essentially a chronic affection, lasting for a number of years; but if persistent treatment be employed, recovery will occur.

#### THE TREATMENT.

The chemical changes that take place during the sluggish peristalsis of the capillaries account for the necessity of instituting means to regulate the circulation of the fluids. Take off the pressure, not only in the arteries and veins and the lymphatic tubes, but from the tubes that prevent the outflow of the fluid in the sebaceous glands. The sameness of the proceedings to establish normal circulation seems to the looker-on paradoxical, but the skilled Osteopath perceives the difference necessary to manipulate the different tissues involved, to increase the forces that promote circulation of all the fluids involved in the case. In the glandular system undergoing the changes the results are either from interference in the molecules of the sebaceous system from lack of elements by deficient salivary secretion being mixed in the food during the process of mastication, or directly from impediment in the smaller blood vessels in the integument itself. Attention to digestion of food eaten, and the promotion of the proper, uninterrupted circulation of the blood and other fluids, restores the skin to a normal state in due time. Healthy blood restores tissue wherever permitted to flow, provided the sympathetic nervous system is properly connected with the motor system of nerves. This understood, opens up the phenomena of the cure of all diseases by removing pressure. The use of weak salt baths should receive due and careful, persistent attention in all skin affections.

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#### ACNE ROSACEA.

SYNONYMS. *Gutta rosea*; *gutta rosacea*.

DEFINITION. A chronic hyperaemia or inflammatory affection of the nose and cheeks; characterized by redness, hypertrophy of the skin, and dilatation and enlargement of the blood-vessels supplying the part, and the development of more or less acne. The nose and cheeks are the most frequent location.



**CAUSES.** Not always determined. It occurs in young women about puberty who are anaemic, or suffer from a general debility, nervous irritability, or prostration, dyspepsia, or menstrual irregularities. It often appears during the menopause. In young males the affection can often be traced to nervous or general debility or dyspepsia. The use of spirituous liquors or of large amounts of condiments are frequent causes, as is constant exposure to the weather. It is frequently associated with seborrhoea.

**PATHOLOGY.** There first occurs blood stasis in the vessels of the part, producing the undue redness first noticed. As a result of the stasis, sooner or later the capillaries are dilated and hypertrophied, and as a result of the interrupted circulation inflammation of the sebaceous gland (acne) results, with the development of papules and pustules. This constitutes the typical acne rosacea. The affection may proceed no further, remaining at this point for years, or, rarely, the pathology of this stage is exaggerated, the involved tissues all hypertrophying, and the connective tissue undergoing a true hyperplasia, causing increased size and abnormal shape of the nose.

**SYMPTOMS.** The onset of the affection is slow and insidious, characterized at first by more or less diffused redness of the part, the color aggravated by water or cold air. If the nose be the part attacked, it is usually greasy (seborrhœic), and is apt to be cool or even cold. This condition may remain for years, but sooner or later the evidence of dilatation and hypertrophy of the capillaries is apparent by the more decided and permanent redness, and upon close examination the enlarged minute cutaneous blood-vessels are seen as delicate or coarse red lines, running superficially over the skin in an irregular and tortuous course. Soon are developed upon the hyperaemic and hypertrophied skin papules (acne papulosa) and pustules (acne pustulosa), their number never, however, being very great. This constitutes true acne rosacea. The disease may remain in this state, or, rarely, the cutaneous tissues are greatly hypertrophied, the blood vessels enormously dilated, the glands enlarged, and the connective tissue undergoes hyperplasia, resulting in permanent, dark red, bulky formations, the shape of the nose being contorted into various irregular forms. Duhring reports a case in which the nose was the size of the patient's fist (rhinophyma). The nose and cheeks are the usual location of the disease, although rarely it involves the forehead.

**DIAGNOSIS.** The characteristics of the disease are so marked, consisting of rosacea—the dilated and hypertrophic blood vessels—with papular and pustular acne superadded, that an error can hardly occur if due care be exercised.

Lupus vulgaris bears some resemblance to acne rosacea, as it is apt to develop about the face, and especially the nose; but the papules, tubercles, and pustules of lupus vulgaris soon ulcerate, followed by crusts and cicatrices, which never occur in acne rosacea.

Lupus erythematosus may be confounded with acne rosacea if it occurs upon the end of the nose; but in the former the skin is harsh and covered with adherent whitish and yellowish scales connected with the openings of the sebaceous follicles, which is never the case in acne rosacea.

Frostbite resembles the first stage of acne rosacea, but the history of the two conditions soon determines the diagnosis.

**PROGNOSIS.** Favorable, if treatment be instituted during the first stage. After hypertrophy has occurred but little can be accomplished.

**TREATMENT.** Same as for Acne.

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## PSORIASIS.

**SYNONYMS.** Lepra; alphas; psora; English leprosy.

**DEFINITION.** A chronic affection of the skin, characterized by reddish, more or less thickened and elevated, dry, inflammatory, and somewhat wrinkled patches, variable as to size, shape, and number, and covered with abundant whitish or grayish-colored, imbricated scales. It is not contagious.

**SYMPTOMS.** Psoriasis begins as small, reddish spots, of the size of a pin's head, which immediately become covered with scanty or abundant whitish or grayish, imbricated scales. The spots gradually increase in diameter, forming patches of various sizes and shapes.

If one of the scales be detached by means of the finger nail, it will be found to adhere quite firmly to the skin, and to be about the thickness of a card-board. If the reddish patch thus made bare be pinched up between the finger and thumb, and compared with a similar pinch of the healthy skin, its inflammatory thickening will be discerned. There is no watery discharge at any time. The skin between the patches is perfectly healthy.

While the anatomical lesions are always identical, the eruption assumes such features, as to the size and shape of the patches, as to give rise to special names.

**DIAGNOSIS.** Seborrhoea of the scalp and psoriasis of the same region frequently are difficult of diagnosis. In the former the scalp is paler, the scales are finer, smaller, more generally diffused, of a grayish or yellowish color, and greasy, sebaceous character. Psoriasis of the scalp is in patches, which are reddish and infiltrated, and there are almost always patches of the disease on other parts of the body.

**PROGNOSIS.** An attack can easily be removed.

#### THE TREATMENT.

This disease, like all other skin diseases, must be classed as a result of impeded circulation, and treated accordingly. The various forms signify no special indication in the treatment, only in so far as complications accompany the disorders of the various forms and stages of the skin diseases. The use of the tissue elements, Chloride of sodium, Kali sulph. and Silicia, and if indurated edges are discovered, Calc. fluoricum, is indicated. A careful study of the offices these tissue elements fill and perform in the physical economy will explain many pathological persistencies that are unexplainable on any other hypothesis—that of deficient co-ordination on account of the absence of the proper elements, and, per consequence, power to perform normal functions. All we need to cure any disease is normal constituents and freedom of the circulation of the blood, and other fluids, as well as nerve freedom (normal tension) everywhere.

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## HYPERTROPHIES OF THE SKIN.

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### LENTIGO.

**SYNONYM.** Freckles.

**DEFINITION.** A pigmentary deposit of the skin, characterized by irregularly shaped, pin-head, or pea-sized, yellowish, brownish, or blackish spots, occurring for the most part about the face and back of the hands.

**CAUSE.** In the majority of instances exposure to the sun is the exciting cause.

**PATHOLOGY.** In anatomical structure freckles consist of a

circumscribed, increased amount of normal pigment, differing from chloasma only in the peculiar form and size of the deposit.

**SYMPTOMS.** The number of "freckles" varies from a very few to immense numbers. They occur as brownish or yellowish-brown, small, roundish, irregular spots, most commonly upon the face and hands. Rarely the number is very great, and they give to the skin an uncleanly appearance. They are apt to occur at all ages, but rarely before the third year. They are unattended with itching or other subjective symptoms.

**PROGNOSIS.** Usually favorable. Their course, when left to themselves, is chronic, lasting for years or a lifetime. They ordinarily appear in the summer, fading away as cold weather approaches, to return the following summer.

#### THE TREATMENT.

Free the circulation of blood in veinlets daily. Stretch neck muscles thoroughly from side to side, lifting the pressure from the jugulars, dilate the nares, and manipulate by vibration every part of the face; induce deep inspirations; several sittings each day. Bathe the face with the salt water mentioned elsewhere; at all times water is used on the face, put salt in the water. Attend to the digestive tract. In addition, we would recommend Nat. mur. as a tissue element, 6x, three times daily, to supply element.

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### CHLOASMA.

**SYNONYMS.** Liver spots; moth.

**DEFINITION.** A pigmentary discoloration of the skin, characterized by variously-sized and shaped, more or less defined, smooth patches, or of a discoloration, yellowish, brownish, or blackish in color.

**CAUSE.** The etiology of chloasma depends upon whether the pigmentation is idiopathic or symptomatic in its occurrence. Idiopathic chloasma results from the irritation of long-continued scratching, such as is practiced in severe eczema or pediculosis, the application of blisters and sinapisms, heat, the direct rays of the sun, and various medicinal and chemical substances, such as follows the prolonged use of argentum (argyria). Symptomatic chloasma occurs in connection with cancer, malaria, tuberculosis, disease of the supra-renal capsule (Addison's disease), disease of the womb, pregnancy (chloasma uterinum), neurotic disturbances, anaemia, and chlorosis.



**PATHOLOGY.** The affection is an increased deposit of the normal pigment having its seat in the mucous layer of the epidermis. The deposition of the pigment is the result of a nervous derangement, possibly of the trophic system.

**SYMPTOMS.** Chloasma is simply a discoloration of the skin, unattended with alteration of the surface. The patches vary in size and shape; they may be as minute as a coin or as large as the hand, or much larger, even to a universal discoloration of the entire surface, and they may be roundish or irregular in outline. The usual color is yellowish, brownish, or muddy, or even blackish (*melasma melanoderma*).

In Addison's Disease, of a typical character, "the coloration is brownish, with an olive-greenish or bronze tint, and is general, although, as a rule, especially pronounced upon regions having a disposition to normal increase of pigment, as the face, backs of the hands, axillae, areolae of the nipples, and the genital organs; the hair, also, may become darkened. It may also occur with or follow other pigmentary changes, as of the hair. Gaskoin reports a case, occurring in a woman, aged forty-five, where the patch, situated on the cheek, near the nose, was intensely dark. It had existed nine years. The color of the hair had, fifteen years previously, changed from caroty-red to black.

In Argyria, or discoloration of the skin resulting from the internal use of nitrate of silver, the color is a bluish, bluish-gray, slate, bronze, or blackish, varying as to the shade. It occurs over the surface generally, but is more pronounced upon parts exposed, as the face and hands.

*Chloasma uterinum* occurs most frequently between the ages of twenty-five and fifty, seldom after the menopause, caused, in the greater number of instances, by changes, physiological and pathological, which take place in connection with the uterus. It is seen in the married and single, although much commoner in the former. Pregnancy is the most frequent cause, although also associated with either dysmenorrhoea, chlorosis, anaemia, or hysteria.

It is seen in the mildest degree about the eyelids, especially during the menstrual epoch, as a duskiness or swarthinness of the complexion, either lasting a few days or being permanent. As usually encountered, however, chloasma of this variety consists in the presence of one or several patches, appearing generally about the forehead or other parts of the face, upon the trunk, about the nipples, and upon the abdomen. Rarely the entire face



PLATE LXXII.—Showing Various Dorsal Treatments.



is covered with a discoloration, resembling a mask. Cases are recorded in which the pigmentary deposit was general, resembling Addison's disease.

**DIAGNOSIS.** Tinea versicolor and chloasma resemble each other in the color of the patches, but otherwise they have nothing in common. Tinea versicolor occurs on the trunk, while chloasma occurs upon the face and about the nipples, and in cases the result of pregnancy about the umbilicus, except in those comparatively rare instances in which the discoloration is diffused. The patches of chloasma are smooth, those of tinea versicolor furfuraceous, as can readily be demonstrated by gently scraping the discoloration with the finger nail.

**PROGNOSIS.** Unless the result of Addison's disease, the prolonged use of argenticum, tuberculosis, or cancer, favorable.

#### THE TREATMENT.

Liver spots were formerly supposed to indicate a bilious condition, and calomel was recommended. Excepting in case of pregnancy, general treatment offers the best results for this condition. The restoration of the normal circulation of the fluids all over and throughout every tissue is the all-important measure to institute. The proper adjustment of the system to itself is essential, for all unnatural depositions indicate sluggishness of circulation, and normal activity of the fluids means a clear, normal skin, all over the body. The endeavor to cover up abnormalities under cover of paints or salves, lotions or ointments, is deceptive. Restore a normal circulation and the cosmetic appearance is satisfactory. Stains from nitrate of silver are not easily removed, except by time. Salty solutions have a "fading effect" in such cases. Its use in sore eyes, long continued, colors them brownish yellow. Osteopathy does not change the color of the skin of the "Ethiopian" nor the leopard's spots, but it does restore to a normal condition abnormalities caused by impeded circulation, as a rule.

Treatments should be given regularly as often as necessary to induce normal circulation and to establish it. This will generally require every other day thorough general treatment, paying especial attention to the vibratory movements over the surface.



## CALLOSITAS.

SYNONYMS. Tyloma; callus; callosity.

DEFINITION. Callositas, or tyloma, consists in the development of a hard or horny, thickened patch of skin, variable in extent, and of a grayish, yellowish, or brownish color, and unattended with pain. The most frequent location is upon the hands and feet.

CAUSES. The result of pressure or friction, as in the case of the hands of the mechanic, the effect of his tools; or, if upon the foot, the result of ill-fitting shoes or from long marches. Callosities are also seen upon the fingers of violin, banjo and harp players.

PATHOLOGY. A hypertrophy of the horny layer of the skin, the corium remaining normal. The cells of the epidermis become so closely packed together as often to simulate horn substance.

SYMPTOMS. Callositas consists in an increase in the thickness of the skin of the affected part, presenting a firm, dense, more or less circumscribed structure, the extent of hardness varying considerably, sometimes being horny. The patch of hardness is generally about the size of a coin, roundish in shape, and somewhat elevated above the surrounding skin. The color of the patch may be either grayish, yellowish, or brownish. Callosities are usually upon the palms, fingers, soles and toes, although other parts, if exposed to the cause, may also be the seat. At times great pain and discomfort are experienced from the growth. Occasionally callosities are complicated by hyperaemia, fissure, acute inflammation, abscess, erysipelas, and serve readily as foci for such cutaneous diseases as eczema and psoriasis.

COURSE. Their formation and development is always slow and gradual. If the cause be removed, the prognosis is favorable.

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CLAVUS.

SYNONYM. Corn.

DEFINITION. A corn is a small, circumscribed, usually flat, deep-seated hypertrophy of the epidermis, having a horny feel, projecting slightly from the skin, painful upon pressure, situated, for the most part, about the toes.

CAUSE. Continued pressure or friction, usually from ill-fitting or tight boots or shoes.

**PATHOLOGY.** A *clavus* consists of a circumscribed, excessive hypertrophy of the epidermis of the same character as occurs in callosity, and of a central portion—the core. The core extends deeply into the tissues, in the shape of an inverted cone, the base of the cone being directed outward and appearing upon the surface as a roundish elevation, its apex resting upon the papillary layer of the corium. The core of a *clavus* consists of a whitish, opaque, firm, tenacious body, composed of epidermic cells, arranged in concentric laminae.

The pain attending the presence of corns results from pressure upon the true skin by the hard core causing irritation of the nerve filaments of the papillae.

Corns existing between two toes are constantly bathed with the moisture of the part, which macerates and softens the formation, which thus receives the name of soft corn, in contradistinction to the hard corn.

**SYMPTOMS.** Until the growth attains a considerable size no discomfort, as a rule, is felt. After, however, its depth has reached the true skin, pain of an intermittent character, aggravated by pressure, is the chief symptom. Corns are often weather-sensitive, being unusually painful before, during, or after the occurrence of storms, and should, therefore, not be confounded with gouty or rheumatic deposits below the skin.

#### THE TREATMENT.

These very annoying excrescences demand more than a passing notice, and will require sometimes, in some cases, more than simply a "protective plaster" or loose-fitting shoes. The motto we advise for special consideration is, *Take Off the Pressure*. Soft corns may be dissected without pain by beginning at the edge and peeling it right down to the normal endothelium, without pain. If that is not done, wrap the phalanx with a soft twine or yarn string, loosely, just forward or back of the corn, placing a sufficient number to raise a slight ridge on the toe. Wear this until cured. Foot-baths in warm water once a day, followed by the application of castor oil, is frequently a source of much gratification. A patient feels better to have something prospectively done. A good way to cure corns is to go "bare-footed." This effectually takes off the pressure, doesn't it? Set joints by all means.

## VERRUCA.

SYNONYM. Wart.

DEFINITION. A wart consists of a circumscribed hypertrophy of the papillary layer, with more or less epidermal accumulation, characterized by the appearance of a hard or soft, rounded, flat, or acuminated formation, of variable size.

VARIETIES. The following varieties have chiefly a descriptive value: *verruca vulgaris*; *verruca plana*; *verruca filiformis*; *verruca digitata*; *verruca acuminata*.

CAUSE. Obscure. The various assigned causes are probably incapable of producing the affection.

PATHOLOGY. While the anatomy of warts differs somewhat according to their variety, in all forms there exists as a basis of their formation a connective-tissue growth, from which the papillary hypertrophy takes place. The interior of the growth is supplied by one or more vascular loops, from which their vitality is obtained.

SYMPTOMS. The various forms are so different as to require a separate description.

*Verruca vulgaris*, or the ordinary wart, commonly seen on the hands, consists of a small, circumscribed, elevated growth, having a broad base seated securely upon the skin. Their consistency is either soft or firm, the surface smooth or rough, the color that of the surrounding skin, or yellowish, brownish, or even blackish. They may develop upon any region of the body, but are most commonly seen upon the hands and fingers.

*Verruca plana* differs from the *vulgaris* in being flat and broad in form, and but slightly raised above the level of the surrounding skin. Their most common location is either on the back or forehead.

*Verruca filiformis* assumes the shape of a minute, thin, conical, or thread-like formation, about an eighth of an inch in length. The most frequent location is the face, eyelids and neck.

*Verruca digitata* consists of a slightly elevated, broad formation, about the size of a split pea, and marked by a number of digitations coming from its border, giving an appearance, in marked cases, resembling a crab. Their most frequent site is upon the scalp.

*Verruca acuminata*, known also as the pointed wart, the moist wart, the pointed condyloma, cauliflower excrescence, and venereal wart, consists of one or more groups of irregularly shaped elevations, often so closely packed together as to form a



Skeleton with Capsular Ligaments.





more or less solid mass of vegetations (*verrucae vegetantes*). Their color depends somewhat upon the degree of vascularity, varying from a pinkish, bright red to a purple color. They occur for the most part about the genitalia of either sex. Upon the penis, they usually spring from the glans and the inner surface of the prepuce; the inner surface of the labia and from the vagina in the female. They are also seen about the anus, mouth, axillae, umbilicus, and toes. They may be either moist or dry, according to their location; about the genitalia, a yellowish, puriform secretion usually covers their surface, due to friction and maceration, which, owing to the heat of the parts, rapidly decomposes, producing a highly offensive, penetrating, and disgusting odor. Their size varies from that of a pea to that of an almond, an egg, or even the fist. Their development is rapid, attaining considerable size in a few weeks.

PROGNOSIS. Favorable.

#### THE TREATMENT.

A solution of concentrated acetic acid, one part to five of water, applied to the wart, on the top, two or three times a day, removes them imperceptibly—that is, they disappear without knowing when. Lugol's Solution of Iodine, applied with a toothpick or brush on the crown of the wart, cures in a couple of weeks, even "seed-warts." It is said that they are "charmed away" by some. Some are removed by the pronounced emphatic therapeutic suggestion.

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### ICHTHYOSIS.

SYNONYMS. *Ichthyosis vera*; fish-skin disease.

DEFINITION. *Ichthyosis* is a congenital, chronic deformity or hypertrophic disease of the skin, characterized by dryness, harshness, or general scaliness of the skin, or in the outgrowth of larger masses of a corneous consistency.

VARIETIES. *Ichthyosis simplex*; *ichthyosis hystrix*.

CAUSE. Often hereditary, but not in all cases. It is to be regarded as an affection which is born with the individual, although it does not usually manifest itself until after the first or second year of life.

PATHOLOGY. "The diseased—or, better, deformed—skin is found microscopically to be hypertrophied in various degrees, according to the development of the malady; the proliferation of

its elements occurring in the connective tissue, papillae, stratum corneum, and blood-vessels. In well-marked cases of ichthyosis hystrix, the elongated papillae are surrounded by dense cones of the horny layer of the epidermis, more or less concentrically disposed, with sclerosis of the connective tissue and a relatively unchanged rete. In this last particular the dense plaque of ichthyosis differs in texture from the wart." (Hyde.)

**SYMPTOMS.** Ichthyosis displays a wide variation in its symptoms. In one individual it amounts to but a slight inconvenience, while in another it may manifest itself in so pronounced a manner as to be the source of great discomfort and deformity. The two varieties named represent merely accentuated types of the disorder, rare in its fullest development, and, in its slightest, much more common than is generally believed. A simple dryness and harshness of the skin, with only slight furfuraceous exfoliation, is termed xeroderma.

**Ichthyosis Simplex**—Is the more common variety, consisting of a harsh, dry condition of the whole surface, accompanied by the production of variously sized and shaped reticulated scales, either small, thin, and furfuraceous, like bran, or large and thick, resembling fish scales. Upon the extremities the scales usually form diamond-shaped or polygonal plates, separated from one another by furrows or lines, which extend down to the normal skin. In color the scales are either whitish, grayish, or yellowish, and often have a silvery or glistening appearance. Rarely the color is olive green or blackish (ichthyosis nigricans). The amount of scaling depends upon the age of the patient and the duration and severity of the disease.

**Ichthyosis Hystrix.**—With or without the development of the above variety, in this, the hypertrophy of the skin may occur in circumscribed patches or large areas, consisting of irregularly-shaped, verrucous, corneous, corrugated, wrinkled, or rugous masses, usually darker in color than those of the simple variety. They may occur upon the arms, as solid, warty patches, or upon the back, in the form of elongated, linear patches. They may constitute roughened, corrugated, papillary growths, or uneven, horny, blunt or pointed, spinous, warty formations. In the latter case the elevations may reach several lines or more, and stand out from the skin like quills upon the back of a porcupine—hence the name hystrix. The amount and extent of the hypertrophy varies; the older the patient, the more highly developed it will usually be.

**COURSE.** Ichthyosis simplex may involve the entire surface uniformly or appear more marked on the extremities, from the hips to the ankles and the arms and forearms. The affection is always worse in winter than in summer, the increased activity of the sweat glands at this season producing the most beneficial results. The course of the affection is essentially chronic, continuing throughout life, now better, now worse. Slight itching usually occurs.

**DIAGNOSIS.** The characteristics of the affection are so peculiar that an error in diagnosis is hardly possible. It is to be distinguished from the inflammatory affections of the skin which terminate in desquamation by the absence of any history of inflammation.

**PROGNOSIS.** While much can be done to alleviate the affection, the prognosis is unfavorable as regards permanent relief.

#### THE TREATMENT.

A careful study of the cell salts essential to a scientific treatment must be made. No manipulations are effectual without the normal elements exist or are supplied. Congenital deficiencies may be assimilated. Then we may promise relief. The Kali sulph. and Sodium chloride are usually the salts needed. This affection requires much study on the part of the physician, and a long continued and frequently repeated use of the remedy indicated may be required, together with the various manipulations recommended, to be of satisfactory results to the patient or the doctor. The constant exfoliation of "branny scales" are surely annoying, and these may be largely mitigated by the use of salt-water baths, and followed up by the use of olive oil, daily.

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## PARASITIC DISEASES OF THE SKIN.

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### TINEA FAVOSA.

**SYNONYMS.** Favus; porrigo favosa; honeycombed ringworm; crusted ringworm.

**DEFINITION.** A contagious affection, characterized by the development of either discrete or confluent, small, circular, cup-shaped, pale yellow, friable crusts, usually perforated by hairs.

**CAUSE.** The presence and growth of a vegetable parasite known as the *Achorion Schoenleinii* is the cause of tinea favosa. It is commoner in children than in adults, attacking the former,



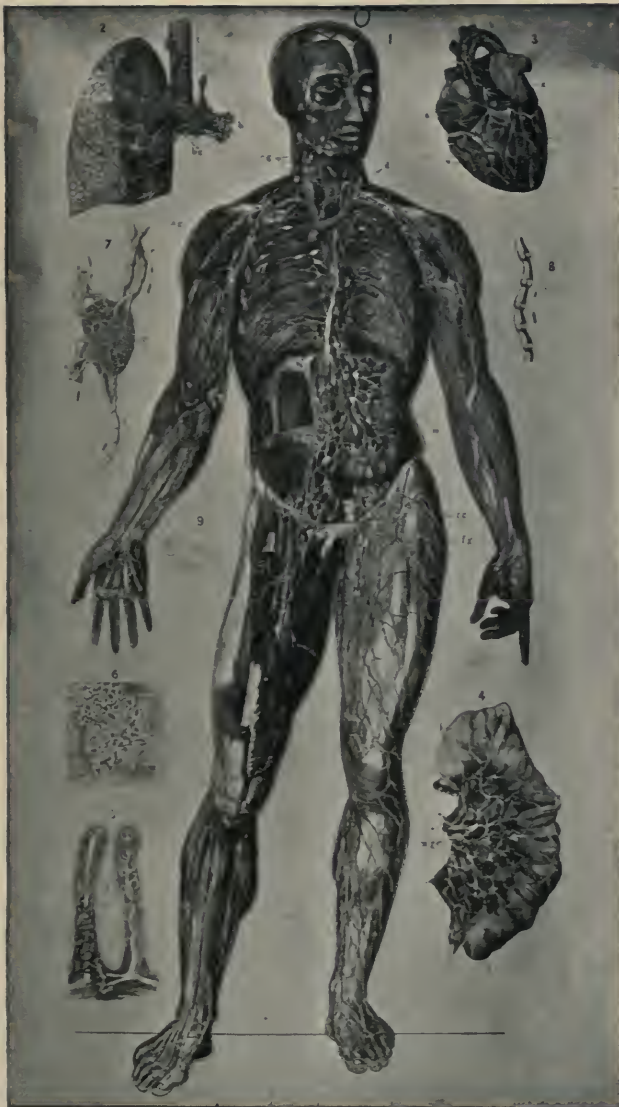
in the first place, either *de novo* or through direct contagion, and is from them communicated to adults. It is a disease confined almost exclusively to the lower classes.

**PATHOLOGY.** *Tinea favosa* may have its seat either in the hair follicles and hair, or upon the surface of the skin or the nails; the former, however, are the structures most commonly attacked.

It is purely a local affection, due solely to the presence and growth of the vegetable parasite discovered by Schoenlein, of Berlin, in 1839, and named after him—*Achorion Schoenleinii*. The crusts are made up almost entirely of fungus, which is seen, upon section, with the naked eye, to be composed of a porous mass and to possess a pale-yellow or whitish color. Under the microscope it is seen to consist of both mycelium and spores in great quantity and in all stages of development.

**SYMPTOMS.** When the affection attacks the hairs and follicles it is termed *tinea favosa pilaris*; when the epidermis, *tinea favosa epidermis*, and when the nails, *tinea favosa unguium*. Rarely all the structures may be attacked at one and the same time; its usual seat, however, is the scalp. The disease begins by the development of one or of several pin-head-sized, pale-yellow crusts, seated about the hair follicles. In about a fortnight these crusts have increased in size and are umbilicated, termed the favus cups, are circumscribed, circular in form, and very slightly elevated above the level of the skin. In their normal condition they are of a pale-yellow or sulphur-yellow color, but after a time, from dust and other matters, they become brownish- or greenish-yellow in color. The number of crusts vary from very few to immense numbers. The usual size is about that of a split pea. In *tinea favosa pilaris et capitis* the affection is often accompanied with pediculi, while swelling of the glands of the neck and small abscesses upon the scalp are not uncommon. The hairs become lusterless, opaque, brittle, and at times split longitudinally, and from atrophy of the follicles and sebaceous glands permanent baldness may result. In *tinea favosa unguium* the nails become thickened, yellow, opaque, and brittle. The disease has a peculiar odor, resembling that of mice, or of musty, stale straw.

**DIAGNOSIS.** In a recent case the characteristic favus cups, the pale-yellow color, the odor, and the history of contagion should render the diagnosis easy. If of long standing, however, and the favi destroyed by scratching, some doubt may exist;



Lymphatic System.



but if a small fragment of a crust be placed upon a glass slide with a drop of liquor potassae, covered with a thin glass, and placed under a microscope with a power of from two hundred and fifty to five hundred diameters, the features of the *Achorion Schoenleinii* will determine the affection to be *tinea favosa*.

PROGNOSIS. *Tinea favosa* of the epidermis readily responds to treatment. *Tinea favosa pilaris* is more obstinate, and if of long duration may result in baldness.

#### THE TREATMENT.

We recognize the fact that a nidus must be formed, conducive to the propagation of the parasite before it takes possession; hence, wage war with the bug, exterminate him, and rectify the conditions in the circulation, and we are rid of the bug and the effects very soon. Local bathing with peroxyde of hydrogen is indicated where there is pus. Application of campho-phoenique, followed by white vaseline, exterminates the parasite, usually. These are cleanly, non-coloring ingredients, and are sufficient.

The manipulations to free the return circulation should be given every other day, and vibratory movements, gently, yet profoundly, made around the circles, ridding the dermis from pent-up capillary blood or obstruction in the veins and lymph tubes.

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#### TINEA CIRCINATA.

SYNONYMS. *Tinea trichophytina corporis*; herpes circinatus; ringworm of the body.

DEFINITION. A contagious, parasitic affection of the skin, due to the trichophyton fungus; characterized by the development of one or more circular or irregularly shaped, variously-sized, inflammatory, slightly vesicular or squamous patches, occurring upon the general surface of the body.

CAUSES. Ringworm of the body is caused by the presence of a vegetable parasite discovered by Bazin, in 1854, termed the trichophyton, the same growth or fungus that produces *tinea tonsurans* and *tinea sycosis*. The affection is highly contagious, and is frequently communicated from one member of a family to another, although it has been determined that a certain unknown condition of the skin is requisite for its development. In children it is most frequently seen among the weakly and the poorly nour-



ished. In adults it is usually associated with a decline in the general health.

**PATHOLOGY.** The fungus is seated between the strata of the epidermis, more particularly in the superior layers of the rete. The presence of this foreign body produces the subsequent phenomena—a superficial dermatitis, erythema, exudation, minute vesiculation, and papulation, and, in the severe grades, tubercles and pustules. The desquamative symptoms are exfoliative—nature's efforts for relief.

**SYMPTOMS.** *Tinea circinata* varies greatly in the degree of its development, from the trivial complaint so often seen in children, to the chronic, extensive, and obstinate disease sometimes seen about the thighs in adults (*tinea circinata cruris*).

The disease usually begins as a small, reddish, scaly, rounded or irregularly-shaped spot of papules, which in a very few days assumes a circular form (ringworm). It continues to increase in size, the papules often changing to vesicles. A characteristic of the eruption is its healing in the center as it spreads on the periphery. Occasionally the circles or rings coalesce, forming serpiginous lesions. The usual size of a fully developed ringworm is about that of a silver quarter of a dollar.

Chronic *tinea circinata* does not present the characteristic annular form, but "are usually in the form of single or multiple, disseminated, small reddish, slightly scaly, ill-defined spots, on a level with or but slightly raised above the surrounding skin. Not infrequently they are the size of a small or large finger nail, and are irregularly shaped, and, as a rule, without line of demarcation." The "*eczema marginatum*" of Hebra is to be looked upon as a severe form of *tinea circinata*.

*Tinea circinata cruris*, or ringworm of the thighs, a variety of the "*eczema marginatum* of Hebra," is usually complicated with true eczema, and is a very obstinate, chronic form of the affection; it is accompanied by severe itching.

*Tinea trichophytina unguium* is a rare variety. The nails become opaque, whitish, thickened, and soft and brittle, especially along their free border. The microscope is essential for a diagnosis. Its course is chronic, and it is difficult to cure.

**COURSE.** As commonly seen, ringworm is very amenable to treatment. Occasionally, however, it exhibits great obstinacy, showing itself repeatedly in the same region, in the form of relapses, or manifesting itself from time to time in new localities.

**DIAGNOSIS.** *Tinea circinata* may be mistaken for squamous

or other varieties of eczema, but the circular and often annular form, the well-defined margin, the slight desquamation, and the course and history of ringworm should prevent error. Chronic ringworm is more difficult, however.

TREATMENT. Same as for *Tinea Favosa*.

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### TINEA TONSURANS.

SYNONYMS. *Tinea trichophytina capitis*; herpes tonsurans; ringworm of the scalp.

DEFINITION. A contagious, parasitic affection of the scalp, due to the trichophyton fungus; characterized by the development of circumscribed, vesicular or squamous, more or less bald patches, showing the hair to be diseased and usually broken off close to the scalp.

CAUSE. The result of the presence and growth of the same fungus giving rise to *tinea circinata*—trichophyton. It is an affection of childhood, seldom being seen after puberty. It is highly contagious, and may be communicated from a case of ringworm of the body.

PATHOLOGY. The parasite originally named "trichophyton tonsurans" invades the hair, hair follicles, and epidermis of the scalp, the hair, however, suffering the most severely, becoming in a short time filled with the growth to such an extent, usually, as to cause its disintegration and destruction. The hair follicle, also, becomes distended and prominently raised. The hair shaft is fractured just above the level of the scalp, and usually presents a jagged, bristly, stubble-like extremity. The epidermis of the scalp may either present the changes of minute vesicles and desquamation, or, in severe cases, oedema and inflammatory symptoms, with fluid exudation (*tinea kerion*).

SYMPTOMS. Ringworm of the scalp usually begins in the form of small, circumscribed patches, which soon become the seat of small vesicles or pustules, which terminate in desquamation, or of furfuraceous scales. The patches spread rapidly, soon reaching the size of a silver quarter to that of a silver dollar. They are circular in form, circumscribed, of a reddish, grayish, or greenish-yellow color, covered with fine or coarse scales, with the hairs broken off close to the scalp. The epidermis of the scalp is more or less raised, and the follicles are prominent, giving the characteristic appearance of the disease—the goose-skin or

plucked-fowl appearance. As a result of the loss of hair, baldness, more or less complete, but temporary, exists. Itching, slight or severe, is a constant symptom.

Ringworm of the face or body (*tinea circinata*) may complicate *tinea tonsurans*. Chronic ringworm of the scalp is the same condition in a more chronic form, having existed for six months to a year or two.

*Tinea kerion* is a severe variety of *tinea tonsurans*, "characterized by oedema, inflammation, and the exudation of a viscid, glutinous, yellowish secretion from the opening of the hair follicles. When fully developed the patches are yellowish, reddish, or purplish in color, and are more or less raised, oedematous, and boggy. They are uneven and honeycomb-like (hence the name *kerion*), and studded with yellowish, suppurative points, or, later, with small cavities or foramina, the openings of the distended hair follicles, deprived of their hairs, which discharge a mucoid, honey-like fluid." The patches are tender, painful, and at times the seat of itching. The course of the affection is chronic.

**DIAGNOSIS.** The diagnosis is usually unattended with difficulty, if the characteristic circumscribed vesicular or scaly patches with stubby hair be present.

Squamous eczema somewhat resembles *tinea tonsurans*, but the hairs are normal in eczema and firmly imbedded in the follicles, while they are almost always stumpy in ringworm, and in those cases in which they are not broken off, if pulled, they easily fall out. Ringworm is contagious, eczema is not.

*Alopecia areata* presents a white, ivory-like bald patch, devoid of scales, eruption, or hair. Ringworm has the vesicular or scaly patch, with broken-off hairs.

In any case of doubt the microscope will readily determine the diagnosis, if "one or two of the short, stumpy hairs should be placed upon a slide, with a drop of liquor potassae and permitted to stand a few minutes, when, under a power of two hundred and fifty diameters the fungus, as well as the lesions of the hair, will be visible."

**PROGNOSIS.** Favorable, although obstinate in chronic cases. Relapses are of frequent occurrence.

**TREATMENT.** Same as for *Tinea Favosa*.



The Muscular System, Action of.





## TINEA SYCOSIS.

**SYNONYMS.** *Tinea trichophytina barbae*; *sycosis parasitica*; barbers' itch; ringworm of the beard.

**DEFINITION.** A contagious, parasitic affection of the hair, hair-follicles, and subcutaneous tissues of the hairy portion of the face and neck in the adult male, due to the trichophyton fungus; characterized by the development of tubercles and pustules.

**CAUSES.** *Tinea sycosis* is the result of the presence and growth of the same vegetable parasite that causes *tinea circinata* and *tinea tonsurans*—trichophyton—which invades the hair follicle and hair. It is highly contagious, and is said to be acquired, in most cases, at the hands of the barber (?). It is not a very common affection. Like the other vegetable growths, it seems to require some peculiar, unknown condition of the skin for its development. It may develop from a case of *tinea circinata* or develop simultaneously with it.

**PATHOLOGY.** The parasite finds its way into the hair follicles and attacks the root and shaft of the hair, causing inflammation, followed by more or less follicular suppuration and general infiltration of the surrounding tissues. The irritation caused by the presence of the fungus results in inflammation of the subcutaneous connective tissue and the well-known tubercular formations peculiar to the affection. They are firm, comparatively painless, and manifest but little disposition to undergo change, remaining during the presence of the fungus and finally gradually disappearing without leaving a scar. Under the microscope the parasite is plainly discernible.

**SYMPTOMS.** Barbers' itch begins as an attack of *tinea circinata*—as one or more reddish, scaly patches. Soon the redness and desquamation become more decided, attended with swelling and induration. The hairs will also be dry, brittle, inclined to break, and many of them are already loose. The process rapidly increases, the skin becomes distinctly nodular and lumpy, and points of pustulation develop about the openings of the hair follicles. The subcutaneous connective tissue is also involved, giving rise to thick, firm masses of induration. The surface has a dark red or purplish color, and is studded with variously-sized tubercles and pustules. In some instances the number of tubercles are in excess, while in others the pustules are more numerous, numbers of them discharging, and are succeeded by thick crusts, which are often so abundant as to stimulate pus-

tular eczema. The hairs are always diseased, and break off, either in the follicles or just above the level of the surface. Those not breaking drop out, leaving the region partly or wholly devoid of hair. The most frequent locations attacked are the chin, neck and submaxillary region. One or, what is more common, both sides of the face are involved.

Itching, burning, pain, and swelling always accompany the affection, varying in intensity from moderate to very severe.

The course of the affection is usually chronic. Relapses are frequent, unless most thoroughly eradicated.

DIAGNOSIS. Sycosis non-parasitica occasions difficulty of diagnosis at times. The points of difference, however, are usually so marked that error should not occur. Sycosis non-parasitica is a chronic, inflammatory, non-contagious affection of the hair follicles, characterized by the development of papules or pustules, which are perforated with hairs, the hairs themselves being unaffected. The upper lip, cheeks, and chin are the parts mostly involved. If of long duration, some inflammatory thickening results. In tinea sycosis or sycosis parasitica the skin and subcutaneous connective tissue are extensively involved, as manifested by the induration and formation of the characteristic tubercles. The upper lip is rarely invaded, the hairs are diseased, broken off, or loose, and under the microscope reveal the parasite.

Pustular eczema resembles tinea sycosis, with extensive pustulation and crusting. But in the former the hairs are not involved, nor are the characteristic tubercles present.

TREATMENT. Same as for Tinea Favosa.

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### TINEA VERSICOLOR.

SYNONYMS. Pityriasis versicolor; liver-spots.

DEFINITION. A contagious, parasitic affection of the skin, due to the microsporon furfur; characterized by the occurrence of variously-sized, irregularly-shaped, dry, slightly furfuraceous, yellowish spots upon the chest or other portions of the body.

CAUSE. Pityriasis versicolor is the result of the presence upon the surface of the skin of a vegetable fungus termed microsporon furfur. It is a mildly contagious affection seen after puberty. It is said to occur most frequently in those suffering from wasting diseases, particularly phthisis pulmonalis. It is not connected with any affection of the liver, as supposed by the laity.

PATHOLOGY. The fungus permeates the horny layer of the



Muscular System (Front View).





epidermis, never the hair or nail, and gives rise to the irregular-shaped and sized maculae, of a yellowish or brownish color. As a rule, it gives rise to neither hyperaemia nor inflammatory symptoms.

**SYMPTOMS.** Tinea versicolor occurs in the form of irregular, roundish, circumscribed, or reticulated maculae. The spots vary in size from that of a small silver coin to that of the hand. By coalescing they often cover a greater portion of the chest, their most usual site. Upon close inspection the surface of the maculae is seen to be covered with furfuraceous scales, and if the scales be not visible, scraping with the finger nail will demonstrate their presence. In color the spots vary from a delicate buff or fawn shade to a yellowish, deep brown, and, rarely, even blackish hue. At times mild itching accompanies the eruption.

**DIAGNOSIS.** The characteristics of the eruption are so distinct that errors in diagnosis can hardly occur. If any doubt exist, a few of the scales upon a glass slide, with a drop of liquor potassae, and covered with a thin glass cover and placed under a microscope with a power of from two hundred and fifty to five hundred diameters will readily determine the presence of the fungus.

**PROGNOSIS.** Favorable.

#### THE TREATMENT.

This affection and Tinea Sycosis require the same or similar treatment, and that similar to that recommended for Tinea Favosa; we refer the reader thereto. The treatment may be varied by using a weak solution of salt water to cleanse the parts first. The vibratory manipulations should not be neglected, and where the hair follicles are affected it suggests more forcibly the use of the salt baths, and the profound manipulations, after the larger of the veins have been freed in the neck and jaws. Remember that venous blood is largely responsible for most of the affections of mankind.

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#### SCABIES.

**SYNONYM.** The itch.

**DEFINITION.** A contagious, animal parasitic disease of the skin, due to the acarus or sarcoptes scabiei; characterized by the formation of cuniculi (burrows), papules, vesicles, and pustules; followed by excoriations, crusts, and general cutaneous inflammation, and accompanied with itching.

**CAUSE.** Contágion. The only cause is the presence of the animal parasite, the acarus or sarcoptes scabiei. The affection occurs at all ages and in every walk in life.

**PATHOLOGY.** Scabies is an inflammation of the skin with the development of papules, vesicles, pustules, excoriations, and subsequent crusting, the result of the ravages of the animal parasite, together with the irritation produced by the scratching of the patient.

The parasite acarus, or sarcoptes scabiei, is a minute creature, barely visible to the naked eye as a yellowish-white, rounded body. The female is the most commonly met with, the males being said to take no part in causing the affection, and so are rarely seen. They are said to die in about a week after copulation with the female. The female finds her way by boring through the horny layer into the mucous layer of the epidermis, and, being impregnated, begins at once laying the eggs and at the same time making her burrow. A variable number of eggs are deposited, usually about a dozen, after which she perishes in the skin. The ova hatch out in eight or ten days.

**SYMPTOMS.** Scabies being an artificial dermatitis or eczema, according to the amount of irritation produced by the presence of the parasite and the traumatism the result of the severe scratching of the patient. Immediately upon the arrival of the mite upon the skin it begins its work of burrowing, and very soon a burrow or cuniculus is formed, in which the eggs are deposited, and which also becomes the habitat of the female during the remainder of her life. The ova are hatched in about one week after their deposit, and they at once begin to care for themselves and to burrow, resulting in the formation of as many additional cuniculi as there are active female mites. It is the presence of these burrowing parasites that constitutes the irritation resulting in the inflammation of the skin, characterized by the formation of minute papules, vesicles, and pustules, with more or less inflammatory induration. Add to these the excoriations, scratch marks, fissures, torn vesicles, and pustules with yellow and bloody crusts, caused by the scratching, and a picture of the fully developed disease is seen.

The burrow, or cuniculus, as it is termed, is formed by the mite entering and making its way beneath the horny layer of the epidermis, which is raised, very much as a mole undermines the ground. It occurs as a slight linear elevation of the epidermis, varying from a half a line to four or five lines in length, and



The Nervous System, General Distribution of.





having an irregular or tortuous course. Its color is whitish or yellowish, speckled here and there with dark dots. At either end the cuniculus terminates in darkish points, the more prominent of which represent the parasite.

The papules are the first inflammatory lesion, are numerous, and of small size, and may be the extent of the disease. The vesicles are the next stage, varying in size and number, having an inflamed base, sometimes presenting cunicula upon their summits. The pustules represent the completion of the inflammatory action, their size and number varying with the severity of the irritation.

The intense itching, which is worse at night, results in excoriations, torn papules, vesicles, and pustules, followed by crustings, which after a time disguise the characteristic lesions. The regions of the body attacked are the hands, especially the sides of the fingers and the folds where they join the hands. After a time the wrists, penis, and mammae, and around about and upon the nipples, are invaded. Persons predisposed to eczema have this affection developed, in addition to the simple dermatitis, by the ravages of the itch mite.

**DIAGNOSIS.** A case of scabies seen before irritated by scratching, presents no difficulty in diagnosis. The presence of the burrows always suffices for the diagnosis, but these are not always discoverable. The location of the eruption always points strongly to scabies. A history of contagion is of value. All doubt can be set at rest by the aid of the microscope.

**PROGNOSIS.** Always favorable, relapses only occurring when the treatment has been imperfectly carried out, or where the individual has re-contracted the disease.

#### THE TREATMENT.

Yes, got it at last. Now how to cure it. Well, prepare yourself for a fight. Extermination is the only hope of escape for you from the bug. You are urgently advised to use lavishly, yet lawfully, of that large commodity promised as a cleanser of, or a fire-kindler for, a part of the human race in the final wind-up. It is said to be effectual as a sin-destroyer, then, among the larger bugs. You try it on these smaller ones. The best, and therefore the effectual, way to use it is as follows: First prepare the subject (the person) by a thorough bathing with soap and water. Dry the skin with a dry towel, then have the whole body anointed with flour of sulphur mixed in sweet lard until it is quite thick (pasty), then put on a clean gown, put on

clean sheets, clean everything. Next morning bathe with soap and water; put on clean clothes. Next night bathe again; put on the sulphur salve. Go through this same procedure three times and you are cured. Do not put on the clothes first taken off until fumigated, heated and thoroughly cleansed. The subsequent baths of salt water will repair abraded integument where the animalcule has made inroads on the skin. Osteopathic manipulations sustain no relationship to this sort of bug. He must be exterminated.

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### PEDICULOSIS.

**SYMPTOMS.** Phthiriasis; morbus pedicularis; lousiness.

**DEFINITION.** A contagious, animal parasitic disease of the head, body, or pubes, due to the presence of pediculi and characterized by the wounds inflicted by the parasite, together with excoriations and scratch marks.

**VARIETIES.** Pediculosis capitis; pediculosis corporis; pediculosis pubis.

**CAUSE.** The cause is the presence of the parasite, the result of contagion, direct or indirect. The view of "a spontaneous generation" of pediculi is not accepted by the great majority of observers.

**PATHOLOGY.** The lesion produced by the presence of the pediculi is a minute hemorrhage, caused by the parasite inserting its sucking apparatus, or, as it is termed, its haustellum, into a follicle, and obtaining blood by a process of sucking, and not by biting, as is generally supposed. The presence of the parasite in any great numbers brings about a peculiar irritable state of the skin, which gives rise to an irresistible desire to scratch, as a consequence of which the surface is markedly excoriated and lacerated.

**SYMPTOMS.** The symptoms which arise from the presence of the parasite in different localities are somewhat different, and call for separate considerations.

**Pediculosis Capitis.**—This variety is caused by the presence of the pediculosis capitis, or head louse. The ova, or nits, are readily recognized at a distance. Their favorite seat is the occipital region, either upon the surface of the scalp or upon the hair. Their presence gives rise to considerable irritation, itching, and consequent scratching, resulting in the wounding of the scalp,



Distribution of Nerves.





with oozing of a serous or purulent fluid mixed with blood, which soon mats the hair and forms into crusts. In those predisposed to eczema, the presence of the parasite will give rise to that condition. The general health is usually unaffected by the presence of the pediculi.

**Pediculosis Corporis.**—This variety of the pediculosis is caused by the presence of the pediculosis corporis, or body louse, or more properly termed the pediculus vestimenti, or clothes louse. Its color, when devoid of blood, is dirty-white or grayish, with a dark line around the margin of its abdomen. Its habitat is the clothing covering the general surface, remaining upon the skin only long enough to obtain sustenance. The ova are usually deposited in the seams of the clothing, the lice being hatched within the week. Occasionally a few of the pediculi may be observed crawling about the surface, or in the act of drawing blood. As they move over the surface they give rise to an intensely disagreeable itching sensation, to relieve which the patient scratches, which in turn gives rise to the characteristic lesions of the affection.

The lesions are numerous. The scratch marks are scattered here and there, long and streaked, or in other places short and jagged, the excoriations and blood crusts varying in size from a pin-head to a split pea or even larger, with irregularly-shaped pustules. In addition to the lesions resulting from the scratching, are seen the primary lesions, consisting of minute reddish puncta with slight areolae, the points at which the parasite has drawn blood. In cases of long standing, a brownish pigmentation of the whole skin may result from the long-continued irritation and scratching. The favorite site of the lesions are the back, especially about the scapular region, the chest, abdomen, hips, and thighs.

Pediculosis is seen most commonly among the poorer classes and especially the middle-aged and elderly.

**Pediculosis Pubis.**—This variety of pediculosis is caused by the presence of the pediculus pubis, or crab louse. Although having its seat of predilection about the pubes, it may also infest the axillae, sternal region in the male, beard, eyebrows, and even eyelashes. They may be found crawling about the hairs, but more commonly hugging the surface closely. They infest adults chiefly, and occasion symptoms similar to those described in connection with other species. They are usually contracted through sexual intercourse, although occasionally they are pres-

ent in cases in which they have not been communicated in this way, and where no explanation as to the mode of contagion can be suggested. The itching varies from slight to severe.

DIAGNOSIS. When violent itching exists in any case, without marked eruption, the possibility of the presence of pediculi should always be entertained, and if carefully sought after are found.

PROGNOSIS. Favorable, if the treatment be thoroughly carried out.

#### THE TREATMENT.

The most effectual treatment for the aforesaid animal is to supply moderately strong tincture of cocculus indicus (fish berries) occasionally. There is no trouble about using this, but do not saturate too much of the scalp at one sitting, and do not leave it on the hair, to be absorbed into the scalp. Simply moistening the hair and then bathing the scalp shortly afterward is sufficient. There is no danger, if not used too strong. Simply dampen the hair. Campho Phoenique is efficacious, locally applied.



The Sympathetic Nerve





## EYE DISEASES.

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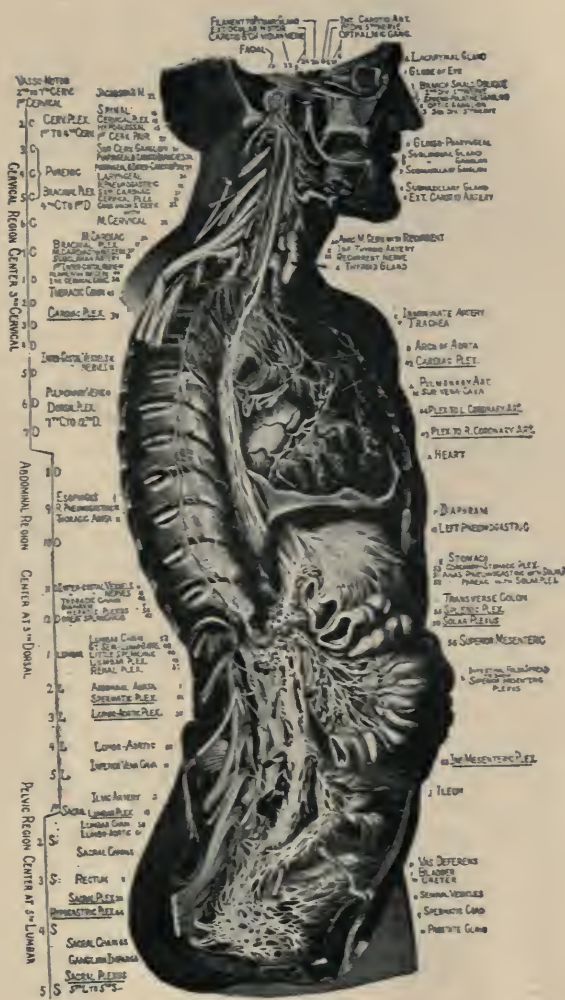
Inasmuch as all inflammatory action is the result of venous obstruction to the circulation, caused by pressure upon the veins or lymphatics, there is but one thing to do in every pathological condition, and that is, to Take Off the Pressure; the process by which that is done becomes a matter of the first importance. The results of local medication are to be seen everywhere, for many are the victims of blindness, malformations, cicatricial contractures, distortions and leucoma. These and many results too numerous to detail here follow the use of lotion treatment for sore eyes, applied by ophthalmologists and eye specialists, whether for dilating the pupil or for reducing inflammation, in acute and chronic affections. There have been cast off on every community one or more victims, whose sight might have served him or her for a lifetime had no such remedy been used. How many precipitations of the "sugar of lead" are to be seen even now all over the country, which are due to a lotion of lead and opium applied to cure acute sore eyes, due to corneal ulceration, unnoticed by the person applying it, or if noticed, who did not know the results of such a remedy applied to such a condition. Astringents, disinfectants, soothers, dilators, all sorts of medication, have been used in every condition that the eye could be afflicted; have been dropped into the eyes, and some "famous eye salve" has been rubbed on the lids and put in the "corners of the eyes" to cure sore eyes, without regard to condition or consequences. Traveling charlatans have reaped rich harvests off of many a poor victim because of eye troubles. Chronic trachoma (common granulated lids) has been the worst abused of any pathological condition, and with less satisfactory results perhaps of any eye affection, it being the result of badly treated, acute inflammatory conditions. Here is where the stimulation remedies have been dumped in the most frequently. One noted oculist stated to a class of over a hundred pupils, that he "had treated granulated lids for over thirty years, and if he had cured a single case, he had no recollection of it." Medicines, such as nitrate of silver, have been dropped into the eyes until they were literally colored a

dingy brown, and had produced atrophy of the tarsal fold, and yet had not overcome the granulations. Others have had strong astringents put into the eyes until they became so painful that the poor victim would refuse to use it longer on account of the pain produced. We might cite any number of instances of medication, and results of treatment, that seem utterly inhuman, repulsive and ridiculous to the common sensibilities of intelligent people. Be it ever to the praise of Osteopathy, that it offers immunity from such abuse. It surely offers a boon to suffering humanity in this regard, as well as many others that seem, to the prejudiced, incredible. Our means of taking off the pressure comes in good play here, and marvelous results follow, seemingly superhuman, but reasonable.

#### TREATMENT FOR ALL EYE AFFECTIONS.

In all cases of inflammation of the eye or any organ in the body, the indications are visible to the Osteopath. There is an excess of venous blood there. This blood is prevented from returning through the veins by contracture of some one or more muscles, and when the obstruction is removed, the blood flows from that part naturally, hence the excess of accumulation ceases, the inflammation subsides, frequently at once.

To accomplish this in cases of inflammation of any kind in the eye, begin by raising the clavicle. This removes the obstruction from the larger veins; now begin with the neck muscles, remove all the rigidity, stiffness, the contracture from all of them, as has been shown in illustrations for neck treatment; stretch the neck, with the spinal column, rotating the neck one-fourth round while extended, then remove the pressure at the angles of the jaws; treat the ears with the vibratory movements, then the temples, forehead, inner canthus and papillae of eyes with thumb and finger, and manipulate the face, especially around the eyes, inside the bony margins, and move all of the obstructed blood from the nose, cheeks, around the eyes; divulse the nostrils, and finally treat the eyelids, as shown elsewhere, by raising the lid with the thumb and finger of one hand, and introduce a finger of the other hand under the upper lid, at the outer canthus, clear into the eye, as far back as the retrotarsal fold, and then bring the thumb down on the integument of the lid, in juxtaposition to the fingers—use considerable pressure, as well as stretching the lid; move the thumb and finger little by little along to the inner canthus, pressing at each step, until the inner canthus is reached; then, turning the finger, palmar surface toward the side of the



Sympathetic Nerve Centers, to Obtain, from Peripheral Influences. The Salient Points of Impression.





nose, use considerable pressure at that point, and when done, remove the finger at once, suddenly; and then bathe the eyes with a solution of salt and water—a teaspoonful to the pint of water. The operator should be sure to well cleanse his own hands first, then dip the fingers into water before introducing them into the eyes. Care must always be had regarding the proper pressure; too hard produces ecchymosis, but moderate pressure squeezes the fluids onward into their normal channels, and empties the congested blood therein.

The treatment for internal eye troubles is the same—empty the outgoing channels and let in arterial blood. Pterygium, trachoma, leucoma, blepharitis marginalis, cataract, ulcerated cornea, iritis—in fact, all the inflammatory processes, acute or chronic—are treated on this same principle, removing the obstruction in the blood channels. Let the fluids pass on in their natural way, then inflammations cease.

In addition to this treatment, Cataract should have the following treatment, to-wit: Place thumb against the eye-ball, press gently, and thump against the nail with the forefinger—what we call a snapping against the nail of thumb that is pressed against the ball of the eye (on the outside of the lid, of course), three or four times. Treat this way two or three times a week for Cataract. Other treatments should be repeated as often as every four or five days.

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## CATARACT.

A degenerative condition of the crystalline lens, which renders it opaque, incapable of transmitting the rays of light. It is called traumatic, when caused by a wound; senile, when resulting from age. Osteopathic treatment, in the early stages, will be useful, in some cases making a perceptible improvement in a short time, if at all. In addition to a thorough neck treatment, extend the neck and treat the muscular system, so as to remove contracture, and re-establish normal circulation, so that arterial blood can reach the media of the eye and build up the waste tissue and open the channels for the debris (degenerated tissue). This promises a change therein. There have been some cases cured in this way. After this treatment, at the same sitting, the operator must treat the eye itself, manipulating all around it; and then having the patient close the lid, let the operator put the palm of his thumb on the outside of the lid, over the eye-ball, so as to

gently press thereon, and while doing so use the forefinger of the other hand to snap against the thumb nail strongly enough to jar the whole eye-ball, together with the lens. Three or four such general and special thumps against the thumb should be done at intervals of a couple of days. This tends to promote absorption—a rational means of curing the opacity. Several weeks may be necessary to suffice, but as cloudiness disappears, the sittings should be further apart, and the treatment more lightly applied to the eye.



Showing Vaso-motor Filaments  
and Solar Plexus, etc.





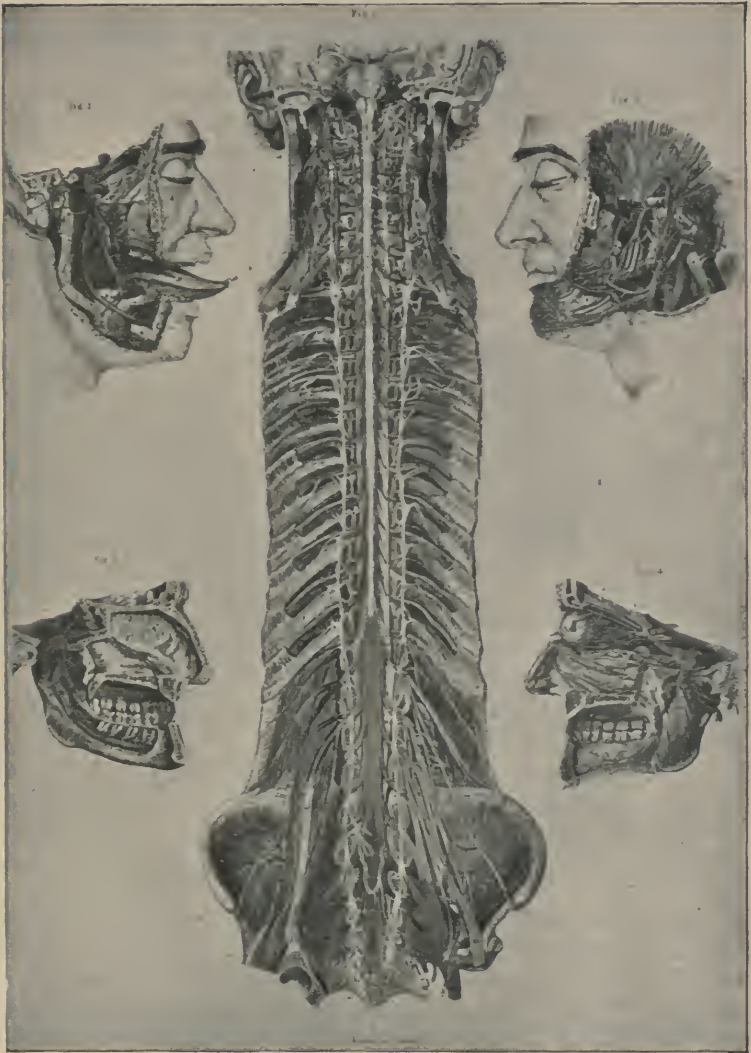
## OSTEOPATHY IN OBSTETRIC PRACTICE.

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While it is not the province of this book to enter into the domain of obstetric practice, it would not be doing justice to the reader to leave out of account the special advantages derivable from the application of the principles of Osteopathy, as applicable to females during the stage of confinement. We reach through the terminal filaments of the sympathetic nervous system in and around the organ known as the clitoris. By pressure on either side of the clitoris, with the fingers, so placed as to press on, and at the same time upward, moderately, hard, firmly, a reflex result follows, in which contracture of the circular fibers of the fundus of the uterus ensues, the os dilates, normal propulsive pains ensue, and labor proceeds naturally; all unnecessary flying pains cease, and the process becomes one of satisfaction to the parturient, rather than a dread. This pressure completely controls the action as well as the process of labor, and shortens labor, in many instances, several hours; saves maternal exhaustion; directs all the forces into the proper channels, prevents lacerations, inertia, prolapsus, evil after-effects, and does away with the mental forebodings of probable consequences according to other methods. This pressure removed at any time induces extreme pain, and tends to retard progress, therefore it should be continued until labor is fairly well advanced, when, if changed to either side of the last three or four lumbar vertebral region, the pressure tends to continue propulsion, terminating in normal rapid delivery. Support should be given to the perineum while the last strait is being passed by the fetal head and shoulders. The pressure as described relaxes the cervix in from one to two hours completely. This should be done during the first stages of labor, while the pressure on the lumbar region should be done during the last stages. The demonstration of the controlling influence of the nervous system is beautifully and wonderfully illustrated here, in this, the most dreaded and most sublimely

interesting period of anxiety in all of the phases of the life of the mother! If Osteopathy had made no other advances beneficiary to the human race, this ought to suffice to give it a place in the highest rank—on the topmost pinnacle of excellence. The means of soothing the pains of our better part of creation, our loved ones, in the very act of bringing forth a human being, fraught with such marvelous possibilities, should claim our most grateful appreciation. This alone immortalizes the science of Osteopathy. It is par excellent!

Practical experience along these lines continues to unfold the wonderfulness of results obtained through the proper application of stimuli to the sympathetic nerves that control every tissue in the body normally, when properly directed.



Nerve Plexuses—Deeper Structure and Plexuses.





## OBESITY—CORPULENCE.

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This is a matter that concerns many persons now-a-days, and some would-be-wise ones are claiming to "antidote fat" by manipulations of the "form divine," and deceive the poor victim; (fat, I should say, for he grows "fatter and fatter," as the manipulations applied to "thin him down" go on.) This subject deserves a special consideration.

To understand the philosophy of the accumulation of adipose, we must have recourse to the digestive system. Voit and Pettinkofer in their investigations demonstrated that certain kinds of foods, such as albuminoids and carbo-hydrates, or food containing these, tended to a precipitation or an increase of fat, and that beer-drinkers constitute the larger majority of such persons, although he recognizes heredity as in some way connected with this tendency. This we can not agree to, for very frequently persons in the same family become fat, while others are lean. This condition is doubtless due to the deficiency of pancreatic secretion, for it is now regarded by physiologists that this organ is the generator of "fat dissolving material," and that by normal action of this gland, with the regularity as to time and quantity of such food as can be digested properly, the normal tissues are maintained. Obesity, therefore, may nearly, if not always, be attributable to either more fatty matter than can be dissolved (converted into soap), by the alkalinity of the pancreatic secretion, or that the drain is too often made on the organ by too frequent resort to it for secretion to digest "between-meals luncheons." When it is known that every organ in our body is kept up, maintained, regulated, by a proper supply of blood, and that this blood must contain the proper elements in due proportion, and that this proportion is largely due to the food eaten, the time it is taken into the stomach, the ability of the organs concerned to manufacture food into normal, natural material, and then consider that the organs of digestion are the most abused organs in the body, some idea may be had why obesity on the one hand, and emaciation on the other, are so

prevalent. A normal digestive apparatus is seldom found. This organ (the stomach) needs, above all things, rest, then its functions will be properly performed. Digestion will be perfect, dyspepsia will cease, obesity cease, and health will be established. In all cases where obesity exists, give the digestive organs rest, and obesity will begin to decline. Stop between-meals nibbling, beer and albuminoids and carbo-hydrates, and let the organs that manufacture digestive secretions rest, then abnormalities will be corrected in a natural manner. The crowding of the baby's stomach is the source of a large per cent. of its ills. The mother believes that it should be full all the time to make it grow. If it from any reason has gone four to six hours without its meal—"Oh, the dear baby is starved to death"; and if it gets sick, nothing is more annoying to a doctor than a constant appeal to him to know what "to feed the baby." "Doctor, my baby hasn't had a mouthful of anything to eat for five hours. Do tell me what to feed it. It won't nurse at all." You have heard such appeals times without number. Whether the little stomach is in a condition to digest or not, the mother thinks her dear baby will starve if not fed regularly, hungry or otherwise.

To cure corpulency, Take Off the Pressure. This is our motto. This is Osteopathy. This is the universal remedy for all pathological conditions. If you desire to empty a lake, open the outlet and take off or stop the supply of water above.

The one thing in life, the most desirable to all people, is health, yet a word of advice that, if taken, will surely bring about that much-desired consummation, will continue to be rejected, and death, with its victims, will continue to slay its millions annually, carry the loved ones away; when, if due attention were had to the rest that brings peace, long life and happiness, we might not be called to mourn the loss of them so soon. The human family eats at least one-third more than it ought. This is the prime cause of most of our ills, premature death, the majority of our failures, the feeble-mindedness, sin, intemperance, violation of law, and all its evil consequences.

Crowding of the tired, worn-out stomach brings its sure reward—premature death, by robbing the very organs that prepare the life forces of their time to recuperate, so as to do perfect work. There are constitutions that bear this tax for long years, but the same physical body that bears such abuse finally succumbs thereto, whereas, if properly cared for, length of days



Arterial System.





might have been added to bless mankind. Rest the digestive organs, then, if you would be healthy.

The digestive organs are crowded with food, the whole system is taxed to eliminate the debris, and the mind is clouded, headache and other disturbances follow in the wake of this almost universal sin of the race. If it is not time to call a halt, I do not know why. Habit, like an armed foe, has made slaves of us all, and the wrecks that lie strewn along the highways point with warning to us to stop and consider consequences.

To cure obesity, and a large per cent. of sicknesses, rest the digestive organs—do without at least one meal a day, and breakfast is the preferable one to leave off. Eat a good, wholesome dinner and a light supper, and your stomach will have time to recuperate its overtaxed energies and digest food that is put into it, provided it be properly mixed with the salivary secretions in the mouth. Our whole alimentary apparatus is a marvelously complicated and delicate chemical laboratory, and if each department performs its proper function, harmony exists, but if either division is interfered with, its processes disturbed, harmony ceases, disease is the invariable result sooner or later.

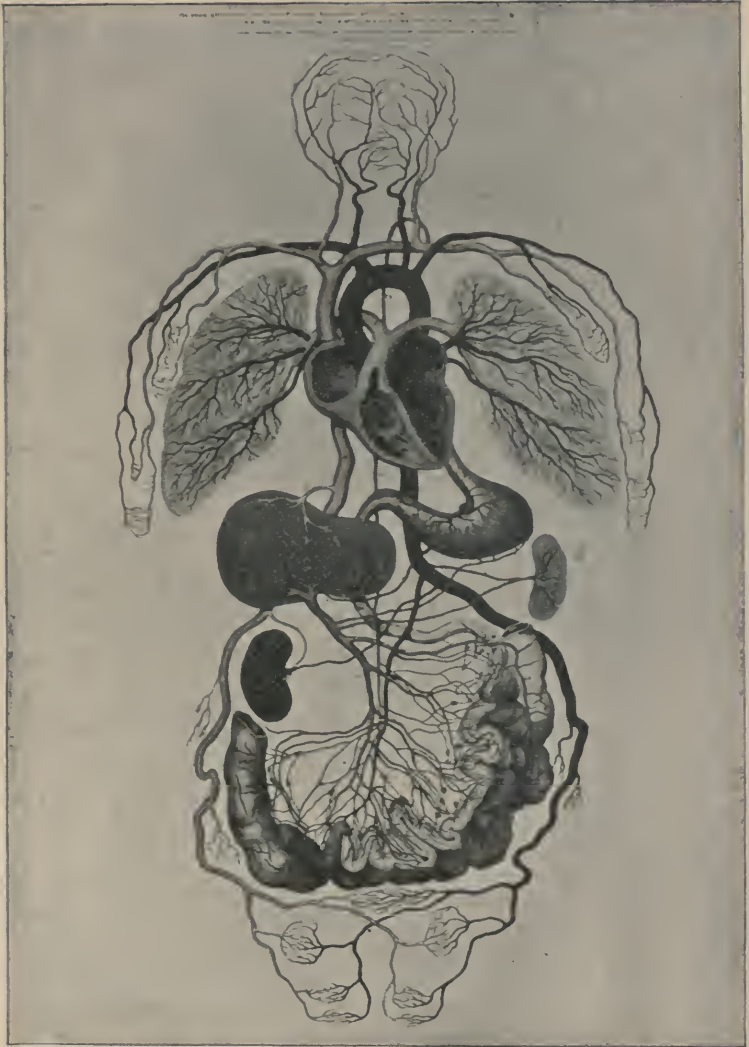
When we stop eating until a natural demand for food to supply the waste is manifest, preceded by a due amount of rest of the digestive organs, digestion will proceed without pain or distress, and the proper elements will be drawn from the food to make all of the ingredients that make up normal chyme, and go into the formation of blood, assisting in producing the succeeding chemical changes necessary to be assimilated, make up and constitute the secretions in the various parts of the body. It takes all of the ingredients, from the mouth to the end of the receptaculum chyli, to make up material for the new blood—to renew the life forces.

To treat obesity then, successfully, eat the proper food, at the proper time, giving the system rest; leave off carbo-hydrates and albuminoids, or beer, ale, or malt. We have seen obesity reduced thirty-five pounds, to a normal weight, by simply doing without the breakfast—one meal a day; heart disease cured, dyspepsia eradicated, headaches entirely removed, the bowels become perfectly regular, the torpid liver become natural, simply by giving the stomach rest. Do without your breakfast if you would be well.

The salivary glands should be duly exercised by the move-

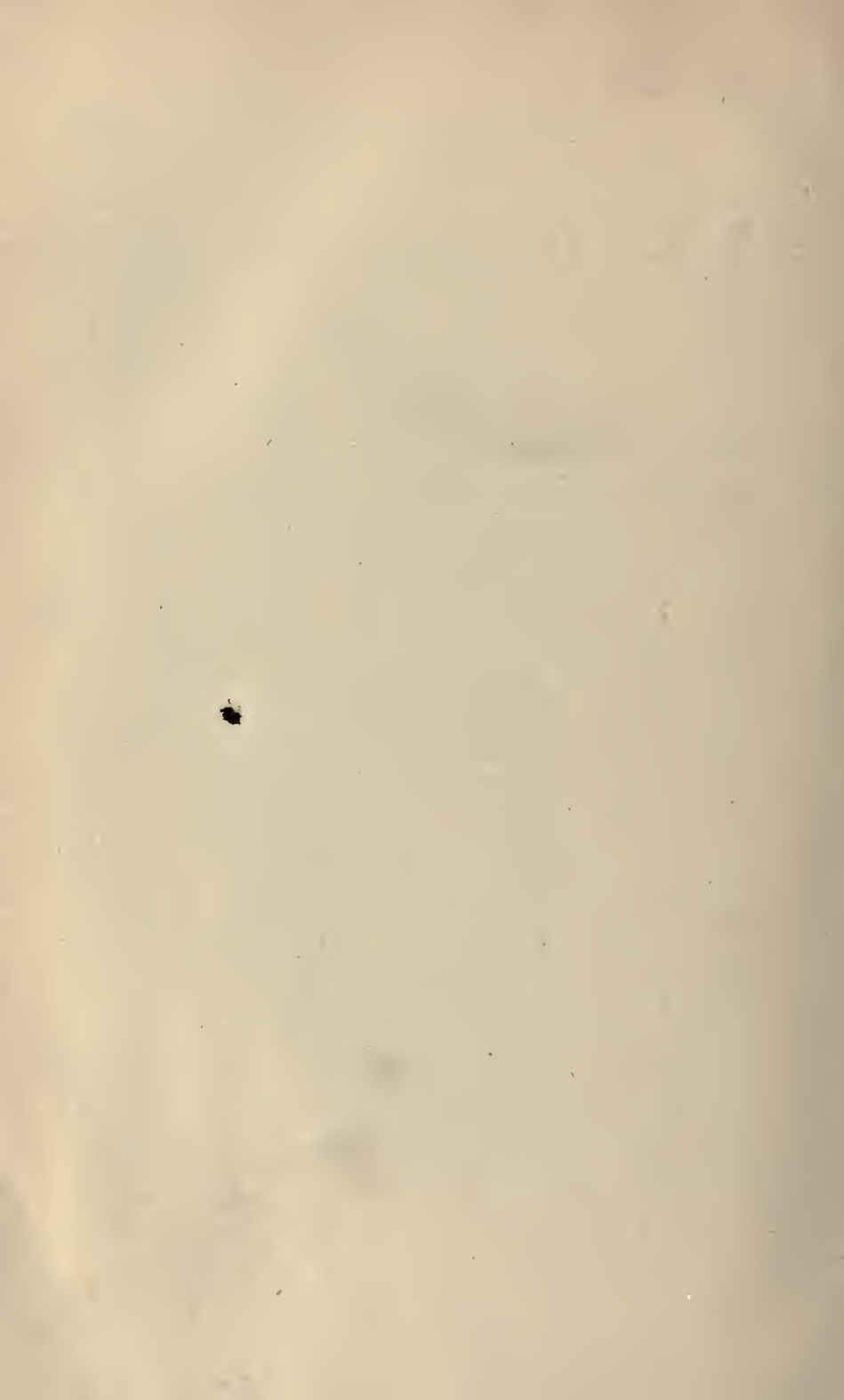
ments of mastication, so as to furnish a sufficiency of secretion to thoroughly mix and moisten the food, so that when it reaches the stomach it is prepared for the next step in the process—the mixture with the gastric secretion, which is altogether a different secretion from that drawn from the salivary glands, being alkaline, whereas the gastric is an acid. The mixture of these secretions with the food takes place in the stomach, and the process of emulcification goes on here, making a solution and a mixture preparatory to the next division, which the food is conveyed into, through the pyloric end of the stomach by a peristalsis, due to contraction and relaxation of the muscular fibers of the walls of the stomach. Here, in the duodenum, the food is mixed with the secretions from the liver and the pancreas, and at once converted into chyme, and made ready to be absorbed or taken up into the lymphatic tubes that open from the mucous membrane into the walls of the small intestines, and conveyed into the receptaculum chyli, and by peristalsis conveyed on into the thoracic duct—a tube beginning about opposite the second lumbar vertebra, and about the size of a common goose quill, passing up through the aortic opening in the diaphragm; through the right crus, lying to the right side, and behind the aorta abdominis, lying between the aorta and the vena azigos major. Opposite the fourth dorsal vertebra it inclines to the left side and ascends behind the arch of the aorta on the left side of the oesophagus, and behind the first portion of the left subclavian artery, to the upper portion of the thorax. Opposite the seventh cervical vertebra it turns outward and then curves downward over the subclavian artery, and in front of the scalenus anticus muscle, so as to form an arch, and terminates in the left subclavian vein at its angle of junction with the left internal jugular vein.

Here we perceive the product of the food begins its mingling with the blood in the systemic circulation. This chyle and the return venous blood, containing the waste material, go back to the heart, entering the right auricle, passing into and out of the right ventricle into the lungs, distributed through the capillaries there, giving up its carbonic oxide and receiving oxygen, then returned to the left side of the heart, entering it through the left auricle, through which it passes on out into the aorta, and into the arterial trunks into every part of the body—the blood being the “life of man.” It now contains all of the elements from which the system is renewed.



Systemic Circulation of the Blood - Veins and Arteries.



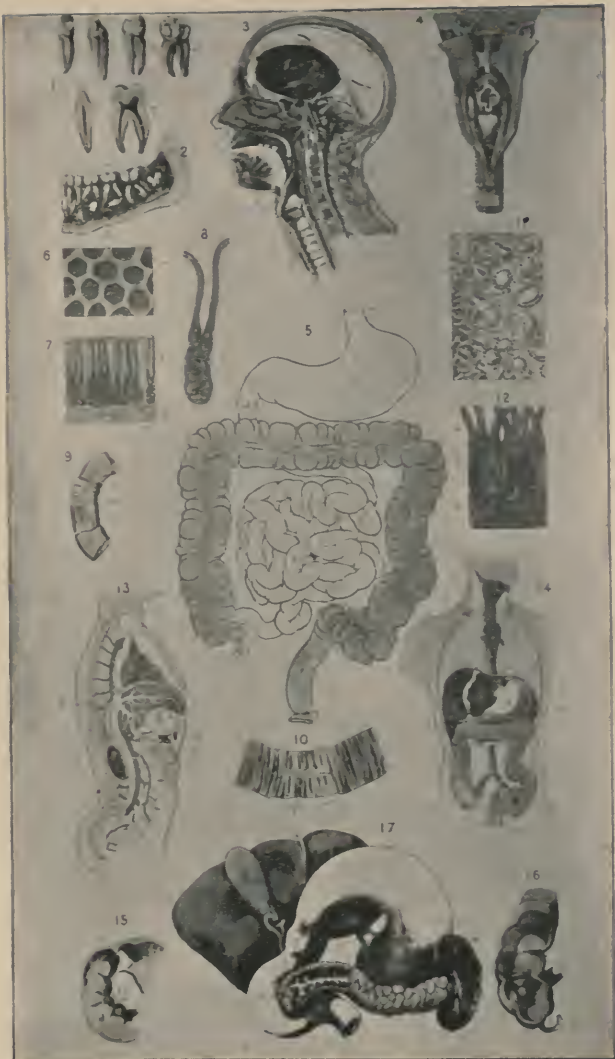


We have traced the food from the mouth through the alimentary apparatus, and watched the various stages of progress, until it has been formed into blood, and now watched its distribution as far as the ends of all of the smaller twigs of the arteries—into the capillaries. Here is the most interesting phase of our observations. The manner of renewing the organic portions of this body and the removal of the waste material claim our special attention at this point of our investigation and observation, for it is at this stage of the circulation of the fluids of the body, our greatest interest is demanded, for the physiologists have all seemed to leave the subject in the dark.

We shall hope to be pardoned for our seeming intrusion here, but we can not refrain from venturing a plausible theory regarding this subject, that, to many, will seem reasonable, if not true. It is taught by physiologists that in the capillaries blood corpuscles pass out through the walls and build up tissue. Taking a retrospect of the office of the sympathetic nervous system, we would have the reader understand that right here we see the most marvelous demonstrations of mind power, thought, wisdom, manifested more than elsewhere in the body. Sitting on its throne in the calvarium, sending its small tubes into every part of the body, countless millions in number, through these, mind is conveyed, and at the extreme terminals thereof, as the blood, containing its elements, passes on into and through the capillaries into the veins, this set of sympathetic filaments select and draw out from the blood, through the walls of these capillaries, this and that particular element needed in that part of the body, and the rest of the elements go on in the blood, through the capillary, into the veins beyond, to form the quantity unused, that makes up the waste material (the refuse) to be made over in the lungs. As this or that particular element is drawn out of the blood as it passes through the capillary, to supply the tissue that has survived the period of usefulness, the gaseous or fluid material, the new element drawn out, supplies the waste; the excess, the broken-down material, is moved on as a fluid or gas into the open mouths of the lymphatics, through which this waste is moved into the veins beyond the capillaries, through the sides of the veins (which are tubes similar to the veins). We recognize the unerring selection of the proper material in these parts of the body as going on all the time, with as much precision as the rising and setting of the sun. Now, suppose from any cause an

arrest of this process should occur, can we not see that chemical changes would occur in the parts, new compounds result, and perhaps poisonous elements formed, a diseased condition set in, destruction of the tissue ensue, and thus a nidus formed that, ere its removal, the whole course of nature would be interfered with. This, in brief, is what we are to regard as undue pressure. Hence our motto, "Take Off the Pressure," is apropos.

We hold that any obstruction to the flow of the fluids of the body, either to or from the heart, causes every pathological condition known to mankind; that removed, cures all diseases that flesh is heir to. This is a wonderful advance on old theories.



The Alimentary Tract—Digestive Apparatus.





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Pneumonia, Croupous.....	426	" Versicolor .....	810
" Catarrhal .....	435	Tonsillitis, Acute.....	377
" Intestinal .....	448	" Catarrhal .....	374
Pneumothorax .....	457	Trichinosis .....	328
Prickly Heat.....	771	Tuberculosis .....	438
Proctitis .....	736	Tumors, Intercranial.....	526
Psoriasis .....	785	Typhilitis .....	734
Purpura .....	344	Uraemia, Acute.....	687
Quinsy .....	377	Urticaria .....	765
Rheumatism .....	296	Vertigo .....	532
" Inflammatory .....	303	Warts .....	794
" Muscular .....	306	Whooping Cough.....	414
Ringworm .....	799, 803	Worms .....	741

















