MEDICAL GUIDE AND MONOGRAPH SERIES

GOLDEN RULES

OF

DIAGNOSIS AND TREATMENT OF DISEASES

APHORISMS, OBSERVATIONS, AND PRECEPTS ON THE METHOD OF EXAMINATION AND DIAGNOSIS OF DISEASES, WITH PRACTICAL RULES FOR PROPER REMEDIAL PROCEDURE.

BY

HENRY A. CABLES, B. S., M. D.

PROFESSOR OF MEDICINE AND CLINICAL MEDICINE OF THE COLLEGE OF PHYSICIANS AND SURGEONS, ST. LOUIS; CONSULTANT AT JEFFERSON HOSPITAL, ST. LOUIS; FORMERLY HOUSE PHYSICIAN AT ALEXIAN BROTHERS' HOSPITAL, ST. LOUIS; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION, ILLINOIS STATE MEDICAL SOCIETY, ETC.

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PREFACE.

Extensive treatises have been written on the diagnosis and treatment of diseases, the number of the diseases considered and the character of their description varying in the various volumes devoted to these subjects. While these treatises serve their purpose, there are many urgent instances when the physician needs a book of ready reference of diagnosis, treatment, and remedial procedure. To meet this condition, and to assist the busy physician and the progressive student in obtaining the needed information readily and authentically, this book has been prepared.

This book is an epitome of a careful and extensive examination of the literature on the subjects considered, supplemented by the author's experience in private and hospital practice, and the method of compilation and manner of presentation of demonstrated facts have been found to be the best for the purpose in view. Importance has been attached to the clinical methods of diagnosis, but at the same time the author feels that the laboratory has been drawn upon as often as necessary, as a physician who attempts to make all diagnoses by the laboratory route will find the way fraught with tedium and uncertainty.

The suggestions for treatment have been gleaned from authoritative current literature and standard

works. A variety of drugs have been named under some of the subjects, as the author believes that some good can be accomplished by correct medication. In many cases there is, on the part of the physician, a lack of knowledge of proper therapeutic technic, and the haphazard way of treatment is to be deprecated. The clinical aspect of the individual case should be studied, and treatment followed accordingly. Too often a physician administers to the patient the first cardiac stimulant that occurs to him, regardless of the fact that such a stimulant in the particular case is extremely dangerous. To exemplify another condition, it can be said that quinin is an exceedingly useful friend in small doses in certain affections, because of its power of increasing or calling out the body defenses, but in large oft-repeated doses it will have a disastrous effect, causing paralysis of the body defense by destroying the ameboid functions of the cells.

This book is presented with a firm belief that a study of it will assist in making a correct diagnosis, indicate the proper therapeutic procedure, and aid in fixing in the mind valuable information that can be readily recalled when needed.

HENRY A. CABLES.

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GOLDEN RULES

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CHAPTER I.

DISEASES OF THE STOMACH.

Gastric Ulcer.

Remember that, while the tripod pain, vomiting, and hematemesis are somewhat characteristic of peptic ulcer, they possess certain peculiarities. The pain of ulcer is localized in a circumscribed area in the epigastrium, and radiates to the back at about the tenth dorsal vertebra. Tenderness is found over the area of pain.

Remember that the pain occurs paroxysmally when food is taken and digestion is at its height, produced by irritation of acid gastric juice and the peristalsis.

Emptying the stomach, either by vomiting or with stomach tube, relieves pain. Many patients will produce emesis to get relief.

Remember that vomiting is rarely absent and occurs at the height of pain; and when the stomach is emptied, vomiting ceases and the pain is relieved.

Hydrochloric acid is always present in vomitus of ulcer, and frequently is excessive.

Remember that copious, free hemorrhage is far more common in ulcer than in any other disease of the stomach.

Remember that profuse, **painless**, sudden hematemesis in an elderly patient suggests hepatic cirrhosis rather than gastric ulcer.

Dilatation occurs after the ulcer heals. It occurs only when the ulcer is near the pyloric opening and the contracting scar tissue partially closes it.

Don't mistake the anemia of ulcer for malignant cachexia.

Remember that the vomiting of bright-red blood is almost positive evidence of ulcer.

Remember that the first symptom of ulcer may be perforation or a fatal hemorrhage.

The area of tenderness in ulcer is about two inches below the ensiform cartilage and a little to the right of the median line.

Remember that the pain of ulcer may be referred to the lower intercostal nerves, or axillary plexus, or down the arm.

Pain may persist after the ulcer heals, caused by nerve filaments being caught and compressed in contracting and hardening of the scar tissue.

Remember that ulcer is twice as frequent in women, and occurs between the fifteenth and twenty-fifth years.

Remember that the pain of gastralgia is diffuse,

and pressure or food relieves it, and neither hematemesis nor anemia occur.

Remember that in the pain of gallstones the liver is enlarged and tender, and that jaundice and palpable gallbladder is frequently present.

Always examine the stools, as frequently they contain blood, either macroscopic or occult, when the vomitus does not.

Remember that the appetite is good in ulcer, but vomiting prevents digestion and nutrition is reduced; hence these patients lose in weight.

Remember that perforation is announced by sudden, sharp, lancinating pain; weak, rapid pulse; shallow, hurried breathing, and cold, clammy sweat, with muscular rigidity and tenderness over the abdomen.

Remember that surgery is imperatively indicated in the early hours of perforation, before peritonitis develops. It is the importance of early surgical intervention that demands careful watchfulness on the part of the physician. It is gross ignorance or criminal carelessness to wait until peritonitis begins.

Remember that passing a stomach tube may cause rupture at site of ulcer.

Treatment.

Remember that there must be mechanical as well as functional rest of the stomach, and the only way to obtain it is to keep the patient in bed.

Remember that thirty-six hours of fasting, ex-

cluding even water, is the very best way to begin the treatment, unless the patient is greatly emaciated or old.

Relieve thirst with salt solution enemata.

Begin rectal feeding at the end of thirty-six hours. Nutrient enamata during the fasting period will stimulate reflexly the gastric secretion, and this will irritate the ulcer and cause pain.

Remember that the rectum has no digesting power; hence all foods must be ready for absorption.

Predigested milk, to which is added one raw egg, makes an excellent enema. Don't give too large a quantity at a time, or it will be expelled. Four ounces, repeated every four hours, is best.

Remember that panopepton is excellent in rectal feeding. Add it to normal salt solution. It is also excellent to begin feeding by mouth.

Don't feed per rectum too long, as the bowel becomes irritated and will not retain the enema. Feed per rectum exclusively for five days and then give some food by mouth. Two ounces of milk every three hours, with careful watching for return of pain, and, when absent, gradually increase the amount, is a good plan. At the end of the second week add meat broth, mashed potatoes, and white meat of fowl.

The medicinal treatment is important, but not so effective when the dietetic regimen is omitted.

The following prescription and method of administering it give good results:

℞ Bismuthi subnitratis .....3 ij–3 v
Aquæ .....ʒ ij
Misce.
Sig.: Give at one dose, with patient in the recumbent posture. Have the patient move from dorsal to side position slowly, then to the other side, thus allowing the bismuth to coat the mucosa.

Or:

℞ Cerrii oxalatis .....gr. ij
Magnesii carbonatis levis .....gr. x
Bismuthi subcarbonatis .....gr. xx
Misce et fiat pulvere No. I.
Sig.: Powder from three to six times daily.

Iron may be added to the above if anemia be severe. This will relieve vomiting and is antacid.

Or:

℞ Resorcinolis (Merck) .....3 j
Argenti nitratis .....gr. vj
Extracti hyoscyaminæ .....gr. xxx
Misce et fiant pilulæ No. XXIV.
Sig.: Pill three times daily one hour before meals.

Astringent, antiseptic, and relieves pain.

Or:

℞ Argenti nitratis .....gr. vj
Extracti belladonnæ .....gr. v
Extracti hyoscyaminæ .....gr. xx
Extracti gentianæ .....q. s.
Misce et fiant pilulæ No. XXIV.
Sig.: Pill one hour before meals.

This is an excellent combination—astringent and tonic.

Silver nitrate may be given in solution, either gr. ¼ or solution 1:1000 can be made and gradually increase dosage. Ortner's prescription is good.

℞ Extracti belladonnæ .....gr. viiss
Bismuthi subnitratis,
Magnesii oxidi,
Sodii bicarbonatis .....āā 3 iiss
Misce et fiant pulveres.
Sig.: A good pinch three times daily after eating. (Ortner.)

For hematemesis, complete rest, and best obtained by hypodermic of morphin and atropin. Ice bag to epigastrium. If severe, bandage extremities and raise foot of bed. Replace lost fluid with normal salt solution, either in rectum or into cellular tissue, by hypodermoclysis.

Ortner now gives 10 drams hypodermatically of Merck's 10-percent gelatin solution as long as blood may be seen in vomitus or stools.

Tincture of the chloride of iron 5 to 15 drops every two hours is recommended.

℞ Stypticini (Merck) .....gr. x
Antipyrini .....gr. xl
Elixiris simplicis .....ʒ j
Misce et fiat solutio.
Sig.: Teaspoonful in water every two or three hours as needed.

Or:

℞ Acidi tannici .....ʒ ij
Pulveres aluminis .....ʒ j
Garantose .....gr. ss
Misce et fiant pulveres No. XVI.
Sig.: 2 powders every fifteen minutes, followed by water.

Where the cicatricial tissue causes obstruction at the pylorus, thiosinamin may be used to cause absorption.

℞ Thiosinamini .....3 j
Glycerini .....3 iij
Alcoholis diluti .....3 vj
Misce et fiat solutio.
Sig.: Inject 8 to 15 minims subcutaneously every two or three days.

Gastric Cancer.

Remember that cancer of the stomach is on the increase. A large majority of the cases occur between the fortieth and seventieth years, but it is frequently found in young adults and even children.

Remember that enlarged and painless cervical or inguinal lymph glands found in a dyspeptic past midlife strongly indicate cancer.

Nodular swellings found under the skin about the navel or between it and the costal arch are metastatic cancer growths.

Remember that many cancer patients have edema about the ankles or anasarca. This condition develops toward the close and is due to debility.

In cancer the vomiting frequently occurs late in the day or during the night, with insomnia. Frequently insomnia is the most troublesome symptom.

Remember that a tumor can be palpated in three-fourths of the cases.

Remember that a gastric tumor can be moved to any part of the abdomen, or even into the pelvis.

Remember that a tumor that moves with respiration, but has neither respiratory fixation nor lateral movements, is not **gastric**, but **hepatic.**

Remember that hydrochloric acid is absent or

greatly diminished, and lactic acid is present and Boas-Oppler bacillus may be found.

Always examine gastric contents, and better give test meal.

Remember that in palpating a gastric tumor three things are found:

1. Changes on deep inspiration, but is free from respiratory movements.
2. Wide area of aortic pulsation.
3. Intrinsic movements occurring in the contraction of the hypertrophied muscularis of the tumor, causing it to appear and disappear, lifting the abdominal wall overlying the tumor.

Remember the value of inspection and observe—

1. The state of general nutrition.
2. Fullness in the epigastrium.
3. Peristaltic waves.
4. Nodules under the skin.

Remember that the pain of carcinoma is constant and gnawing, not often referred, and vomiting affords no relief.

Remember that fatty stools, uncontrollable diarrhea, glycosuria, and perhaps the palpation of an immovable tumor are signs of pancreatic cancer.

Remember that emaciation, loss of weight and strength, vomiting of coffee-ground colored material, and cachexia, with presence of gastric tumor, leaves little doubt of cancer. As a rule there is no vomiting of bright-red blood or clots, that are frequently associated with peptic ulcer.

Remember that the duration is short, seldom exceeding one year.

Treatment.

Surgery offers the only hope, and the diagnosis must be made early if an operation be of any benefit.

Remember that, medicinally, the object sought is relief of pain and vomiting. Tonics should be given.

Washing out the stomach often relieves pain and vomiting. Use saline solution or boracic acid solution. Condurango bark, given in powder of 30 grains each three times daily, gives excellent results as to the amelioration of symptoms and improvement of appetite.

Elixiris ferri quininæ et strychninæ (U. S. P.) ʒ ij, three times daily after meals.

Liquoris potassii arsenitis ♏ iij vel ♏ v is not only a good tonic, but is very beneficial in fighting the anemia.

Where pain is due to superacidity, the following relieves by neutralizing the acid:

℞ Sodii bicarbonatis .....gr. xv vel gr. xx
Magnesii carbonatis .....gr. v vel gr. x
Acidi hydrocyanici diluti .....♏ iv
Aquæ menthæ piperitæ ....q. s. ad ʒ j
Misce.
Sig.: To be taken at one dose and repeat three times daily.

Creosote in minim doses in gelatin capsule after food is very highly praised by Yeo. He says especially good results are obtained in the scirrhus form of cancer.

℞ Dionini .....gr. viij
Acidi hydrocyanici diluti .....♏ xxx
Bismuthi subnitratis .....ʒ ij
Aquæ chloroformi .....q. s. ad ℥ iv
Misce et fiat solutio.
Sig.: Shake well and take teaspoonful every two or three hours.

Or:

℞ Resorcinolis (Merck) .....gr. xxx
Vini rhei .....ʒ j
Syrupi aurantii .....ʒ iv
Decoctionis condurango (1:12) q. s. ad ℥ vj
Misce et fiat solutio. Dispense in dark amber bottles.
Sig.: Tablespoonful every two hours.

Gastritis.

Remember that the history of the case, especially that relating to the diet, will be of great help in diagnosis. Usually find excess at the table, the eating of tainted food or overripe fruit.

Remember that a majority of the cases are afebrile, and recovery in forty-eight hours is the rule, except where the attack is due to toxic substances contained in the food.

Always test the knee jerk and reaction of the pupil, because gastric crisis occurring in locomotor ataxia frequently simulates acute gastritis.

Remember that a severe case may require time to clear up the diagnosis. For instance, an attack accompanied by severe headache and delirium occurring in a child might be mistaken for meningitis, or the pain may be so severe as to suggest gallstones, and frequently it marks the onset of many of the

infectious diseases, as measles, scarlatina, and typhoid.

Always examine the heart, liver, and lungs in all cases of chronic gastric catarrh, as it is often due to portal stasis.

Remember that the vomiting of mucus, or where the gastric contents are thickly coated with mucus, is found only in catarrhal processes.

Remember that alcohol is an important factor in causing chronic gastritis, and it must be discontinued if treatment be of any avail.

Many cases of cardiac palpitation or dyspnea are due to gastritis, causing the food to ferment and the gas distends the stomach.

Treatment.

In an acute attack allow no food for twenty-four hours. Stimulate vomiting by giving a tumbler of warm salt water and repeat until the stomach is thoroughly cleansed. If water checks the vomiting by diluting the irritant, produce it by tickling the fauces. Use the stomach tube if possible and wash out thoroughly. Follow with a cathartic.

Olei recini ʒ j, given in orange juice, with 2 or 3 drops of tincturæ opii if needed, is excellent.

If icterus develops, or vomiting persists, give the following:

℞ Hydrargyri chloridi mitis .....gr. iv
Cerrii oxalitis .....gr. x
Sacchari lactis .....gr. xxx
Misce et fiant pulveres No. XII.
Sig.: Powder dry on tongue every fifteen minutes.

Two hours after last powder give saline. A mustard plaster over the epigastrium gives relief.

For continued nausea allow cracked ice. Follow with a liquid diet, preferably milk, to which add lime water or soda water. Allow a wineglassful every three or four hours. After cleansing the stomach a sedative is indicated and bismuth is the best.

℞ Bismuthi carbonatis,
Sodii bicarbonatis .....āā ʒ ij
Spiritus chloroformi .....ʒ j
Aquæ menthæ piperitæ ....q. s. ad ℥ iij
Misce et fiat solutio.
Sig.: Tablespoonful every four hours.

If the pain is severe, the deodorized tincture of opium may be added to the above. Later a bitter tonic may be needed. The following is good:

℞ Tincturæ nucis vomicæ .....ʒ ij
Tincturæ gentianæ compositæ .....ℨ iss
Tincturæ cinchonæ compositæ q. s. ad ℥ iv
Misce et fiat solutio.
Sig.: Teaspoonful before meals.

Dilute muriatic or nitromuriatic acid may be added if needed. In chronic cases remove the cause, if possible. If due to alcohol or iced drinks, prohibit them. If secondary to cardiac, hepatic, or pulmonary conditions, relief will follow improvement in those conditions. It is in the chronic form that stomach washing gives the most brilliant results.

After a thorough washing with clear water, the following solution may be run into the stomach as a final douche:

℞ Thymol .....gr. viij
Acidi borici .....℥ iv
Aquæ .....O j
Misce et fiat solutio.
Sig.: Use in stomach tube.

If the tube can not be used, have the patient drink a pint of hot water in which is dissolved a half dram of sodium bicarbonate on arising in the morning. This will dissolve the mucus, and thus cleanse the gastric mucosa as well as stimulate the circulation. Direct patient to take meal without liquids. This insures thorough mastication and insalivation. Diet should be light and nutritious. A glass of milk containing a raw egg, given twice a day between meals, is excellent. If dilatation exists, give dry diet and small quantity every four hours, and wash out stomach once a day.

For sour eructations and distention of stomach by gas the following is excellent:

℞ Phenolis .....gr. xxv
Glycerini .....℥ iv
Bismuthi subcarbonatis .....℥ v
Lactis magnesiæ .....q. s. ad ℨ iij
Misce.
Sig.: Shake well and take teaspoonful after food.

The following before meals gives good results:

℞ Resorcinolis (Merck) .....℥ j
Bismuthi salicylatis .....℥ iiss
Tincturæ catechu .....℥ vj
Syrupi aurantii .....ℨ ij
Aquæ .....q. s. ad ℨ iv
Misce.
Sig.: Shake and take dessertspoonful half hour before meals.

Where neurasthenia coexists:

℞ Arseni trioxidi .....gr. j
Extracti nucis vomicæ .....gr. x
Euquinini (Merck) .....gr. xxx
Ferri carbonatis .....3 ij
Mucilaginis acaciæ .....q. s.
Misce et fiant pilulæ No. LX.
Sig.: 2 pills after meals.

Hyperchlorhydria.

Remember that under this term is included a condition of excessive formation of hydrochloric acid, due entirely to nervous influence, and no anatomical lesion is found; hence it is quite common in chlorosis, hysteria, and neurasthenia. It is frequently found in brainworkers.

Pain is variable, from mild discomfort after meals to an intense gastralgia, developing at the height of digestion and caused by the presence of free hydrochloric acid. Vomiting or eating of proteid food will relieve the pain, because it removes the acid.

Eructation, heartburn, increased salivation, and vomiting of sour liquid occurs.

Remember that there is no "tender spot" or hematemesis as seen in ulcer.

Remember that the absence of excess of mucus and excess of HCl with the history excludes gastritis.

Examination of stomach contents shows HCl, no lactic acid or Oppler-Boas bacilli, and the duration of disease will exclude cancer.

Remember that this condition occurs in children, and usually presents the following picture: a highly neurotic child is attacked at midday by severe headache, causing it to cry out with pain, increased by moving the head, or by coughing or sneezing; next a violent pain in the stomach, with legs drawn up, hands clasped over the stomach; belching of gas and sudden emesis, without apparent effort, which gives relief. The vomitus is pale-green or yellow color, fluid, and contains an excess of HCl. It will digest egg albumen. Usually a rise of temperature at onset, but later becomes subnormal. Tongue is clear, moist, and red.

Treatment.

Diet. Milk and egg diet for a few days often relieves milder forms. Proteid diet is indicated, as it uses up the acid. Carbohydrates should be greatly restricted. Don't allow wines, liquors, tobacco, condiments, smoked meat, sour foods, or radishes.

Lavage. Washing out the stomach, preferably in the evening, with an alkaline solution or a solution of silver nitrate (1:1000) gives excellent results.

Medication. Alkalies, especially the earthy, are indicated.

The following is a good antacid:

℞ Sodii carbonatis,
Magnesii carbonatis,
Bismuthi subcarbonatis .....āā gr. xv
Misce et fiat pulvere No. I. Dentur tales No. XX.
Sig.: Powder two or three hours after meals.

To check secretion use belladonna or atropin:

℞ Extracti belladonnæ .....gr. ⅓
Magnesii oxidi .....gr. x
Misce et fiat pulvere No. I. Dentur tales No. XX.
Sig.: Powder after meals.

If fermentation occurs, with eructation of gas:

℞ Phenolis .....gr. xxv
Glycerini .....ʒ ij
Bismuthi subcarbonatis .....ʒ iv
Lactis magnesiæ .....q. s. ad ℥ iij
Misce et fiat solutio.
Sig.: Shake well and take a teaspoonful after meals.

Or:

℞ Argenti nitratis .....gr. iij
Aquæ destillatæ .....ʒ iij
Misce et fiat solutio.
Sig.: Dessertspoonful two hours after meals.

Distress after meals may be relieved by:

℞ Creosoti .....♏ xv
Sodii bicarbonatis .....gr. xxx
Spiritus chloroformi,
Spiritus ammonii aromatici ....āā ʒ ss
Aquæ menthæ piperitæ ....q. s. ad ℥ iij
Misce et fiat solutio.
Sig.: Dessertspoonful after meals.

For the nervousness give:

℞ Sodii bromidi .....ʒ j
Resorcinolis (Merck) .....gr. xxv
Aquæ anisi .....q. s. ad ℥ iij
Misce et fiat solutio.
Sig.: Dessertspoonful after meals.

Hematemesis.

Remember that fatal syncope may occur without any vomiting. The blood vomited may be fluid or clotted, and is usually dark in color. Anemia and

edema develop early, and convulsions, hemiplegia, or blindness may occur.

Remember that gastric hemorrhage may be the first symptom observed in leukemia.

Remember that fatal hemorrhage may be due to rupture of varix in esophagus, and blood run into the stomach; hence no gastric lesion is found.

Remember that the blood is vomited if it comes from the stomach, while it comes up from the lungs after a fit of coughing; as a rule, blood from the lungs is free of clots, or, if any, they are small. The blood is frothy, because of the contained air and alkaline in reaction.

Treatment.

Absolute quiet in bed. Nothing by mouth, except cracked ice. Morphin and atropin hypodermatically to effect. Ergot or ergotin hypodermatically. Give 10 drams of Merck's gelatin, 10-percent, sterilized, and repeat as long as blood appears in vomit or stools. Ice bag over epigastric region. Feed only per rectum.

Tincturæ ferri chloridi in 5 to 15 drops may be given. Plumbi acetatis gr. ss–gr. j may be given every two hours. If severe or oft repeated, operation is indicated if the patient's condition is good.

Most cases recover quickly with rest, and styptics per os may cause vomiting. Hypodermoclysis of normal saline solution or transfusion by Crile's method may be life-saving.

CHAPTER II.

DISEASES OF THE INTESTINES.

Acute Enteritis.

Remember that exposure to cold or sudden and decisive drop in the temperature may cause an enteritis, probably due to influence on cutaneous nerves. Improper food, especially in children, is a very frequent cause.

There is no question that some cases are due to malaria, and quinin readily controls the diarrhea when other remedies fail.

The dominant symptom is diarrhea. The stools are thin, mushy, or watery, and pale-yellow or greenish color, and contain mucus, but rarely any blood. In severe form stools lose color, assume the rice-water character, are foamy, and have sour odor. With the microscope portions of undigested food, mucus, bacteria, epithelial cells, and calcium oxalate and phosphate crystals may be seen.

Colic is often present. The severity of the pain varies, and may cause collapse. Pressure over the abdomen affords relief. Abdominal distention and borborygmi occur, due to gas formation. Great thirst and diminution of quantity of urine occur from loss of water by the bowel. In severe cases urinary suppression occurs, followed by general edema. Albumins and casts may be found in the

urine. Skin may be cyanotic, cold, and clammy. Emaciation is rapid in children, and eyes become sunken. Fever may occur, but is usually absent.

Remember that, in case fever is present, it lacks the peculiar curve and persistency found in typhoid, and the absence of slow pulse; the enlarged spleen and the absence of eruption would also exclude typhoid.

Etiologic Treatment.

If pain be severe, give hypodermic of morphin and atropin. If due to cold, give sudorifics and external applications to produce sweating. Where malaria is cause, give quinin. If due to chemical poisons that can be neutralized, give the proper antidote.

If caused by toxins that can not be neutralized, too coarse food, or impacted feces, rid the bowel as soon as possible of irritating substances.

Cathartics. We have two means of cleansing the bowel—drugs and colon irrigation. Owing to the inflammatory condition, only mild drugs should be given. Castor oil or calomel is best.

Castor oil should be administered in one large dose, ½ ounce in orange juice, to which may be added a few drops of tincture of opium to prevent griping.

Calomel is especially indicated in persistent vomiting. Best to give one large dose—gr. iv–gr. vij —as small repeated doses may irritate the bowel.

Colon irrigation is the least harmful. Use 1 quart of warm water, and, to assist in retaining it, add 20 drops of the tincture of opium. Soap, glycerin, or oil may be used in the water.

Diet is important. Reduce the work of the bowel to the minimum by using concentrated diet, with little residue. Complete abstinence for twenty-four hours, with teaspoonful of tea for the thirst, is excellent. Allow only gruels from barley, rice, sago, or arrow-root. Give one or two tablespoonfuls hourly. Albumen water is allowable. Of liquids, tea is best, given tepid or hot. As the diarrhea decreases give broths, with yolk of egg, crackers, and breadcrusts. During the attack give food in small quantities, neither very hot nor cold. Milk may be tried by giving a tepid tablespoonful hourly, and, if it increases the diarrhea, stop it.

Medication should be such as meets the indications. Soft capsule of olei ricini ♏ x–♏ xx and salol gr. v are very efficacious. Or creosote may be used as follows:

℞ Creosoti ..... ♏ xv
Tincturæ gentianæ compositæ ..... ♏ xxx
Spiritus vini gallici ..... ʒ iij
Misce.
Sig.: Teaspoonful three times daily.

Or:

℞ Bismuthi benzoatis ..... ℈ ij
Salolis ..... gr. xxiv
Pulveris opii ..... gr. vj
Misce et fiant pulveres No. VIII.
Sig.: Powder every three or four hours after the bowels have first been cleansed of irritating material.

Or:

℞ Tannalbini .....3 ij
Resorcinolis (Merck) .....gr. xv
Glycerini .....ʒ j
Aquæ cinnamomi .....q. s. ad ʒ iv
Misce fiat misturæ.
Sig.: Shake well and take a dessertspoonful every three hours. For adult a tablespoonful should be given.

For relief of thirst and to replace the fluid lost by the body, the continual seepage of normal saline solution into the bowel is excellent. The technic of continuous flow is very important and is as follows: a fountain syringe, or a can with a large rubber tube attached, and a hard-rubber vaginal tip, with several openings at the end, is all that is required. Flex the vaginal tip about two inches from the end by placing it in hot water and bending it, thus forming an obtuse angle. Insert until the angle fits closely to the sphincter, then bind the tube to the thigh with strips of adhesive to prevent its being expelled. The douche bag or can is suspended from the foot of the bed so that its base is six inches above the level of the patient's buttocks. Put one and a half pints of solution in the bag at a temperature of 100° and keep it at this temperature. It should require no less than forty nor more than sixty minutes for this amount to percolate into the bowel. If administered more rapidly, it will be expelled. A hypodermoclysis of normal saline solution into the subcutaneous tissue may be resorted to in desperate cases.

Chronic Enteritis.

Remember that constipation is the rule in the chronic, but may alternate with diarrhea.

Always examine the stools, as they contain the diagnostic evidence.

Remember that mucus in the stools is always indicative of enteritis, and never occurs from ulcer or cancer alone; but the presence of blood always signifies a complication, such as piles, ulcer, or cancer. Undigested portions of meats, fats, and starch may be abundant.

"**Sago-pearls**" are swollen, glassy particles of mucus, and may be seen in the stool. **Yellow mucus granules** are soft particles of mucus stained by bile pigment, and originate in the small bowel. Colicky pains over lower portion of abdomen, tenesmus, and gaseous distention are often present. **Where colitis** exists, tenderness over the course of the colon may be elicited by palpation. There is pallor and loss of flesh.

Treatment.

The diet is of great importance. It must be nourishing, so that the patient's strength is built up and yet avoid irritating the bowel. Meats suitable are white meat and fish, scraped beef, calves' brains, chopped meats. Broths, eggs—raw, soft boiled, or scrambled—may be added. **Farinaceous foods.** Broths are liable to irritate, and, when given, the vegetables and meat should be strained

out. Rice, sago, and arrow-root are good. Milk is excellent; one to two quarts daily; add lime water if it causes any trouble. Fats—only form is butter. Fresh fruit should be entirely forbidden.

Time. Meals should be given five times a day.

The stools should be watched for particles of **undigested** food or milk curds.

Colonic irrigation is best if the large bowel is involved. May use warm water, saline solution, or olive oil. **Castor oil** or calomel is best laxative, and should be given in one dose to prevent irritation of mucosa. **Astringents** may be needed to control the diarrhea; these may be added to irrigation solution, using tannin 1 dram to the quart, or boracic acid 5:1000, or silver nitrate 1:2000.

Medication. Tannigen and tannalbin are excellent astringents. They are tasteless, and are not affected by gastric juice.

℞ Tannalbini .....gr. xv
Fiat capsula No. I. Dentur tales capsulæ No. XXX.
Sig.: 4 to 6 capsules daily.

Or:

℞ Tannigeni .....gr. vij
Fiat capsula No. I. Dentur tales capsulæ No. XX.
Sig.: Capsule every two hours.

Alum gr. iss–gr. iv may be given every two hours. **Lead acetate** gr. ss–gr. iss may be administered. **Silver nitrate** internally is not efficacious, as hydrochloric acid in the stomach converts it into the chlorid; when used, it should be given in capsules hardened with formalin, so that the gastric juice will

have no effect. Bismuth is excellent; use either subnitrate or salicylate in large doses.

℞ Bismuthi subnitratis .....gr. xx–gr. xxv
Extracti opii .....gr. ⅙–gr. ⅓
Misce et fiat pulvere No. I. Dentur tales doses No. XXX.
Sig.: Powder every two or three hours.

Or:

℞ Bismuthi subnitratis .....gr. xxx
Bismuthi subgallatis .....gr. x
Misce et fiat charta No. I. Dentur tales chartæ No. X.
Sig.: Powder every two or three hours.

Or:

℞ Plumbi acetatis .....ʒ j
Extracti opii .....ʒ ss
Resorcinolis (Merck) .....ʒ iss
Misce et fiant capsulæ No. X.
Sig.: Capsule every three hours.

Or:

℞ Salolis .....ʒ j
Sodii bicarbonatis,
Sodii benzoatis,
Bismuthi salicylatis .....āā ʒ iss
Misce et fiant pulveres No. XX.
Sig.: Powder every four hours.

Obstruction of the Bowel.

Remember that the symptom complex will vary according to the degree of obstruction. There may be slight difficulty in the discharge of feces, or fecal **retention** may occur, and onset may be sudden or gradual.

Accumulation of **feces** and **gases** occurs above constricted area. Distention of abdomen. Peristal-

tic waves can be seen above obstruction. **In complete obstruction** there are great distention, collapse, feeble pulse, coldness, and cyanosis of the extremities. Vomiting, at first greenish, later resembles feces and has a fecal odor.

Intussusception.

Remember that it most often occurs at iliocecal junction, and usually found in infancy.

1. Sudden onset of pain—severe, continuous, or paroxysmal; referred to umbilicus.

2. Vomiting occurs early. More constant in children. Rarely have fecal vomiting in children.

3. Stools are characteristic, containing blood and mucus. Tenesmus is severe.

4. **Tumor** is egg or sausage-shaped, movable, and firm. It changes its position as the intussusception progresses. Treves says, "It nearly always can be felt during pain." Clubbe says, "Very sudden onset in previously healthy baby is a peculiarity of intussusception. The child screams, turns pale, vomits, which ceases but to recur again."

5. Pulse and temperature remain normal.

Issue. May terminate in one of three ways:

1. Union at the point of invagination, with sloughing of the invaginated portion of the gut, and recovery. (Rare.)

2. Peritonitis.

3. Ulceration and perforation.

Treatment.

Never administer cathartics and purgatives, even in fecal impaction. Enemata of water or saline solution with rectal tube, with hips of the patient elevated, is best. If an intussusception is seen early, the distention of the bowel with either air or water may reduce it; but if the invaginated portion becomes edematous, it will be of no avail.

Remember that it is a safe rule to operate in intestinal obstruction of any cause other than fecal impaction, and do it early before peritonitis sets in.

Remember that obstruction of the bowel due to fecal accumulation is positively the only form that does not belong to the surgeon.

Chronic Constipation.

Remember that persistent constipation, continuing for weeks, is incompatible with good health.

Remember that constipation is a relative term. Autointoxication is supposed to be the cause of a great many ills due to the resorption of noxious matter from retained feces.

Remember that the fecal mass may become channeled and diarrhea occur. An habitually constipated woman, seized with diarrhea, nausea, and vomiting, should cause a thorough examination of the large bowel.

Remember that dysmenorrhea and sacral neuralgia may be caused by impacted feces. Piles, colonic ulceration, occlusion of the bowel, and perforation

may be caused by persistent retention. As a rule, mental depression, lassitude, headache, coated tongue, and anorexia are the more common symptoms. Attack of colic may occur.

Treatment.

Diet is very important. Coarse foods, as whole wheat, rye, or cornmeal bread. Fruits, except bananas. Vegetables, as cabbage, turnips, tomatoes, spinach, onions, celery. Sweets, if they do not cause indigestion, are laxative. Fats, as butter and olive oil. Water freely during the day; a glass of water at night or morning acts beneficially. Punctuality at the stools must be urged; best time is after breakfast.

Massage will relieve if continued for a long period of time. The hand should be placed over the cecum and follow the course of the colon. This is contraindicated in spastic constipation. Exercise of the body in tennis, rowing, lifting the legs while lying on the back, walking.

Enemata will stimulate peristalsis and lessen congestion. Overdistention produces colonic dilatation; hence, in time, they lose their beneficial effects.

Drugs. Aloes and strychnin are indicated.

℞ Extracti aloes ..... gr. ss
Extracti rhei ..... gr. ij–gr. v
Extracti nucis vomicæ ..... gr. ¼
Resinæ podophylli ..... gr. ⅒
Extracti belladonnæ ..... gr. ¼
Extracti taraxaci ..... gr. j
Misce et fiat pilula No. I.
Sig.: Pill night and morning. Not to be given in pregnancy.

Or:

℞ Extracti belladonnæ .....gr. ½
Extracti nucis vomicæ .....gr. ¼
Extracti colocynthidis .....gr. ij
Misce et fiat pilula No. I.
Sig.: Pill three times daily.

In atony of the bowel use:

℞ Extracti rhamni purshianæ .....ʒ j
Extracti nucis vomicæ .....gr. viij
Extracti physostigmatis .....gr. ij
Extracti hyoscyaminæ .....gr. v
Misce et fiant pilulæ No. XXX.
Sig.: Pill night and morning.

If anemic, add iron or use:

℞ Ferri sulphatis .....gr. x
Extracti aloes aquosi .....gr. v
Extracti rhamni purshianæ .....gr. xx
Extracti belladonnæ,
Extracti nucis vomicæ .....āā gr. iij
Misce et fiant pilulæ No. X.
Sig.: Pill after meals.

In old people use the following:

℞ Aloini .....gr. vj
Podophylli .....gr. ij
Misce et fiant pilulæ No. XII.
Sig.: Pill night and morning.

Phenolphthalein is good and causes no griping. It is the principal ingredient in recent proprietaries. It is not harmless, as collapse, with vomiting and diarrhea, have occurred with **purgen.**

℞ Fluidextracti rhamni purshianæ aromatici .....ʒ iv
Sig.: Teaspoonful night and morning. The morning dose taken with a glass of hot water half an hour before breakfast.

Gradually withdraw drug as habit of daily evacuation is established.

Appendicitis.

Remember that the various forms described are only various stages in the progressive changes of one pathological condition, and that an unchecked inflammation of the appendix will terminate in gangrene and death. Of all the inflammatory conditions in the abdomen occurring in persons under thirty, appendicitis is by far the most common.

Remember that sudden pain in the right iliac fossa, fever, rigidity of right rectus muscle, and localized tenderness is appendicitis almost without a single exception.

Remember that fecal vomiting, a very common symptom of obstruction, is never seen in appendicitis.

Remember that marked tenesmus and bloody stools in children are the signs of intussusception and not appendicitis.

Remember that the thermometer is one of the most trustworthy guides in diagnosing appendicitis, and Murphy says he would refuse operation if no fever was present during the first thirty-six hours of the disease.

Remember that the subsidence of excruciating pain is an ominous sign of gangrene, and perforation is not far distant.

Remember to exclude the onset of pneumonia in

cases of sudden colicky pain in abdomen of children by auscultating the chest.

Remember that typhoid bacilli may cause appendicitis and many cases of perforation occur through typhoid ulcer.

Never mask your symptoms with morphin; it is positively suicidal for both doctor and patient. If the patient complains of pain in emptying the bladder or rectum, always examine per rectum for rectovesical or rectouterine tenderness, or an inflammatory swelling.

Tenderness at the right side of the rectum in rectal examination is nearly always present, although there may be none at McBurney's point.

Masked Appendicitis.

In this form there is no history of an acute attack, and the usual clinical picture of appendicitis is absent.

1. **Dyspepsia,** with belching, pain at irregular intervals following meals, persisting for a time, followed by a period of complete disappearance of all symptoms regardless of diet.

2. **Diarrhea,** especially early morning, with two or three loose movements, with freedom from it for balance of the day. Evacuations may be preceded by colicky pains, which the evacuations relieve. At times there is a peculiar periodicity of diarrhea, occurring at a certain morning hour. There are periods of freedom from diarrhea, just as the

gastric symptoms. The stools may be normal at first, but later become slimy and contain mucus. Persistent constipation, with extreme neurosis, may occur.

3. **Pain** is paroxysmal, with all degrees of severity. Occurs suddenly, often in the epigastric region, accompanied by nausea and vomiting.

4. **Palpation** over the appendicular area will usually reveal tenderness and often causes nausea. The swollen appendix can be palpated through a relaxed abdominal wall if not too thick.

Remember that disease of the gallbladder, stomach, and pelvis must be excluded before making a positive diagnosis. **Have the patient lie on the back** and limbs straight. With the tips of the fingers over the cecum, make deep pressure. Now tell the patient to make the muscles of the right limb rigid and stiff at the knee, and raise the foot by using hip joint and lifting as against a weight. If the appendix is at all tender, he will complain of pain.

Treatment.

Remember that the treatment of appendicitis is always surgical, regardless of type, time, or tenderness. **The danger of perforation** and general peritonitis occurring at any hour should always be kept in mind, and warn us against useless medication.

If an operation is absolutely prohibited, then Oschner's method gives best results. Give absolutely nothing by mouth; use nutrient rectal ene-

mata. If vomiting is present, wash out the stomach. Apply an ice bag over the cecum. Use continuous seepage (page 29) of normal saline. If pain is intense, use enough morphin to make it bearable, but never entirely relieve it.

Mucous Colitis.

Remember that this is a neurosis, and is found in hysterical or hypochondriacal patients. They are dyspeptics, and have carried self-dieting to such extremes that they become thin and anemic.

The diagnostic sign is mucus—either as strips, shreds, or casts—passed at stool. Other times it is a slimy, gelatinous mass, resembling frog-spawn. Usually occurs at intervals and follows prolonged constipation. **Colicky** pain, usually agonizing, with tenesmus, is present. These mucous segments are often mistaken for segments of tapeworm.

There is tenderness over the colon, and often a spot of great tenderness between the navel and left costal arch. Abdomen is rarely distended. Mucous casts may be found in the urine. Urticaria and boils are frequently associated with this condition.

Treatment.

Plenty of outdoor exercise should be given. Diet must be liberal, and consist of the ordinary foods; should be well cooked and served at regular time. Foods leaving considerable residue are good to overcome constipation.

Constipation is best prevented by castor oil. Give in morning on empty stomach and enough to open the bowel. Calomel or magnesium sulphate may be used, but are not so good. Pain can usually be relieved by hot applications to the abdomen, but at times it is so severe as to require hypodermic of morphin combined with atropin.

Irrigate the colon with normal saline solution. In severe neurosis use the Weir-Mitchell method of feeding. Quiet the nervous condition with bromids.

At night inject as high as possible half to a pint of warm olive or cottonseed oil. Have patient retain the oil all night if possible. This usually causes a copious evacuation in the morning. Continue this every night for two or three weeks, then every other night for same period, then three times a week.

Arsenic and the glycerophosphates will often give excellent results.

Visceroptosis.

To determine the degree of displacement of the abdominal organs, accurately and easily applied surface markings of the normal position of the organs are essential. The following lines will be of aid:

The sternoensiform line is drawn across the body at the junction of sternum and ensiform. It marks the height of the abdominal viscera. In the right nipple line, with patient in recumbent posture, hepatic dullness begins. Gastric resonance falls half an inch below it on left side; the central tendon of

the diaphragm half an inch below in median line. In addition, this line indicates the kind and degree of chest deformity. It crosses the fifth costal on either side in normal chest, but may cut the fifth space in emphysema because the ribs and cartilages are abnormally horizontal; or it may cut the fourth space or fourth rib if the ribs are abnormally depressed, as they so often are in visceroptosis.

The midepigastric point is midway between the umbilicus and the sternoensiform junction.

The transpyloric line passes through this point. It cuts the costal margin near the outer border of the recti and crosses the ninth costal cartilage.

The pylorus is situated on this line, halfway between the midepigastric point and the costal margin. In ptosis it is displaced downward and toward the median line.

The lesser gastric curvature is about three-fourths of an inch above and the greater curvature one and one-half inches below the midepigastric point; this point marks the lower hepatic margin as it crosses the body, while behind it the pancreas crosses the spinal column.

The umbilical line is drawn through the umbilicus and touches the iliac crests.

The transverse colon lies just above it, while the lower poles of the kidneys do not reach it. In ptosis both colon and kidneys fall below this line.

Symptoms. A high degree of ptosis may cause no symptoms.

1. Circulatory disturbances are manifested by dizziness, fainting, flushing of the head, and palpitation in the upright position, but relief is obtained on lying down.

2. Gastric symptoms are anorexia, nausea, vomiting, and eructations.

3. Nervous group includes pain or dragging sensation in back or loins, neuralgic pains in the head, sleeplessness, despondency, and reflex cough.

4. Intestinal—constipation is the rule, but diarrhea is present if mucous colitis exists.

Respiration is costal, superficial, and apex beat of heart may be seen in sixth space, and visible tug on strictures at root of neck. Epigastric area sinks in, and hypogastric region protrudes in erect posture. The skin is of grayish hue, and cold and clammy. Hands and feet readily become cold. The abdominal organs are displaced downward. The pancreas is palpable as a cord crossing spinal column.

Treatment.

Diet should be liberal, with a view of putting on fat, thus furnishing additional support to the viscera. Forced feeding on the Weir-Mitchell plan is excellent, because the nervous system improves in addition to the benefit derived from the fat.

Mechanical support for the viscera may be obtained by using abdominal bandage or adhesive strips. If the binder be used, it should fit snugly, and have straps to prevent "riding the hips." If

adhesive, use six-inch zinc oxid, and cut them long enough to extend three-fourths around the body. Apply in recumbent posture, beginning in the hypogastric region.

Drugs are indicated when tonics are needed. Strychnin may then be used to good advantage. Operation for replacing organs and suturing them is indicated in a few cases with neurasthenia, yet not all neurasthenics should be operated upon.

Caution. When visceroptosis is discovered in a patient, it is well not to tell him, as it often forms a basis for many imaginary disorders in the neurasthenic or hysterical.

CHAPTER III.

DISEASES OF THE LIVER.

Icterus (Jaundice).

Remember that icterus, or jaundice, is a symptom, and may be found in a variety of conditions. It is due to alteration of bile or occlusion of ducts.

Examine the urine before diagnosing jaundice, although the tissues be discolored. When the urine contains bile pigments, the froth formed by shaking it is colored yellow. Nitric acid will give the play of colors, best observed on a white porcelain dish. Albumin will usually be found in the urine.

Remember that the pulse and respirations are greatly reduced in frequency, especially the respiratory rate.

Remember that cholemic intoxication may occur, manifested by delirium, coma, convulsions, and death.

Remember that hemorrhages are frequent, and no operation should be attempted unless absolutely necessary.

Intense pruritus and sweating, often localized to the palms and abdomen, occur in chronic icterus.

Grayish-colored stools, with putrid odor, are due to the absence of bile in the intestine.

Always examine the liver and gallbladder carefully in all cases of jaundice.

Treatment.

Diet. Avoid fats, alcohol, tea, coffee, and meats. An exclusive milk diet is best. Calomel in broken doses (gr. ¼ hourly until gr. iij are taken), followed in four hours by saline. The bowels may be regulated by copious enemata; these are supposed to stimulate contractions of the gallbladder. Or saline aperient waters may be given; best given on arising before food is taken.

Where gastrointestinal catarrh exists, the following may be used:

℞ Acidi hydrochlorici diluti .....℥ j
Tincturæ nucis vomicæ .....3 iv
Tincturæ gentianæ compositæ q. s. ad ℥ iv
Misce.
Sig.: Teaspoonful after meals.

Or:

℞ Creosoti .....♏ iv
Bismuthi subcarbonatis .....3 j
Aquæ calcis .....q. s. ad ℥ j
Misce.
Sig.: Teaspoonful every half hour.

Catarrh of bile duct use:

℞ Sodii salicylatis .....3 iv
Ammonii muriatici .....℥ j
Aquæ menthæ piperitæ ....q. s. ad ℥ vj
Misce.
Sig.: Dessertspoonful after meals.

Or:

℞ Fel bovis .....gr. xxx
Salolis .....3 ij
Misce et fiant capsulæ No. XII.
Sig.: Capsule three hours after meals.

Or:

℞ Extracti aloes .....3 ss
Sodii bicarbonatis .....3 j
Extracti taraxaci .....q. s
Misce et fiant pilulæ No. LX.
Sig.: 2 pills night and morning. (Catarrhal.)

Or:

℞ Succi taraxaci .....℥ ij
Sodii bicarbonatis .....3 vj
Tincturæ rhei .....3 vj
Infusi gentianæ .....q. s. ad ℥ xij
Misce et fiat misturæ.
Sig.: Tablespoonful three times daily. (Catarrhal.)

Urotropin gr. v–gr. vj three times a day should be administered for its power over any inflammatory condition in the gallbladder. Sodium salicylate in 5-grain doses every four hours also has a beneficial influence on the consistency of the bile. For the itching use warm baths, or pilocarpin, given hypodermatically gr. $\frac{1}{12}$–gr. $\frac{1}{6}$, has been highly recommended. The chilling of the skin must be prevented by warm clothing. In chronic cases dilute nitrohydrochloric acid in 20-minim doses in half an ounce of the infusion of calumba an hour before meals is often used. Silver nitrate gr. ¼ three times daily over long period is highly spoken of, but should be used cautiously.

Portal Cirrhosis (Lænnec's Cirrhosis, Alcoholic Cirrhosis).

Remember that it usually occurs past forty years of age, and frequently with an alcoholic history. The

liver is shrunken; hence dullness on percussion is diminished, especially over the left lobe. In advanced cases nodules may be felt along the borders of the liver.

Remember that jaundice is rare in this form of cirrhosis, but obstruction to the portal vein radicles causes congestion of gastrointestinal mucosa. Hemorrhage is frequent, either from esophageal veins, the stomach, the intestines, or hemorrhoids. Ascites occurs, and the amount of fluid in the abdomen may be so large as to endanger life unless relieved. Dropsy of lower extremities (anasarca) occurs after the ascites, and is caused by the pressure of the ascitic fluid upon the large veins.

Remember that in the nutmeg liver, due to cardiac lesion, the anasarca precedes the ascites and is due to failing cardiac force.

Remember that in portal cirrhosis the abdominal veins are distended, due to an attempt to establish collateral circulation.

Remember that nutrition suffers, urea excretion is less, and albumin is usually found in the urine.

Always make a pelvic examination in women, so as to exclude an ovarian cyst.

Treatment.

Alcohol in any form must be absolutely prohibited. Do not prescribe tinctures in the treatment. All spices and irritants must be excluded.

The diet must be plain and simple, easy to digest,

and nutritious. At the beginning of treatment an exclusive milk diet is best. Vegetables may be added; always use those containing least amount of starch. Later white meats may be allowed. Complete rest and plenty of fresh air is necessary. Bowels should be kept open by salines or calomel. Avoid drastic purgatives; rhubarb, senna, cascara, or cream of tartar may be used.

If hematemesis occurs, rest in bed and treatment outlined under that head should be followed.

Remember that diarrhea in these cases is often beneficial, and do not be too anxious about checking it, for ascites can be relieved by drugs only through the kidneys or bowels.

To increase urination, the following is good:

℞ Hydrargyri chloridi mitis,
Pulveris digitalis,
Pulveris scillæ .....āā gr. vj
Misce et fiant pilulæ No. VI.
Sig.: Pill three times daily.

Or:

℞ Potassii citratis,
Potassii acetatis .....āā ʒ iiss
Spiritus ætheris nitrosi .....ʒ iv
Liquoris ammonii acetatis .....ʒ ij
Tincturæ digitalis ..... ♏ lxxx
Syrupi acidi citrici .....q. s. ad ʒ iv
Misce.
Sig.: Dessertspoonful four times daily.

To purge, use:

℞ Elaterini .....gr. j
Pulveris glycyrrhizæ .....q. s.
Misce et fiant pilulæ No. VIII.
Sig.: 1 pill every four hours until free catharsis.

Apocynum cannabinum is an excellent drug. Specific tincture (Lloyd) is generally used in doses of 2 to 3 minims every three hours; often called the vegetable trochar. The iodids and ammonium chlorid are thought by some to be beneficial.

℞ Ammonii iodidi .....3 j
Tincturæ cardamomi compositæ ..3 iv
Aquæ menthæ piperitæ ....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful before meals.

Or:

℞ Hydrargyri perchloridi .....gr. j
Ammonii chloridi .....3 ij
Syrupi tolutani .....℥ j
Aquæ .....q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful three times daily.

Ascites should be relieved by paracentesis. This is by far the safest course, and, with very ordinary care and cleanliness, is practically harmless. Don't wait for a large accumulation of fluid, so that respiration, digestion, and cardiac contractions are interfered with. Tonics should be used, and of these none are better than the following:

℞ Elixiris ferri, quininæ et strychninæ ℥ ij
Sig.: Dessertspoonful after meals.

It should be remembered that each dose contains ⅟₅₀ grain of strychnin.

Surgery offers no better result than medicine in these cases. Collateral circulation will relieve portal congestion, but throws products directly into the systemic circulation that should first be modified by specific action of liver.

Biliary Cirrhosis.

Remember that in this form of cirrhosis there is no ascites, but chronic jaundice and an enlarged spleen. It occurs in early adult life. Heredity is a factor, and many cases are on record of families developing this condition. In many of the specific fevers, as scarlatina and typhoid, it develops. Pyogenic cocci have been found in many cases; hence it is probably of toxic origin.

Remember that this occurs between the twentieth and thirty-fifth years; there is no alcoholic history. Chronic icterus without ascites, with bile pigments in the urine. The stools are of normal color, and the liver and spleen are enlarged. These are the characteristics of Hanot's cirrhosis.

Remember that the onset is announced by fever, anorexia, pain and dragging in hepatic region, with swelling of liver and spleen. The fever subsides, the patient feels well, but the liver and spleen remain large. These acute exacerbations occur periodically. Hemorrhage is very rare.

Remember that it is rare to find jaundice in portal cirrhosis, while ascites is common.

The presence of gallstone causes attack of colic, in which the pain is severe and agonizing, but the spleen is not enlarged, the jaundice is deeper, and the stools are clay-colored.

Malignant disease of the liver runs a much shorter course; there is great wasting and frequent occurrence of complete obstruction, with jaundice. The

spleen is not enlarged. Cancer of the liver occurs in advanced life.

Remember that jaundice begins early and gradually deepens in contradistinction to portal cirrhosis. The liver is also enlarged.

Treatment.

Patient should lead a quiet life, with regulated exercise. During crisis of the disease he should be confined to the bed. Must avoid fatigue and exposure to cold.

Diet must be simple, nutritious, and easily digested. Should contain no stimulating substances. During crisis an exclusive milk diet is best. Bowels must be kept open, and salines are the best. Calomel gr. $\frac{1}{10}$–gr. $\frac{1}{2}$ every three hours for three days or longer is highly recommended. Salol gr. v–gr. x after meals is indicated in offensive stools. The saline mineral waters are allowable. Give glass before breakfast and give it hot.

Abscess of the Liver.

Remember that some cases can be diagnosed with certainty, some probably, and in some the diagnosis is impossible.

Make it a rule, which should never be broken, to make a positive diagnosis of liver abscess only when a source for the formation of pus has been demonstrated or can be surmised with a great degree of probability.

Always pay special attention to inflammations in the region of the portal vein—gastric ulcer, appendicitis, dysentery, purulent hemorrhoids.

Remember that it may follow wounds, especially of bones of the head or of body; gallstones, pulmonary gangrene, endocarditis.

Remember that the presence of fever narrows the diagnosis to hepatic abscess and acute yellow atrophy. Fever is very rare in carcinoma.

Remember that the liver is usually enlarged, and it is most marked in the right lobe; in contradistinction to all other enlargements, it is upward. It is most pronounced in midaxillary line on percussion, and is usually normal at the vertebral column and at the midsternal and parasternal lines. While there is some icterus present, marked jaundice is rare. There is usually pain, but the intensity varies, and the liver is painful on palpation, especially so over certain areas, probably corresponding to the abscess area or to circumscribed peritonitis caused by the abscess.

Remember that the **spleen is never enlarged,** except where the abscess is caused by pylephlebitis or pyemia.

Remember that some cases closely resemble malaria. The fever intermits, and the patient has chills and sweats.

Remember in malaria the presence of the plasmodium in the blood and the enlarged, hard spleen, and that quinin properly administered **invariably** effects a cure.

In right side pleuritic exudate the area of dullness, spoken of as characteristic of liver abscess, is absent, and a dislocation of the heart to the left is present.

Remember that the evidence obtained by puncturing the liver with the needle is conclusive if the needle enters the abscess.

Treatment.

Pyemic abscess and suppurative pylephlebitis are invariably fatal, and surgical intervention is not indicated. Abscess following dysentery is usually single, and surgery offers the best results—practically the only hope. If the abscess ruptures into the pleura and the patient cough up pus, an operation is not indicated. There is no drug that can stop or modify it in any way after the onset. The best treatment is preventive.

Acute Yellow Atrophy.

Fortunately this fatal ailment is rare.

Remember that pregnancy is an etiologic factor in nearly one-half of the reported cases.

Remember that it may occur in the course of biliary cirrhosis.

The onset is deceptive, and is usually announced by gastroduodenal catarrh, accompanied by slight icterus, but soon headache, delirium, trembling of the muscles, vomiting, and deepening of the icterus sets in.

Coma may develop early and deepens until death, or it may develop later.

Urinalysis shows bile pigments, tube casts, with marked reduction of urea excreted. Leucin and tyrosin, either one or both, are usually, but not always, present. The stools are clay-colored.

A rapid reduction in the size of the liver, usually most pronounced in the left lobe, and, as a rule, the afebrile course following the initial elevation of temperature, confirms the diagnosis.

Treatment.

The disease is invariably fatal. Being of a toxic nature, the channels of elimination should be stimulated. Saline solution intravenously and free catharsis. Gastric sedatives, as bismuth subnitrate, may be used to allay the vomiting. We are powerless to check its progress.

Cancer of the Liver.

Remember that here, as elsewhere in the body, cancer, as a rule, occurs in those past midlife—at that period where reconstructive changes fall below the call of the tissue cells.

The secondary cancer is more common than the primary, but, unless the seat of the primary cancer can be located—as in the uterus, rectum, or breast—it is impossible to make a differential diagnosis.

Remember that cancer may be one large tumor, when the liver will be large, but smooth; or it may be of the nodular form, when nodules can be felt over lower border of the liver, or at times even seen.

Always look for enlarged lymph glands in the axilla, inguinal region, or beneath the skin of the abdomen in suspected cases.

Remember that the liver dullness is increased, but that it is downward and toward the umbilicus, while the upper border remains normal.

Palpation shows the consistence of the liver to be hard, while protuberances may be felt. Emaciation and loss of strength is progressive.

Remember that the enlargement of the liver is progressive, and the lower border may eventually reach to the umbilicus.

Remember that the spleen, as a rule, is **not** enlarged.

Ascites and icterus are produced by pressure of the tumor, and both may be extreme or slight. The skin is dry, wrinkled, and has a muddy color. Fever may be present, and be of intermittent or remittent type.

Remember that cancer of the liver kills in from three to fifteen months.

Treatment.

The treatment is palliative. There is no therapeutic measure that offers much hope. Surgeons have operated on a few early cases with fair results, but this therapeutic measure has not been used often enough to form a basis from which to draw conclusions.

CHAPTER IV.

DISEASES OF THE GALLBLADDER.

Gallstones.

Remember that stones may remain in the gallbladder indefinitely without causing any symptoms. The symptoms are caused by an attempt to force the stones through the ducts.

Remember that bacteria produce gallstones, especially the typhoid bacilli, and these germs have been found in the gallbladder seven years after an attack.

Remember that catarrhal inflammation of the mucosa of the bladder or hepatic duct lays the foundation for gallstones.

Remember that jaundice will not be a symptom if the stone lodges in the cystic duct. A plugging of the common duct causes atrophy of the gallbladder—just the opposite of what would be expected.

Remember that an attack of gallstone colic is abrupt in onset, and is announced by a sudden seizure of severe, agonizing pain in the right hypochondriac region. It radiates to the right shoulder, arm, lower thoracic regions, or it may be referred to the epigastric region. Rigors and rise of temperature usually follow. Vomiting and profuse sweating occur. The vomiting often mitigates the pain, and may thus lead to an error in diagnosis. The pulse

becomes weak and rapid, and the patient may collapse.

Tenderness over the area of the gallbladder is found. **Friction sound can** in many cases be heard; in almost all cases the **thrill** can be **felt** on palpation.

Remember that the pain in gastralgia is relieved by pressure, and usually terminates suddenly by eructations and the voiding of a large quantity of urine.

The pain of peptic ulcer is more constant, and is decidedly more directly influenced by taking of food. Hematemesis occurs in the course of the disease, but jaundice never.

Treatment.

Like appendicitis, the treatment naturally divides itself into the treatment of acute attack of colic and treatment during the interval.

Gallstone Colic. Two things are necessary—first, to relieve the spasmodic contraction of the wall of the duct, and, second, to relieve the pain.

Atropin sulphate gr. $\frac{1}{40}$ hypodermatically, to be repeated in one hour, is the most powerful means at our command to relieve spasmodic contraction. If two doses do not affect, it is not wise to administer more atropin because of danger of poisoning the patient. Put the patient into a hot-water bath and keep him there half an hour. The heat relieves pain and assists in relaxing the patient.

Morphin is indicated if no relief by the above

treatment is obtained in one or two hours. Give gr. ¼–gr. ss hypodermatically.

Chloroform inhalations may be used in the place of morphin.

Yeo insists on giving patient a tumblerful of very hot water to sip in which is dissolved 1 dram of sodium salicylate and 2 scruples of sodium bicarbonate, even though the patient vomits the first few mouthfuls swallowed.

There is no drug that will dissolve the stones.

Treatment in Interval.

Olive oil is thought by some to assist in passing stones by acting as a solvent.

℞ Olei olivæ ..... ℥ vis
Spiritus vini gallici ..... ℥ v
Mentholis ..... gr. iij
Vitelli ovi ..... ℥ j
Misce et fiat emulsio.
Sig.: To be taken within one hour, one-half at a time.

Glycerin is used by many. One ounce a day, with lemon juice, is given. Other combinations may be used, as:

℞ Sodii salicylatis ..... ℥ iiss
Aquæ menthæ piperitæ ..... ℥ iv
Misce.
Sig.: Dessertspoonful three or four times a day, preferably after meals.

Or:

℞ Sodii succinatis ..... ℈ iv
Aquæ ..... ℥ j
Syrupi aurantii ..... q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful before eating.

Operation should be advised in repeated attacks of gallstone colic, a distended gallbladder associated with attacks of pain or with fever, and when a stone is permanently lodged in the common duct. It is best not to defer operation too long, as chronic icterus of long duration greatly increases the dangers of operation. Probably the time will come when the same rule governing operations in appendicitis will be followed in gallstone affections.

Suppurative Cholangeitis.

Remember that gallstones are the most frequent cause. However, typhoid, grip, cancer of the bile ducts, and hydatid disease may be the cause.

Remember that the infection may be universal, extending to practically all the bile ducts, or it may be limited to a few of the larger ones.

Remember that there is a progressive hepatic enlargement, so that the tumor may reach the umbilicus.

Remember that the enlarged liver is uniform, smooth, and tender to pressure.

Remember that pain is variable, and may be absent. It is usually present when due to gallstones, and it will then be paroxysmal and severe, and each attack of pain may be accompanied by chill and the jaundice be intensified.

Remember that icterus is always present, and is persistent and intense.

Remember that symptoms of an active infection

are present, such as fever, rigors, and profuse perspiration. There is rapid loss of flesh and strength.

Remember that the pancreatic ducts are frequently involved because of proximity, and there follows a pancreatic abscess.

Remember that the gallbladder is usually distended and palpable. The blood count shows leucocytosis.

Remember that malaria shows the plasmodium in the blood and the absence of leucocytosis, while in suppurative cholangeitis the paroxysms of chill, fever, and sweats lack the regular periodicity seen in malaria.

Treatment.

The treatment is entirely surgical. For the proper operation, consult works on surgery. The physician should advise operation, providing the patient is in a condition to endure it.

CHAPTER V.

DISEASES OF THE PANCREAS AND PERITONEUM.

Hemorrhage.

This is of great importance from the medico-legal point of view.

Remember that the onset is sudden, and the patient may be pursuing his usual occupation when he is seized suddenly with a severe epigastric pain, which steadily increases in severity. At the onset of the pain nausea and vomiting set in. The vomiting is obstinate, consisting at first of stomach contents and later is bilious, but **never fecal.**

Remember that this condition is nearly always mistaken for intestinal obstruction, but the absence of fecal vomiting and the appearance of a palpable swelling in the epigastric region would exclude obstructions.

The patient becomes restless, surface cold and clammy, with a feeble, rapid, thready pulse. Temperature is normal or subnormal, and the patient loses consciousness, which terminates fatally in from twenty-four to forty-eight hours.

Treatment.

For loss of the blood use saline solution. Relieve pain and distress with morphin and atropin. Use

strychnin for heart depression, and do a laparotomy as soon as the patient can be prepared. The collapse and great prostration makes it extremely hard to get a surgeon to operate.

Acute Pancreatitis.

Remember that the onset is sudden in stout adult males with an alcoholic or gallstone history.

Remember that the initial symptoms are:

1. Epigastric pain, usually severe and agonizing, and is diffused over the epigastric region.

2. Tenderness, usually over the head of the pancreas, but may move to the left over the body or tail. The epigastric region is swollen and the recti are tense.

3. Collapse occurs early, and is an important sign; often severe, and threatens immediate death. The pulse is rapid and there may be cyanosis.

4. Vomiting is severe and obstinate. Food, mucus, and, at times, blood is brought up.

5. Constipation is present, and thus simulating intestinal obstruction, but remember that flatus is passed.

Remember that intestinal obstruction is less severe in onset; there is distention of the abdomen, which is **very** rarely confined to epigastric region, and the peristaltic waves may be seen above the obstruction, while blood and mucus will be found in the stool if the obstruction is not complete.

Treatment.

Use morphin and atropin for the pain. Feed per rectum. Use stimulants freely in collapse. Operation is indicated if the collapse is not too profound.

Chronic Pancreatitis.

Remember that this occurs most frequently in the fourth and fifth decades of life, at the time when malignancy may be expected. **The onset** is gradual, beginning as gradual emaciation and weakness. Anorexia, and in some a loathing of food.

Remember that the examination of feces reveals large amount of pale-colored passages, resembling the stools of icterus. Fat and muscle fibers of undigested meat are found.

Remember that recurrent attacks of epigastric pain, with bilious vomiting, may occur. The pain is referred to a point a little above the umbilicus, but does not radiate.

Jaundice may occur, but it gradually deepens, and the gallbladder is distended.

Palpation reveals a hard tumor over the head of the pancreas, which may be at times mistaken for tumor of the gland.

Remember that in gallstones the onset is abrupt, with severe colicky pains, that radiate to the shoulder, and jaundice, when present, is not so deep, while the gallbladder shrinks and is not palpable.

Remember that glycosuria is present only in those cases where the islands of Langerhans are in-

volved, but indican in the urine is decreased because of the incomplete digestion of the proteids of the food.

TREATMENT.

In severe, long-standing cases, **only** operation will give relief. Opening and draining the gall-bladder or anastomosis is indicated. Where icterus is present, calcium lactate gr. xv–3 j three times a day before operation increases the coagulability of the blood. Feeding extract of the pancreas is thought by some to be helpful in assisting in digestion of proteids and assimilation of fats.

Pancreatic Cysts.

Cysts are most often found between the twentieth and fortieth years.

Remember that most cysts are due either to trauma, inflammation, or impacted calculi.

Remember that palpation is the method of diagnosing cysts, and reveals a deep-seated, retro-peritoneal swelling located in the epigastric region, usually in the median line or slightly to the left. Inflation of the stomach and colon shows the tumor lying between them. **In form** it is round, oval, and smooth.

Remember that the tumor is immobile; has no respiratory movements, and very little, if any, on palpation.

Jaundice occurs only when a large cyst presses on the duct and is never deep. Vomiting and con-

stipation, when present, is due to the same cause. Fluctuation may be obtained in large cysts.

Remember that fatty stools, containing undigested muscle fibers, are not found in all cases, but are very significant when they occur. Glycosuria may be present when large portion of the gland is involved.

Always obtain a complete history in large abdominal cysts, and make a thorough physical examination with patient in Trendelenburg position in differentiating pancreatic and ovarian cysts.

Remember that tumor of transverse colon is much more superficial in location, and that pancreatic cysts have a very remarkable feature of transitory disappearance.

Treatment.

The treatment is entirely surgical. Opening and draining the cyst is much the better, as it gives a much lower death rate.

Carcinoma of the Pancreas.

When the growth starts in the head of the pancreas, sooner or later the duct is completely obstructed with dilatation and retention cysts in tail of the organ.

Remember that the common duct passes through the head of the pancreas or just behind it, and the hardened tumor eventually produces obstruction of the common duct, causing distention of the gall-

bladder, enlargement of the liver, and a **severe, progressive,** and **permanent jaundice.**

Pressure on the portal vein causes **ascites,** which is often pronounced, and often **edema** of the legs is caused by pressure on the cava.

The bowels are irregular, and the striking features of the feces are their pale, soft, bulky, and offensive character and the great excess of fats, due to the lack of pancreatic ferments.

Remember that the rapid emaciation, the loss of strength, and anorexia, with dyspeptic symptoms, are present.

Remember that the intense, permanent jaundice, with **little or no pain,** and **distended, palpable gallbladder** exclude **biliary stones.**

Remember that in interstitial pancreatitis the history is much longer, emaciation less marked, pain and tenderness above the umbilicus more common. In many cases a **hard, immobile** tumor is palpable in the epigastrium.

Treatment.

Treatment is palliative. While the distended gallbladder may be opened and drained, or complete extirpation of the gland performed, it is doubtful whether permanent recovery follows. Morphin should be used if there be pain. Rectal feeding should be followed to keep up the strength as long as possible.

Acute Peritonitis.

Remember that Bright's disease, gout, and arteriosclerosis are often terminated by acute peritonitis.

Always get a careful history of previous condition, as often a clew may be had of the starting point.

Remember that inflammation of the peritoneum is secondary to inflammation of contained viscera or trauma.

Remember that the mental condition of the patient will modify the symptoms of onset.

Remember that **shock** is a conspicuous symptom, announcing the onset of peritonitis, and is due either to perforation or it may occur later from toxemia.

Remember that the chief features of the clinical picture are pain, tenderness, rigidity, vomiting, pulse, attitude, and facies.

Remember that, while the pain is usually greatest near the navel, yet the primary lesion may alter it some—as in gastric perforation the pain may be epigastric and in the back.

Remember that the important thing about the **tenderness** is that it is **deep** and not superficial. The muscular rigidity is the same as found over an inflamed appendix, except it is found over all the abdominal muscles.

Remember that the pulse is rapid, small, and hard—the wiry pulse—occurring more often in this

than any other affection. The patient lies on his back, with limbs drawn up and shoulders elevated.

Early, the abdomen may be **retracted**—the scaphoid—but later is **distended** and **tympanitic.**

Remember that the facies, Hippocrates' description, can not be improved—"a sharp nose, hollow eyes, collapsed temples; the ears cold, contracted, and their lobes turned out; the skin about the forehead rough, distended, and parched; the color of the whole face being brown, black, livid, or lead-colored." Vomiting occurs early, and soon becomes bilious or even fecal.

Respirations are shallow and of costal type. The diaphragm is high, liver and splenic dullness disappears, and the apex beat of heart pushed up into fourth costal space.

Remember that hysterical patients have so simulated peritonitis as to deceive the very elect.

Remember that in **enterocolitis** the pain is **colicky**; there is diarrhea and tenesmus; there is **collapse**, but it is due to rapid loss of water and toxemia.

Remember that in **intestinal obstruction** there is complete, sudden stoppage of the bowels—no flatus passing; or there are bloody stools (depending on the cause); an immovable, tense mass at the point of obstruction, which may be seen or felt.

Remember that tuberculosis must not be forgotten as a causative factor, and that usually symptoms of tuberculosis are found.

Treatment.

Only surgical treatment is of any value. Open the abdomen; repair the cause if possible; drain; put the patient in Fowler's semi-erect posture, with the continuous flow into the rectum of hot saline solution (page 29). This procedure is now saving three-fourths of these patients, which was formerly the death rate.

Diet. Allow nothing by the mouth. Add panopepton to the salt solution used in the continuous flow.

Never be guilty of willingly treating acute peritonitis medicinally. There is no valid reason for doing so, and the mortality is very high. Opium, or any of its derivatives, gives only a false sense of relief, and the saline treatment is no better.

CHAPTER VI.

DISEASES OF THE KIDNEYS AND BLADDER.

Movable Kidney.

Remember that this is decidedly more common in women and frequent in hysterical patients.

Remember that the difference between a palpable, movable, and floating kidney is one of degree.

Remember that palpation is the only way a diagnosis can be made. Use the following procedure:

Put the patient in the dorsal position, with the head moderately low and the abdominal muscles relaxed. Place the left hand in the lumbar region behind the eleventh and twelfth ribs. Put the right hand in the hypochondriac region in the nipple line, just under the edge of the liver. Gently press the two hands together, when a firm, round body may be detected just below the ribs—this is **a palpable kidney.**

Have the patient take a deep breath, when the fingers may be slipped up over the kidney, but the organ can not be pushed below the level of the navel—**a movable kidney.**

The kidney may be grasped with the hand and moved to any part of the abdomen, or even into the pelvis—**a floating kidney.**

Remember that in a large majority of cases there

are no symptoms, and the condition is detected accidentally, but it is well not to inform the patient.

Remember that dyspeptic symptoms in a neurotic woman that do not yield to ordinary treatment are probably due to a displaced kidney.

Jaundice, slight and of short duration, but recurring frequently, is probably due to nephroptosis. In a floating kidney the kinking of the vessels by a twisting of the kidney causes abdominal pain, chills, nausea, vomiting, fever, and collapse. The amount of urine may be decreased, dark, and contain albumin, pus, and blood, and the kidney may be tender and swollen. The skin is moist and cold; at the close of the attack there may be a copious amount of pale urine. Acute hydronephrosis results from strangulation of the ureter. Worry and anxiety may cause a loss in weight.

Treatment.

The patient should be confined to bed and forced feeding resorted to. The object of this is twofold—first, it is the best method of treatment for the neuroses coexisting, and, second, by putting on fat the patient furnishes additional support for the displaced kidney. The kidney should be held in its normal place by a well-fitting bandage applied to the abdomen, with or without a pad over the displaced kidney.

The following advice from Dr. Potter should be heeded: "A properly-fitting bandage is not easy

to secure, especially for very thin patients. I rarely use a pad, but attempt to secure the retention of the kidney by a well-fitting, long, low corset, or, in more difficult cases, by an elastic bandage encircling and sustaining the lower two-thirds of the abdomen. The physician must carefully examine such contrivances after being applied and worn by the patient. No case should be operated upon, in my judgment, until every possible medical measure has been thoroughly tried."

The only medicine indicated is a tonic when the appetite fails.

Acute Nephritis.

Remember that this condition may complicate any of the infectious diseases, and frequently follows typhoid and scarlatina.

Always inquire about medicinal substances used, as often the use of potassium chlorate tablets, frequently used for sore throats, or turpentine, will cause acute nephritis.

Remember that there are two classes of cases—one class where the dropsy is extreme, as seen in scarlatinal form, while in the other class there is little or no dropsy.

Remember that acute Bright's disease may exist, the anasarca be extreme, but the urine contain no albumin, or only a trace.

Remember uremia may be the first symptom, but it usually occurs later.

Always examine the urine. It will be dark and of a smoky color; high specific gravity; small in amount, and contain albumin, tube casts, and often blood cells.

Remember that pleural effusions may be large and the lungs edematous, although dropsy is not extensive.

Remember that anemia is a prominent and early sign, and gives a peculiar, pale complexion.

Remember that every urine containing abumin is not a case of acute nephritis.

A peculiarity of the dropsy in acute nephritis is its irregularity of distribution, and does not always gravitate according to the posture of the patient.

Always examine frequently the urine in pregnancy, especially in cases complaining of occipital headache, or swelling of the ankles, or edema of face.

Remember that it is in syphilitic nephritis that large quantities of albumin is found.

Treatment.

Often it is easy to discover the etiologic factor, which should then be treated rather than the nephritis. In cases due to malaria, quinin is indicated, while in that form occurring in the secondary stage of syphilis, mercury will cause a complete and permanent subsidence. The iodids are not so beneficial as they are in the tertiary stage. In typhoid with nephritis, cold baths should not be given on

account of the sudden cooling of the skin, but tepid sponging may be substituted. Care as to medicaments used must be observed, regardless of the cause, in many cases. Drugs causing renal irritation must be abandoned. Some of these are tar, styrax, naphthalin, phenol, oil of turpentine, potassic chlorate, and cantharides.

While salicylic acid and its derivatives cause renal irritation, they should be used in the treatment of a causative articular rheumatism.

Symptomatic Treatment. The patient should be in bed and kept there until all traces of the disease have disappeared. Counterirritation over lumbar area will relieve renal congestion. Cantharides or mustard plaster should not be used because of renal irritation. Cupping, wet or dry, leeches, or the application of the actual cautery applied to Petit's triangle, as the network of veins here communicate direct with the perirenal veins, should be followed. In severe cases of renal congestion, where there is marked diminution of urine, many blood cells, and severe lumbar pain, headache, and vomiting, the application of leeches every other day and on alternate days, dry cupping morning and night, until the severe symptoms have subsided, afford relief. The quickest and probably the best way of relieving the congestion is by venesection performed on the lower extremity. The vena pediæa may be opened and 10 ounces of blood withdrawn.

Diet is of supreme importance. All meats and

preparations made from meat must be excluded. Strictly milk diet is best. Buttermilk, gruels made of arrow-root, oatmeal, barley-water, butter, crackers, and cream may be allowed. All condiments and alcohol should be forbidden. The diet should be salt (sodium chlorid), free, especially if there be much dropsy.

Cases due to bacterial toxin should be given plenty of water to dilute the poison and reduce the renal irritation.

Diuretics. Alkaline mineral waters should be used freely. When they fail to increase urinary secretion, some of the following may be used to advantage:

Caffein is excellent because it is cardiac as well as kidney stimulant. Never give over 10 grains daily, as 15 grains will cause albuminuria.

℞ Caffein,
Sodii benzoatis .....āā gr. iij
Misce et fiat capsula No. I. Dentur tales capsulæ No. XV.
Sig.: Capsule three times a day.

The best form is probably the double salt:

℞ Caffein-sodii salicylatis .....gr. iij
Sig.: One such dose three times a day.

Potassium acetate in large doses is also a good diuretic:

℞ Potassii acetatis .....ʒ iv–ʒ v
Syrupi rubi idæi .....ʒ ss
Aquæ destillatæ .....q. s. ad ʒ vj
Misce.
Tablespoonful every two hours.

In the early stage the following is a good diuretic and also equalizes the circulation:

℞ Tincturæ aconiti .....m xij
Spiritus ætheris nitrosi .....℥ vj
Solutio potassii citratis .....℥ ij
Syrupi tolutani .....q. s. ad ℥ iij
Misce et fiat solutio.
Sig.: Teaspoonful every two hours.

Or:

℞ Potassii citratis .....℥ ss
Infusi digitalis .....℥ j
Aquæ .....℥ j
Misce.
Sig.: Dessertspoonful every three hours.

Where the heart needs stimulating, the following is excellent:

℞ Tincturæ digitalis .....℥ v
Vini scillæ .....℥ iss
Spiritus ætheris nitrosi .....℥ ij
Misce.
Sig.: Teaspoonful every three or four hours.

Diaphoretics. To increase the activity of the skin is to lessen the tension on the kidney. Hot baths, and have the patient sleep between blankets dressed in light flannel gown. Pilocarpin can be used with safety only in a selected number of cases. It should never be given to children. It is best administered hypodermatically. It is better always to give minimum dose—say, gr. $\frac{1}{15}$—and repeat in one hour, than to give one dose of gr. $\frac{1}{5}$.

Purging should be moderate, but is of great benefit. A good rule is, "purge one day and sweat the next."

A very excellent cathartic is the following:

℞ Pulveris jalapæ compositæ,
Potassii bitartratis .....āā 3 ss–3 j
Misce et fiat pulvere No. I. Dentur tales No. X.
Sig.: 1 powder every other morning.

Chronic Parenchymatous Nephritis.

Remember that the urine for the twenty-four hours is diminished in quantity, has a dark, smoky color, and is turbid from the presence of urates. The specific gravity is high, and on standing a heavy sediment is deposited. Albumin is always present, and is more abundant in day than night urine. The total amount of solids—as urea, phosphates, and chlorids—is reduced. Hyaline, granular, fatty, and epithelial casts are abundant.

Remember that edema is frequent and often the first symptom to attract attention. Occurs first about the eyes, and seen only in the morning, but later it is permanent and becomes general. The patient's appearance is very suggestive—puffy eyes, pale and swollen cheeks, dull expression, distended abdomen, and shapeless wrists and ankles.

Remember that anemia is a prominent and pronounced symptom in this form of nephritis. The pulse small, soft, and rapid. The apex beat weak, indicating dilatation.

Remember that the first manifestation of long existing trouble may be epileptiform seizures, or an attack of uremic dyspnea simulating asthma.

Remember that a general failure of health,

shown by loss of energy, easily fatigued, loss of appetite with digestive disturbances, is frequently found early in this condition.

Remember that vomiting occurs often in the course of renal trouble, and usually caused at sight of or on taking food. The nausea accompanying the vomiting is intense.

Remember the examination of the eyes, as albuminuria retinitis is one of the most characteristic features of this form of renal trouble.

Remember that in many asthmatic seizures the trouble is caused by a lesion of the kidney, and the albuminuria is causative and not dependent upon the asthma.

Treatment.

Rest in bed is best. This should be continued for as long a period of time as possible, as it reduces albuminuria and reduces waste products thrown upon the kidneys for excretion. The patient should be dressed in canton flannel, and lie between blankets, so that the skin may be kept active.

Diet. Nothing should be allowed that increases the work of the kidneys. Milk diet is excellent, but it is impossible to administer enough to keep up the body nutrition. Two to three pints of milk during the day, to which cream has been added, is sufficient. Calcium carbonate gr. v–gr. x, administered with the milk, precipitates the phosphates and thus prevents their being absorbed and irritating the

kidneys. Meat, as veal, mutton (well cooked), and beef, may be allowed restricted. Carbohydrates and sugar must furnish the bulk of nutrition. Potatoes, rice, butter, sugar, eggs (cooked), olive oil, and cod-liver oil are all excellent in varying the diet. A moderate amount of all fresh fruits, except cranberries, is allowable. Onions, garlic, tomatoes, radishes, asparagus, and celery must be forbidden, while beans, peas, turnips, carrots, lettuce, and cauliflower should be given.

Salt. Most nephritics eliminate sodium chloride imperfectly, so that much of it is retained. Sodium chloride controls osmosis in the economy. When retained in the blood, it becomes hypertonic and less water is excreted by the skin, lungs, and kidneys. Dropsy then begins or increases, as does albuminuria; hence a diet free, or as near that as possible, will lessen both hydrops and the albumin.

Water. Care must be exercised in the amount of water taken. An excessive quantity, thus engorging the blood and lymph, and increasing the work of the heart, is just as harmful as too little given. About three pints are an average amount to be given in twenty-four hours.

Baths. Lukewarm or hot baths three or four times a week, followed by a light sweat, are advisable to keep up the activity of the skin. Where atheroma exists, care should be taken.

Clothing. The feet must be well protected, and patient should wear woolen underwear. A flannel band over the loins, in addition, is often beneficial.

The Bowels. These must be kept open. If constipated, saline cathartics should be used. The compound jalap powder and Rochelle or Epsom salts are probably best. The anemia is to be combated by using iron. The syrup of the iodid of iron or the tincture of the chlorid is best; best given half an hour after meals.

Diuretics. Most of them should not be used. Cream of tartar 3 j as a refrigerant drink or potassium citrate gr. xx–gr. xxv are the only safe ones. Liquoris ferri et ammonii acetatis 3 j–3 ij (Basham's mixture) may be given for its tonic as well as diuretic effect.

Chronic Interstitial Nephritis.

Remember that this is the lesion occurring in the aged and is intimately connected with arteriosclerosis.

Remember that the urine is greatly increased in quantity and is voided so often, especially at night, that the patient usually seeks relief of so troublesome a symptom.

Always examine such cases for enlarged prostate.

Remember that there are three cardinal findings in this condition—**cardiovascular, urinary,** and **retinal**—and he who invariably examines the **urine** and **heart** in every instance rarely fails in his diagnosis.

Remember that the increased urine is pale in color and low in specific gravity, there is a reduction

of solids, and albumin is found only in trace and may be absent at times.

Remember that **persistent** low specific gravity is one of the constant and important features of this condition; therefore frequent urinary examinations should be made.

Remember that the hypertrophy of the heart causes a displacement of the apex beat downward and to the left, and the impulse is forcible and may be heaving.

Remember that the pulse is not only hard, but the tension is increased, so that it requires considerable pressure to overcome it, and when abolished the vessel below can be rolled under the finger.

Remember that chronic bronchitis, especially in the winter, is common.

Remember that trouble in vision may be the first symptom, and caused most frequently by retinal hemorrhage.

Remember that edema is not common, and when it appears it is due to cardiac failure.

Treatment.

Don't advise the use of large amount of liquids, and it is better to restrict them to two pints per day. Milk diet is indicated only when uremia threatens.

Remember that in this form of nephritis it is more important to watch the heart than the kidneys.

Diuretics should not be used unless there is a

great diminution of quantity of urine or dropsy develops, and then only for a short period of time. At first indication of weakening of heart, administer digitalis, caffein, camphor, or squills until there is cardiac improvement. Drugs should be carefully watched for cumulative action because of slow excretion.

Iodids are excellent in many cases, and are especially indicated in syphilitic nephritis. Some of the cases of syphilitic origin improve under mercury, while others are made worse, but all respond to iodin treatment.

The dress should be flannel, and patient must be careful about catching cold.

Iron is indicated if anemia is present—shown by marked weakness and pallor.

Bowels should be kept open by use of salines, or, perhaps better, by alkaline mineral waters. Calomel purge occasionally is very beneficial.

Skin should be kept active, and this is best done by warm baths.

When the arterial tension is high, it should be relieved because of the danger of hemorrhage. This is best done with **nitroglycerin** carefully administered. Begin by giving 1 minim of a 1-percent solution (gr. $\frac{1}{100}$) three times daily and gradually increase. On the other hand, where the tension is low, as manifested by decreased amount of urine and appearance of dropsy, give strychnin or digitalis. The latter is best given as an infusion.

Worry and anxiety must be forbidden, and patient live a quiet life.

Uremia.

Remember that uremia may exist in a latent form. The mind is clear and pupils are contracted, muscular twitchings and vomiting occur, and the temperature is subnormal.

Remember that coma always accompanies convulsions, but it may develop gradually without convulsions.

Remember that all cases of intractable headache, either occipital or low down in back of the neck, call for urinalysis, that threatened uremia may not be overlooked.

Remember that muscular cramp, particularly at night in the calves, twitching, monoplegia or hemiplegia, or tingling sensations in the limbs, call for urinalysis and the elimination of Bright's disease.

Remember that uremic dyspnea may be continuous or paroxysmal, and at times Cheyne-Stokes breathing may be observed. The dyspnea is usually nocturnal, and it is very difficult to differentiate from true asthenia without the precaution of urinary examination.

Remember that cerebral hemorrhage, meningitis, and brain tumors must be excluded in the diagnosis. The hemiplegia is complete and permanent; vomiting, tense pulse, and conjugational deviation of the eyes are present.

In brain tumor may have convulsions, vomiting, headache, vertigo, with hemiplegia or monoplegia, but in uremia these are transitory, while in tumor they are chronic and progressive.

In meningitis, when headache and vomiting are followed by coma without localizing phenomena, and the urine contains albumin, spinal puncture and examination of some of the spinal fluid is the only means of differentiating from uremia.

Remember that uremia may last for several weeks, and patient lie in stupor, with heavily coated, dry tongue, rapid and feeble pulse, and muscular twitchings, suggesting typhoid or miliary tuberculosis.

In miliary tuberculosis the pulmonary signs, with those of associated pleurisy and pericarditis, will differentiate, while Widal reaction of blood, rose spots, enlarged and soft spleen, and peculiar temperature range will assist in correct interpretation of the typhoid condition.

Remember that in **opium poisoning** the pupils are contracted equally, while in uremia they are **not constant.** Examine the eyes for albuminuric retinitis, and urinalysis should be made. The pulse is slow, and respiration and the stupor are profound. In **coma from alcohol** the unconsciousness is not so profound, and heavy pressure on the supraorbital nerve at junction of inner and middle third of orbit at the supraorbital notch will always cause a response. The temperature is subnormal and the

pupils usually dilated. Place no value upon the odor of the breath unless you know the history.

Remember that uremia occurs most frequently in chronic interstitial nephritis, and that the concomitant vascular changes will be of aid in diagnosis.

Treatment.

In an **acute** attack of uremia there is nothing comparable to **venesection**—withdrawing half a pint of blood and replacing the amount by the saline solution by hypodermoclysis. Never used too early, but often too late.

Diaphoretics. Pilocarpin hydrochlorate gr. ⅙–gr. ¼ may be given hypodermatically. If heart is weak, give cardiac stimulant. May be used with hot pack.

Catharsis.

℞ Elaterini ..... gr. ⅓
Sacchari lactis ..... gr. xv
Misce et fiant pulveres No. V.
Sig.: Powder every three hours until free catharsis, then daily.

Or:

℞ Hydrargyri chloridi mitis..... gr. viij
Pulveris jalapæ compositæ ..... ℈ iv
Misce et fiant pulveres No. IV.
Sig.: Powder hourly.

In case of severe vomiting, elaterina hypodermatically gr. ¼₀–gr. ⅒ may be given.

Cardiac Tonics. With decreased blood pressure and small, thready or irregular pulse, heart stimu-

lants to raise pressure within the kidneys is advisable. **Digitalis** is excellent, but its action is delayed, so that in acute cases it must be reinforced by quicker-acting stimulants. Camphor is best, and should be given in large doses—3 ij–3 iij of a 10-per-cent solution in olive oil hypodermatically during the twenty-four hours should be given with the digitalis.

Convulsions may be treated with hypodermic of morphin or inhalations of chloroform. Venesection is often very beneficial in this condition, or:

℞ Chloralis hydrastis .....3 ss
Potassii bromidi .....3 j
Tincturæ veratri veridi .....♏ xxx
Syrupi aurantii florum .....3 iv
Aquæ .....q. s. ad ℥ ij
Misce.
Sig.: Tablespoonful every hour or two as required.

Or:

℞ Pilocarpinæ hydrochloridi .....gr. j
Tincturæ veratri veridi .....♏ xxx
Syrupi tolutani .....3 iv
Aquæ anisi .....q. s. ad ℥ j
Misce.
Sig.: Teaspoonful in water, repeated in two or three hours, as required.

Vomiting. This is frequently persistent and obstinate. The following formulæ will indicate the best line of treatment:

℞ Cerrii oxalitis .....gr. xv
Sacchari lactis .....3 ss
Misce et divide in pulveres No. VI.
Sig.: Powder every three or four hours.

Or:

℞ Hydrargyri chloridi mitis .....gr. j–gr. iij
Cerrii oxalitis .....gr. xx
Sacchari lactis .....gr. xxx
Misce et divide in pulveres No. X.
Sig.: Powder every hour on tongue.

Ingluvin gr. v, administered every two hours, is often good.

℞ Creosoti .....gtt. x
Emulsio amygdalæ .....ʒ iss
Syrupi simplicis .....ʒ iv
Misce et fiat emulsio.
Sig.: Dessertspoonful every four hours.

Lavage of the stomach with water at 105° is excellent and should be tried early.

Diarrhea. Don't be too anxious to check it. This is one of nature's methods of ridding the economy of toxic material.

Uremic Asthma. Spirits of ether gtt. x–gtt. xxx on sugar several times a day. Or:

℞ Extracti valerianæ .....gr. v–gr. x
Dentur tales doses No. XXX. Inclosed in capsule.
Sig.: Capsule four or five times daily.

Diet. In an **acute** attack, starvation or Renon's water diet, one quart to three pints daily, with or without lactose, for two or three days, gives best result.

In **subacute** form a diet similar to that of Bright's disease is best. In **chronic** form the diet varies and depends upon the urinary findings.

Dilute hydrochloric acid, giving from one to three

teaspoonfuls in the twenty-four hours, is excellent, and probably is indicated, as many cases show hypo-acidity. To be given following meals.

Pyelitis.

Remember that the great danger in cystitis is pyelitis by extension along the ureters.

Remember that pain in the back or tenderness on deep pressure over the affected kidney, with pus in the urine and fever of the septic type, are indicative of pyelitis. The pyuria may be intermittent, due to the plugging of the ureter of the affected side. When this occurs, the intermittency excludes cystitis. Coincident with the retention, often a tumor mass may be felt on the affected side.

Remember that the reaction of the urine is usually acid, unless cystitis coexists.

Remember that in cystitis the pain is over the bladder and is made worse in the erect posture.

Remember that painful, frequent micturition and an alkaline urine suggest cystitis.

Remember that in chronic cases of pyelitis, polyuria and a low specific gravity are usual.

Remember that an infection may extend to the ureter from the bladder.

Treatment.

Diet. In the acute cases it should be exclusively milk. The chronic cases should have diet used in nephritis.

Baths. A warm bath should be given two or three times a week, and the patient should be carefully guarded against catching cold.

Congestion is best relieved by applying leeches over Petit's triangle, as the veins of this region communicate with those of the renal capsule. Free catharsis should be employed, both for the congestion and ridding the body of toxins. The vegetable cathartics are best.

Pain may be relieved by hot applications over the affected kidney, or, if severe, by atropin and morphin.

Antiseptics are indicated to combat the infection. Urotropin is best, but benzoic acid or the sodic salt may be used. The action of urotropin is enhanced when it is combined with salol.

℞ Urotropini,
Salolis .....āā ℈ iiiss
Misce. Dentur tales doses No. XXV. Inclosed in capsule.
Sig.: Capsule every three or four hours.

A capsule containing gr. iss–gr. iij of methylene blue may be given three times daily. Gastric disturbances must be watched for.

℞ Acidi benzoici .....gr. ij–gr. v
Fiat tabella No. I. Dentur tales doses No. XX.
Sig.: Tablet every two hours.

Or:

℞ Sodii benzoatis .....ʒ j
Extracti gentianæ .....q. s.
Misce et fiant pilulæ No. XXX.
Sig.: 2 pills every two hours.

Or:

℞ Sodii benzoatis .....3 j
Syrupi rubi idæi,
Aquæ menthæ piperitæ .....āā 3 vj
Misce.
Sig.: Tablespoonful two hours after meals.

Astringents. Lime water, 2 to 3-ounce doses three or four times a day, diluted with an equal quantity of milk, is excellent.

℞ Plumbi acetatis,
Pulveris opii .....āā gr. xxx
Extracti glycyrrhizæ .....q. s.
Misce et fiant pilulæ No. XXX.
Sig.: 1 or 2 pills three or four times daily.

Hydronephrosis.

Remember that this may be congenital, and either unilateral or bilateral. If bilateral, death results in a short time.

Remember that in many cases the obstruction is intermittent, and when the obstruction is relieved there will be a large quantity of urine with the disappearance of the renal tumor.

Remember that when the tumor is of moderate size it may be palpated in the renal region, but those of extreme size may be mistaken for ascites or ovarian cysts.

Aspiration furnishes conclusive evidence. The fluid aspirated will be clear, of low specific gravity, with urea and urinary salts.

Remember that in the history the location of the tumor in the beginning is important, as ovarian

tumors originate in the pelvis. Ovarian tumors are movable, while hydronephrotic tumors are not, unless they occur in a movable kidney.

Treatment.

Cases of intermittent hydronephrosis causing no serious symptoms should be let alone. When the tumor becomes large, aspiration should be done; the needle passed through the flank half way between the crest of the ilium and the last rib. When the tumor recurs, it may be incised and drained. Removal of the kidney should be done only as a last resort. Sometimes the wearing of a pad and bandage following aspiration will prevent refilling.

Nephrolithiasis.

Depending upon the size of the concretion, we have sand, gravel, or stone.

Remember that all stones are due to a deposit upon a framework consisting of albuminous substance and at times epithelial cells.

Pain. Renal stones cause pain. The character of the pain depends upon the location of the stone. Pain, dull in character, is felt in the loin, frequently associated with local tenderness, with the stone in the renal pelvis. Certain movements which shake the body make it worse.

Remember that this dull pain and localized tenderness may be found without any urinary changes.

Remember that **renal colic** is caused by passing of

stone into the ureter. Pain of renal colic is sharp and lancinating, radiating from the renal region along the ureter to the bladder, testis, labia, or urethra. The testicle is retracted. The kidney is sensitive; there is a continuous desire to urinate, but can pass only a few drops of a concentrated, bloody urine full of sediment. The general symptoms are nausea, vomiting, cold perspiration, chills, weak pulse; the dorsal posture is assumed, legs drawn up, and the abdominal wall rigid. The pain is greatest as the stone passes into the bladder, as the caliber of the ureter is smaller at this point. The attack ceases abruptly on the passing of the stone from the ureter, either into the bladder or back into the renal pelvis. After the passage of the stone a profuse discharge of urine follows.

Remember that the absence of hematuria after a renal colic speaks strongly against a diagnosis of renal calculi.

Remember in vesical calculi the pain is concentrated over the bladder, and when it radiates to the flanks it is felt on both sides. The sudden stoppage of the flow in micturition and the positive information obtained by examining the bladder with a stone searcher will assist in differentiating. The x-ray in competent hands is of great assistance, but is not to be absolutely relied upon. While negative finding does not absolutely exclude stone, the percentage of errors is small.

Treatment.

Renal Colic. Prompt immersion in hot bath, 110° to 115°, for half an hour often affords relief, but, if it does not, give while in the bath hypodermic of morphin sulphate gr. ¼–gr. ½ with atropin sulphate gr. $\frac{1}{150}$–gr. $\frac{1}{60}$, and, if it fails to relieve the pain, repeat the morphin in one hour; no relief following this, give inhalations of chloroform to slight anesthesia. It is essential, to further treatment, that careful watch be kept to detect sand or gravel in the urine, so that the kind of stone may be determined—whether uratic, oxalate, or phosphatic. In uratic or oxalate stones the acidity of the urine must be reduced. For this purpose alkalies are given.

The following effervescent powder is good:

℞ Lithii carbonatis .....gr. iv
Sodii bicarbonatis .....gr. v
Misce et fiat pulvere No. I.
No. 1.

℞ Acidi citrici .....gr. viij
No. 2.
Dentur tales doses Nos. 1 and 2 No. X.
Sig.: 1 of each powder in half a glass of water three times daily; drink while effervescing.

Glycerin in large doses is highly recommended in assisting in passage of the stone.

℞ Glycerini,
Succi limonis .....āā ℥ j
Misce.
Sig.: 4 tablespoonfuls daily.

Or put 1 ounce of glycerin into 1 quart of lemonade and give during the day.

℞ Potassii acetatis .....3 iij
Aquæ cinnamomi .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every two or three hours until urine is only slightly acid.

Or:

℞ Lithii citratis .....gr. xx
Sodii citratis .....3 ij
Aquæ .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful in carbonated water every two or three hours until urine is only slightly acid.

Or:

℞ Sodii benzoatis .....3 iss
Syrupi tolutani .....3 v
Aquæ destillatæ .....q. s. ad ℥ vj
Misce.
Sig.: Tablespoonful every two hours.

As a preventive of urate deposit the following may be used:

℞ Magnesii carbonatis .....3 j
Acidi citrici .....3 ij
Sodii biboratis .....3 ij
Aquæ .....q. s. ad ℥ viij
Misce.
Sig.: Teaspoonful three times daily.

Calcium carbonate influences the monosodium and disodium phosphates in such a way that the urine can hold a greater quantity of uric acid in solution without losing its acid reaction.

℞ Calcii carbonatis .....gr. x
Lithii carbonatis .....gr. j–gr. ij
Misce et fiat pulvere No. I. Dentur tales doses No. XX.
Sig.: Powder every three hours with glass of water until urine only slightly acid; then three or four times a day.

Or:

℞ Urotropini .....3 j
Misce et fiant pulveres No. X.
Sig.: Powder three times daily.

Or:

R Magnesii borocitrici .....ʒ iss
Sacchari lactis .....3 iiss
Olei limonis .....♏ xv
Misce et fiat pulvere No. I. Dentur tales doses No. X.
Sig.: Powder three times daily in a glass of sweetened water.

Diet. The diet for uric acid stones is very important. A mixed diet, with a preponderance of vegetables, fats, and carbohydrates, and occasionally a period of absolutely no meat, is indicated.

Meats. Avoid all kinds of meats that are rich in cell nuclei, such as liver, brain, sweetbreads, and kidneys. The best method of preparation is by boiling, especially by putting the meat into cold water first.

Fruits. Are exceedingly good for patients suffering with uric acid excess. The vegetable acids are changed to carbonates and combine with uric acid, forming urates, and these are much more soluble in the urine.

The therapy of phosphatic deposits differs considerably from the foregoing. The urine is usually alkaline, and contains abundant crystals of triple phosphates.

Mineral acids are indicated unless there is a coexisting hyperacidity of the stomach.

℞ Acidi phosphorici or hydrochlorici diluti .....3 iss
Syrupi rubi idæi .....3 iv
Aquæ destillatæ .....q. s. ad ℥ vj
Misce.
Sig.: Teaspoonful in a glass of water often enough to use the whole amount during the day.

Where fermentation occurs in the digestive tract we must use the antifermentatives.

℞ Sodii boratis .....gr. xx–gr. xxx
Syrupi althææ .....3 v
Aquæ destillatæ .....q. s. ad ℥ vj
Misce.
Sig.: Tablespoonful every two hours.

Or:

℞ Urotropini .....3 iiss
Aquæ destillatæ .....℥ v
Misce.
Sig.: Tablespoonful in a glass of water to be taken gradually during the day.

Or:

℞ Resorcinolis (Merck) .....gr. x
Sacchari .....gr. x
Olei menthæ piperitæ .....gtt. ij
Misce et fiat cachet No. I. Dentur tales cachets amylaceæ No. XX.
Sig.: Cachet three times daily.

Always treat the faulty condition back of the calculus formation, such as dypepsia, hyperacidity, neurasthenia, etc. Have patient use large quantity of water to keep the kidneys flushed out.

Surgery. Where a stone becomes lodged in the ureters and can not be passed either into the bladder or back into the renal pelvis, or where a large stone forms in the pelvis too large to embark upon

the journey to the bladder, surgery offers the only relief, and such cases should be turned over to a competent surgeon.

Cystitis.

Remember that cystitis is probably in all instances due to bacteria. The alkalinity of the urine is due to the power of many of the bacteria to break up urea into ammonia compound. Urinalysis shows alkaline urine as a rule; mucus, pus, and leucocytes more or less abundant; and crystals of the triple phosphates.

Remember that the walls of the urinary bladder may become so thickened that it can be felt as a globular, hard tumor, and hypertrophied, muscular bands detected by the sound.

Remember that when a stone is the cause of the cystitis, hematuria is more common; sudden, frequent interruption of the stream in micturition, due to obstruction of neck of bladder, and pain and strangury at the close of micturition. The exploration of the bladder with a sound will confirm the presence of the stones.

Remember that the examination of the bladder with the cystoscope is important—not only in the diagnosis of cystitis, but the cause is frequently revealed.

Remember that in tubercular cystitis without the presence of other organisms the urine is acid in reaction, as the tubercle bacilli do not decompose urea.

Treatment.

Cystitis due to the presence of calculus can be cured only by removing the stone. Probably the best method is through the perineum. Never attempt to crush a stone in the bladder.

Urinary antiseptics are indicated in all cases, and the best is hexamethylenamine (urotropin), given in 5-grain doses three or four times a day. It lessens the probability of complicating pyelitis.

The bladder should be irrigated daily with hot boracic acid solution.

Diet. Should consist principally of milk. Alcohol, condiments, and drugs that irritate the bladder —such as cantharides or copaiba—must be prohibited.

Catharsis. The bowels must be kept free, and salines are best, or oil enemata may be used.

Pain. Hot applications should be applied over the pubis. Cloths wrung out of hot water, and covered with rubber cloth and bandage, may be used, or hot flaxseed poultice. In some cases the application of the ice bag affords greater relief. In case these local applications fail to give relief, a hypodermic of morphin gr. ¼ and atropin gr. $\frac{1}{150}$ should be given into the skin of the abdomen. Suppositories may be used, as:

℞ Extracti opii .....gr. vj
Extracti hyoscyaminæ .....gr. v
Olei theobromatis .....q. s.
Misce et fiant suppositoria No. VI.
Sig.: Insert 1 at bedtime.

Or:

℞ Pulveris opii .....gr. xij
Camphoræ .....gr. xxx
Extracti belladonnæ .....gr. iij
Olei theobromatis .....q. s.
Misce et fiant suppositoria No. VI.
Sig.: Insert 1 at bedtime.

Or:

℞ Ichthyolis .....ʒ iss
Aquæ destillatæ .....O ij
Misce.
Sig.: Inject into the bladder, slowly, warm, three times daily, later once daily, as irrigation.

Or:

℞ Fluidextracti belladonnæ .....♏ xx
Sodii biboratis .....ʒ ij
Acidi benzoici .....ϑ j
Tincturæ opii camphoratæ .....ʒ iss
Olei gaultheriæ .....♏ xij
Syrupi tolutani .....ʒ ij
Aquæ destillatæ .....ʒ iv
Misce.
Sig.: Dessertspoonful in water four times daily.

Or:

℞ Forma tropini (Milliken) .....ʒ iij
Sig.: Teaspoonful three times daily after meals.

In the chronic form, irrigation with silver solution gives best results. Kaufmann's plan for using silver nitrate is best. Wash out the bladder with a warm boracic acid solution and completely empty it. The catheter is then partly withdrawn, so that the silver solution may reach the prostatic portion. A solution of silver nitrate 1:2000 is injected and retained for three minutes, and then allowed to

flow out spontaneously. If patient is very sensitive, this may be followed by salt solution. After two or three days this procedure is repeated, using 1:1000 solution of silver nitrate. After this, 1:500 solution may be used. The time between injections is gradually increased as improvement is noted.

When the urine is acid the following combination may be administered internally:

℞ Potassii acetatis .....3 iv
Liquoris potassii .....3 j
Fluidextracti uva ursi .....3 iv
Tincturæ hyoscyaminæ .....3 iv
Tincturæ lupulini .....3 iv
Aquæ .....ʒ ij
Syrupi zingiberis .....q. s. ad ʒ viij
Misce.
Sig.: Tablespoonful in water after meals and at bedtime.

Causal Therapy. Occasionally malarial infection will cause a severe acute cystitis, and quinin will give prompt relief when other forms of treatment fail.

CHAPTER VII.

DISEASES OF THE BLOOD.

Chlorosis.

Remember that this condition is due to a deficiency of hemoglobin, and is seen in girls at the age of profound sexual changes. There is no loss of subcutaneous fat, but, on the contrary, fat may be increased, due to deficient oxidation.

Remember that puffiness of the face and swelling of the ankles may occur, and suggest nephritis, but a blood and urinary examination will disclose the cause.

Remember that in some cases the cheeks may have a reddish tint, and on exertion the patient may complain of palpitation and breathlessness, suggesting disease of the heart or lungs.

Don't mistake the systolic murmur heard at the apex for mitral disease. Cardiac enlargement is absent.

The venous hum heard over the large veins in the neck is heard only in anemia.

Remember that a drop of blood allowed to fall on a piece of white blotting paper often shows the anemia by its pale color, due to the reduction of hemoglobin.

Remember the capricious appetite in these cases —the craving for unusual foods, especially acids.

Remember that hyperacidity of the stomach and attacks of cardialgia, or severe paroxysmal headaches, are quite common in chlorosis.

Remember that the microscope shows small, pale-red cells, with but slight, if any, reduction in the number.

Remember that in tuberculosis there is a pallor, but with cough; wasting, positive physical signs, rapid pulse; slight fever, recurring about the same time each day, also coexists; while the pallor of chlorosis is yellowish-green, with areas of pigmentation, and the eyes peculiarly brilliant, with sky-blue sclera.

Treatment.

Plenty of fresh air and good red beefsteak for chlorosis is an old adage that is hard to improve upon in the treatment.

Rest in bed is imperative in the severe cases, and often better results are observed in milder attacks by requiring midday rest of the patient.

Exercise should be moderate and carefully regulated. Those forms that are passive to the patient are best, as buggy riding or boating; then, as improvement occurs, horseback riding and walking may be advised.

Massage and dry rubs are excellent. Electricity is indicated, and should be used in the severer forms when neurasthenia is a pronounced factor.

Diet must be nutritious. Proteids must be allowed liberally. It is best to feed frequently in

small quantities. Milk, to which is added cream, raw or slightly cooked meat, and eggs are excellent.

Constipation must be overcome. Saline cathartics or pilulæ aloes et ferri 3 to 5 a day may be used.

℞ Fluidextracti rhamni purshianæ aromatici .....ʒ j
Fluidextracti glycyrrhizæ .....3 ij
Misce.
Sig.: Teaspoonful night and morning with a glass of hot water.

Where the constipation is due to atony of the bowels, and it most frequently is, the following is a good combination:

℞ Extracti rhamni purshianæ .....3 j
Extracti nucis vomicæ .....gr. viij
Extracti physostigmatis .....gr. ij
Extracti hyoscyaminæ .....gr. v
Misce et fiant pilulæ No. XXX.
Sig.: Pill night and morning.

Iron is the only remedy with which to treat chlorosis. The mode of action is unknown. It is best to gradually increase the dose at the beginning and gradually decrease at the close. Of the preparations to be used, those of U. S. P. are unexcelled. The vegetable iron preparations have no advantage, and the same may be said of peptonates. All are agreed that Blaud's mass will probably give best results.

℞ Pilulæ ferri carbonatis (Blaud), recently prepared .....gr. v
Fiat pilula No. I. Dentur tales pilulæ No. L.
Sig.: Pill three or four times daily half an hour before meals.

Blaud's pills may be given after meals, with in-

crease of dose; for instance, 1 pill three times daily for the first week, 2 during the second, 3 during the third, 2 during the fourth, and 1 during the fifth. It is well, where there is digestive disturbance, to give the following powder before meals:

℞ Betanaphtolis .....gr. j
Bismuthi subnitratis,
Sodii bicarbonatis .....āā gr. iiss
Misce et fiat pulvere No. I. Dentur tales doses No. XX.
Sig.: Powder three times daily before meals.

When severe attacks of gastralgia occur, it is usually made worse by iron and interferes with the treatment. Use an exclusive milk diet, hot cloths over the abdomen, and administer either belladonna or silver nitrate.

℞ Argenti nitratis .....gr. x
Kaolini .....gr. xlv
Petrolati .....q. s.
Misce et fiat massa et divide in pilulæ No. L.
Sig.: Pill before meals three times daily.

Other forms of iron may be used:

℞ Ferri reducti .....ʒ ss
Pulveris glycyrrhizæ .....ʒ ss
Extracti gentianæ .....q. s.
Misce et fiat massa et divide in pilulæ No. XXX.
Sig.: Pill three or four times daily.

Arsenic is a useful drug in treating anemia, and may be advantageously combined with the iron:

℞ Ferri et ammonii citratis .....ℨ j
Liquoris potassii arsenitis .....ʒ v
Aquæ menthæ piperitæ ....q. s. ad ℨ vj
Misce.
Sig.: Half a teaspoonful after meals, gradually increasing dose until teaspoonful is taken.

Or:

℞ Ferri et quininæ citratis .....gr. l
Elixiris simplicis .....℥ ij
Misce.
Sig.: Teaspoonful three times daily.

It is well to insist on plenty of water with the iron, especially iron in solution.

Pernicious Anemia.

Remember that this pathological condition makes its approach in so slow and insidious a manner that the patient is unable to fix a date of onset of that languor which later becomes such a prominent symptom.

Remember that, while the yellow color of the skin may indicate jaundice, the sclera of the eyes remains white and no bile pigment is found in the urine.

Remember that the initial symptoms are failing strength, anorexia, dyspepsia, and intestinal disorder that may be so severe as to lead to a suspicion of grave pathological lesion in the alimentary canal, and loss of flesh, but the body maintains its plumpness, due to the accumulation of subcutaneous fat.

Remember that in some cases the nervous symptoms are the first to attract attention—such as tingling in the fingers, pains in the back and limbs, or the signs of spastic paraplegia, tabes dorsalis, or peripheral neuritis. These symptoms may be so pronounced that months, or even years, elapse before the blood condition is suspected.

Remember the circulatory disturbances—such as palpitation, faintness or actual syncope, throbbing in the head, buzzing noises in the ears.

The pulse is quickened and greatly affected by slight exertion. A blowing systolic murmur is heard over the whole cardiac area, but loudest in the second left intercostal space close to the sternum. That it is of hemic origin is proven by the presence of a similar murmur in the large arteries and a loud hum in the jugular veins. The carotids pulsate violently and often a thrill may be felt over them.

Remember that a positive diagnosis can be made only by examination of the blood, which will present the following characteristics: clotting less readily than normal; a great reduction in the number of the red cells; the presence of pathological forms of cells, as poikilocytes and megolocytes; the hemoglobin percentage is reduced, but the color index is high. There is no leucocytosis, but in some cases there is an increase in the number of lymphocytes.

Treatment.

The following gives a concise, but complete, outline of the treatment: first, a diagnosis; second, rest in bed; third, plenty of fresh air, and, if possible, in the open air; fourth, all the good food the patient can take; fifth, arsenic.

Fowler's solution is probably the best form in which to administer the arsenic. Give it in increas-

ing doses, beginning with 3 minims three times daily and increase 1 minim each week until 15 or 20 minims are given at a dose, or until toleration is reached.

Normal saline solution by hypodermoclycis or into the vein is beneficial if given rather frequently. It checks the destruction of red cells by the blood serum.

Mouth should be cleansed thoroughly daily with some antiseptic mouth wash. Iron appears to be of benefit in a few cases.

Salol is given by some on the theory that the disease is caused by absorption of toxins from the bowels.

Arsenic may be given hypodermatically as sodium arsenate gr. $\frac{1}{60}$, or atoxyl (meta-arsenic acid anilid), using 6 minims of 15-percent or 20-percent solution. Warm the solution, to be sure of complete solution of the atoxyl. The dose is increased 6 minims daily until 5 grains of atoxyl are given and continued for four weeks, then reducing the injections to two a week, then one a week, then intermit the treatment for from six to eight weeks.

Remember that serious results have followed the hypodermatic use of arsenic. Fowler's solution, diluted with 2 parts of water, may be used.

Leukemia.

Remember that the onset is insidious, and the patient may seek advice for a progressive enlarge-

ment of the abdomen, enlarged glands, or for palpitation and dyspepsia, or for severe epistaxis.

Remember that hemorrhage is exceedingly common, and a fatal hematemesis may be the first symptom.

In the splenomedullary form the enlargement of the spleen is pronounced, extending downward and to the right. Its notched, sharp border usually identifies the tumor as splenic. Splenic friction can often be heard and felt over the tumor, and the enlarged spleen may lift the heart to the fourth costal space and cause dyspnea from its size. Sometimes tenderness over the sternum and the long bones can be elicited.

Remember that there are **four cardinal findings:**

1. **Enlargement of lymph glands, spleen, and tonsils.**

2. **Hemorrhage.** This is the most characteristic and frequent. It may occur into the skin, retina, from mucous membranes, or into viscera, as spleen or brain.

3. **Necrosis,** occurring in the infiltrated foci of the mouth. This condition is very suggestive.

4. **Lymphemia.** This is the deciding factor, and no positive diagnosis can be made without blood examination. The lymphocytes are greatly increased, and may constitute from 92 percent to 98 percent of the leucocytes. The ratio between the red and white cells changes, and may be as 1:2 or 1:1.

Treatment.

A good diet, fresh air, rest, and abstaining from mental worry are the important general conditions.

Quinin should be given in cases with a malarial history.

Phosphorus is given by some; best given in pill.

Arsenic is the best agent at our command to combat this condition. It must be given in increasing doses and in large amounts. **Fowler's solution** is the form most often used. Begin with 5 drops three times daily and increase 1 drop daily until 40 or 50 drops are taken. If slight diarrhea is caused by the arsenic, give paregoric with it and occasionally a slight purgative to prevent accumulation.

Arsenious acid may be used, but should always be combined with black pepper, so that absorption will be hastened. The drug may be used hypodermatically, as in pernicious anemia. **X-ray** is often used, and in a few cases with apparent benefit. When it is used it should be employed cautiously, as deaths have occurred suddenly, with the appearance of toxemia from cell destruction.

Pseudoleukemia (Hodgkin's Disease).

Remember that chronic tonsillitis of several months' standing may precede Hodgkin's disease. In all cases of enlargement of cervical glands the teeth should be thoroughly examined; this is especially true in the young.

Remember that anemia is not, as a rule, severe,

and occurs late in the disease, and that an examination of the blood usually does not show any disproportion of cells.

Remember that the temperature curve, if fever exists, is rather suggestive of a toxemia because of its irregularity, and is often accompanied by chills and sweats.

Remember that the enlargement of the axillary and inguinal glands strongly indicates the condition, but unfortunately does not occur early. Pressure symptoms may be caused by the enlarged glands, the axillary causing pain and swelling in the hands and arms, and the inguinal great pain and swelling of the feet.

Remember that bronzing of the skin may occur and an obstinate pruritus. Recurring boils are frequent.

Remember that tuberculous glands of the neck very closely simulate this condition.

1. The differentiation should be made by removing one of the glands under cocaine and examine it. The histologic changes in the gland in tuberculous infection are distinct and the bacilli may be found.

2. Tuberculin should be used if the patient has no fever. In early tubercular adenitis the reaction is prompt. It should be used continuously, and a daily record kept of the temperature.

3. Periadenitis is very common in tuberculous glands, and the skin becomes adherent and the

glands are not movable. Eventually some of the glands break down and discharge.

Remember that the blood count will decide for or against **leukemia.**

Treatment.

Operation for the removal of the enlarged glands should be advised when the superficial glands of one side of the neck are involved. Even when the glands of both sides are involved, if there are no mediastinal glands involved, operation is advisable.

X-ray in selected cases does some good. The glands may be reduced in size, but it is questionable whether a cure is effected.

Morphin should be used to relieve pressure pains.

Tonics, as quinin, iron, and codliver oil, should be used.

Arsenic in the form of Fowler's solution gives the best results. It should be given in increasing doses, beginning with ♏ iij–♏ v, until the point of toleration is reached.

Iodin, locally to the glands, appears to be harmful.

Injection into the glands is not beneficial.

Hypodermatic injections of sodium cocodylate may be used instead of arsenic when it irritates the bowel. May be combined as follows:

℞ Sodii cocodylatis .....gr. xxv
Cocainæ hydrochloridi .....gr. ss
Sodii chloridi .....gr. j
Aquæ destillatæ .....q. s. ad ℥ j
Misce et fiat solutio.
Sig.: Inject 15 to 30 minims daily.

Purpura.

Remember that this may occur as a symptom in various conditions, as in many infectious diseases —such as scarlatina, sepsis, measles, variola, etc.; or it may be of a toxic nature—as in nephritis, cholemia, or in the use of quinin, mercury, etc. Often it occurs in the aged in malignant tumors, leukemia, pseudoleukemia, and pernicious anemia.

Remember that the coagulating time of the blood is greatly lengthened. The eruption is usually macular, but may be papular or urticarious.

Remember that it seldom occurs on the face, but usually confined to the extensor areas of the extremities, especially the legs.

Remember that in purpura rheumatica the joints are involved. In most cases tonsillitis, with fever, muscular pains, and colic are initiatory symptoms. Sloughing of the tonsil has occurred. The joints most commonly involved are knees, ankles, or elbows.

Remember that the purpura may precede or follow the joint symptoms, and various forms of the eruption occur, as macular, urticarious, or erythematous.

Remember that there is a great tendency to hemorrhage from mucous surfaces, as nose, mouth, alimentary tract, or vagina. These hemorrhages may be serious and even fatal.

The purpuric spots in the skin do not disappear

on pressure, and the best way to observe this is by pressing over the spot with a glass slide.

Treatment.

The diet should be carefully watched. All acids and acid fruits, crabs, lobsters, and egg albumen (Wright's decalcifying agents) should be avoided.

Cathartics should be used to keep the bowels moderately free.

Calcium lactate, or chlorid gr. x–gr. xxx, should be given, so that the coagulating time of the blood may be decreased.

℞ Calcii lactatis .....gr. xx
Misce et fiat charta No. I. Dentur tales doses No. XII.
(Waxed paper.)
Sig.: Powder four times daily.

Or:

℞ Sodii sulphocarbolatis .....ʒ iij
Stypticini (Merck) .....gr. xv
Aquæ menthæ piperitæ .....ʒ iij
Syrupi simplicis .....ʒ j
Aquæ .....ʒ ij
Misce et fiat solutio.
Sig.: Tablespoonful every four hours.

In rheumatic forms the antirheumatic remedies must be administered.

℞ Potassii iodid .....ℨ ij
Sodii salicylatis .....ʒ ss
Syrupi simplicis .....ʒ iv
Aquæ .....q. s. ad ʒ ij
Misce.
Sig.: Dessertspoonful every four hours.

Where a good general tonic is needed, the following is good:

℞ Arseni trioxidi .....gr. j
Quininæ muriatici ..... ℈ ivss
Ferri sulphatis exsiccati .....ʒ j
Extracti nucis vomicæ .....gr. x
Misce et fiant pilulæ No. LX.
Sig.: Pill after each meal.

Gelatin may be used, injecting 1½ ounce of a 10-percent solution into the gluteal region to check hemorrhage.

CHAPTER VIII.

DISEASES OF THE DUCTLESS GLANDS.

Addison's Disease.

Remember that the onset is insidious, the patient gradually losing strength and energy. Gastric disturbances finally cause him to seek relief.

Remember that, while pigmentation is an important sign, it is **variable**, both as to the **time** of its appearance and in its **degree.** Usually following the constitutional symptoms, it may precede them or it may not occur until shortly before the fatal termination. The **extent** of pigmentation is variable, and may be universal, but it is usually partial. It is usually seen first on the face, neck, and back of the hands and fingers. The shade of color varies from lemon-yellow to dark-brown or black; usually darker on exposed parts and naturally pigmented portions.

Remember that pigmentation is not pathognomonic of Addison's disease. The following must be excluded: 1, abdominal growths, as tubercle, cancer, or lymphoma; 2, uterine disease and pregnancy; 3, hypertrophic cirrhosis and diabetes; 4, melanotic cancer and exophthalmic goiter; 5, pernicious anemia and prolonged use of arsenic.

The occurrence of fainting fits, nausea, gastric irritability, and asthenia are stronger indications of Addison's disease.

Remember that asthenia is probably the most frequent and important symptom. Easily tired at first, the patient finally becomes unable for any exertion of either mind or body.

Remember that there is no emaciation accompanying the muscular feebleness. There may be extreme degree of muscular prostration, while the muscles feel firm and hard, with no emaciation, and therein lies the distinctive quality of asthenia in Addison's disease. This loss of muscular power extends to the cardiac muscle, as is shown by the small, extremely soft, and compressible pulse.

Remember that, as a large percentage of Addison's disease is due to tubercular degeneration of the glands, in doubtful cases the tuberculin test may be used.

Treatment.

Rest in bed is imperative because of the exhaustion and danger of fatal syncope.

Diet must be nutritious and liberal.

Tonics are indicated. Arsenic and strychnin are best.

For the **nausea** and vomiting, creosote, phenol, ice, and hydrocyanic acid should be given.

Diarrhea is best controlled by large doses of bismuth.

For vomiting and diarrhea the following is good:

℞ Bismuthi subnitratis .....ʒ iv
Creosoti (Beechwood) .....♏ v
Aquæ menthæ piperitæ .....ʒ iij
Misce.
Sig.: Teaspoonful every two or three hours. Shake well.

Organotherapy gives good results in many cases; some are apparently cured. The medullary portion of the suprarenal gland is the part used. The raw gland, partially cooked, or the glycerin extract may be used.

℞ Suprarenal gland desiccated (U. S. P.) .....3 ij
Extracti nucis vomicæ .....gr. iij
Misce et fiant capsulæ No. XXIV.
Sig.: 1 or 2 capsules three times daily.

Solution of adrenalin chlorid may be used hypodermatically—a dram of 1:1000 solution injected every other day.

Exophthalmic Goiter.

Most common in women between puberty and the menopause.

Remember that there are four cardinal symptoms that render a diagnosis positive when present, and a positive diagnosis is impossible unless some of them are found. They are: goiter, exophthalmos, tachycardia, and tremor.

The goiter, as a rule, is small and the right side of the gland is more prominent. The tumor is soft and uniform, but occasionally may be irregular and contain rounded or nodular masses that are hard. Pulsations can usually be seen in the gland and a murmur heard over it. On palpation a systolic thrill may be felt. The goiter rarely produces pressure symptoms, and it varies in size at different times.

Remember that **exophthalmos** is present and often early. It may be unilateral. The amount of protrusion varies, and this protrusion produces the following signs:

1. **Gräfe's Sign.** The upper lids lagging behind in the downward movement of the eyeballs, and the scleræ become visible between them and the cornea.

2. **Stellwag's Sign.** The widening of the palpebral fissure. This retraction of the upper lids causes a white ring of sclera to be seen all around the iris.

3. **Diminished** frequency of winking.

4. **Mobius' Sign.** The inability to converge for near-by objects. An attempt causes a sense of strain, but no double vision. This sign is not always present.

5. **Joffroy's Sign.** The head is bowed forward and the patient asked to look up without changing the posture. The forehead is not wrinkled, as occurs in health.

Tachycardia is not only prominent, but one of the most constant signs. The **rate** of the **pulse** may be very **high**, but there is no irregularity, except toward the close.

Remember that the **area** of cardiac **pulsation** is **increased** and the action is **heaving** and **forcible.** The large arteries of the neck throb and a capillary pulse is readily seen. Frequently a pulse can be seen in the veins of the hands.

Remember that the tremor is most always found, and may be the chief trouble of complaint by the patient. It varies in degree, and may be discovered by the physician only after careful observation. The tremors usually run from eight to ten per second, and may be best observed by the patient standing, hands and fingers extended, and a piece of paper laid across the back of the fingers. The tremor is made worse by excitement and worry.

There are some signs that are of secondary importance in making a diagnosis. The most prominent are the following:

1. **Emaciation** is the most constant. The loss of strength is dependent upon the emaciation.

2. **Sweating** is frequent and often a troublesome symptom. The falling of the hair is due to its disturbed nutrition. A dry cough is frequently observed, due to pressure upon the trachea.

3. **Edema** of the feet may occur, and is due to the cardiac weakness.

4. **A change in the mental condition** will often be the earliest sign. The patient becomes irritable, excitable, emotional, fidgety, and restless; is unable to concentrate his mind and longs for continuous changes.

Treatment.

Rest, free from worry and anxiety, is imperative, and in severe cases it is best to confine the patient to bed. The quietude of a country place, where

there is plenty of good, fresh air and sunshine, is the best place.

Diet must be abundant and mixed. It is better to somewhat limit the amount of meat, but plenty of proteids must be given because of the large amount of nitrogen eliminated. Stimulants—as coffee, tea, alcohol, chocolate, and condiments—must be prohibited.

Hydrotherapy often gives good results. The baths may be given at home. The only thing to keep in mind is to avoid all forms of stimulation, as cold douche along the spine or hot pack, until perspiration begins. In all forms the bath should be sedative and cold kept to the head.

Electrotherapy is recommended by some. Galvanism is the form used. The positive pole is placed under the angle of the lower jaw with moderate pressure. The negative electrode is placed on the neck at the height of the lowest cervical vertebra. The strength of the current, which is gradually increased and then gradually decreased, is applied for two to three minutes. Both sides of the neck should be treated in this way.

Medication. If chlorosis or anemia be present, iron and arsenic should be used.

For marked nervous symptoms sodium or strontium bromid should be exhibited. Or camphor monobromate may be tried, as:

℞ Camphoræ monobromatæ .....gr. v–gr. x
Sacchari lactis .....gr. iij–gr. v
Misce et fiat pulvere No. I. Dentur tales pulveres No. XX.
Sig.: Powder three times daily.

Forcheimer's method gives excellent results and consists in giving quinin hydrobromate gr. v in gelatin-coated pill four times daily, and, if no improvement within forty-eight hours, he adds ergotin gr. j. He claims a cure in from 70 to 90 percent of cases. The time of treatment varies from four months to three years. Cromium sulphate gr. v three or four times daily often gives surprisingly good results.

Beebe and Rogers have prepared a serum by injecting animals with pathological glands. They claim remarkably favorable results, but it must be used early. After the profound anatomical changes occur in other organs it appears to be less potent.

Sodium phosphate in ½ to 2 drams daily acts beneficially, especially upon the nervousness.

Ortner highly recommends dilute sulphuric acid, 10 drops three times daily, for the vasomotor disturbances so often occurring.

Tincture of convallaria and **belladonna** in full doses will often quiet the heart and reduce the pulse rate.

Iodin in any form, locally or internally, should be studiously avoided in malignant goiter. Theoretically, the same advice applies to thyroid extract.

Surgery, while responsible for some sudden deaths from acute cardiac dilatation, does in some cases offer relief, or even a cure.

Milk from thyroidectomized goats has given results in a few cases. Chemists have produced a substance from the milk called rodagen, and is said

to contain 50 percent of the active constituent of the milk and 50 percent milk sugar. From 1 to 3 drams are given daily. Patients sleep better and are less nervous while taking it.

Merck prepares a serum from thyroidless sheep that is said to be useful, but the expense of both of these preparations limits their use.

Myxedema.

There are two forms, and the division relates only to age, as both are caused by the atrophy of the thyroid. The forms are cretinism, occurring in children, and myxedema of the adult.

Remember that it is difficult to diagnose cretinism prior to the first year.

Remember that a child that stops growing, and there is lack of proportion between the various parts of the body, so that there is a plump head, a short and deformed body, and thick, "pudgy" arms and legs, should strongly suggest cretinism. The large **head** is flat at the top, narrow in front, and broad behind. The **face** is broad and expressionless. The **forehead** is low and broad. The **eyes** are dull and appear to be half closed, caused by the swollen lids, and are wide apart. The **nose** is stubby, depressed at the root, nostrils widely opened, and the alæ thickened. The **ears** are thickened. The **lips** are thick and protruding. The **tongue** is swollen and protrudes.

Remember that the skin is **dry** and **harsh**, and ap-

parently dropsical, but will not pit in cretinism, while in rickets there are the sweating head, craniotabes and swollen, tender joints.

Remember that mental dullness, backwardness about learning to talk and walk, and the disturbance of the special sense of taste and hearing characterize cretinism.

Myxedema occurs more frequently in women and between the fifteenth and forty-fifth years—**the child-bearing period.**

Remember that the onset is insidious, but languor, undue sensitiveness to cold, with slight auditory and visual hallucinations, and swollen eyelids mark the onset of athyria.

Remember that there are some characteristic signs that are found in no other conditions, and the following are the most prominent:

1. **Dense, inelastic swelling** of the **subcutaneous tissues,** which do **not pit** upon **pressure.** It is most abundant where subcutaneous tissues are lax, and thus gives a peculiar appearance to the face and hands.

2. A **change** in the **facial expression,** due to the obliteration of the lines of expression—the swollen eyelids, the transverse wrinkles of the forehead, the thickened and enlarged nose, and swollen lip.

3. The swollen and shapeless hands and feet.

4. Increase of size and body weight.

5. Subnormal temperature.

6. Mental dullness and muscular weakness.

Treatment.

There is nothing else in our therapeutics that is so satisfactory as the treatment of this condition.

The thyroid gland, or extract made from it, may be given. It is better to give the extract put up in tablets. The dose at the beginning should be small and cautiously increased. Whenever the following symptoms appear, the treatment must be stopped for a few days: these are palpitation, faintness, dyspnea, anorexia, nausea, vomiting, nervousness, tremor, and sense of fear. It is better to begin with from 1 to 2 grains and gradually increase until from 15 to 30 grains are taken.

℞ Tablet thyroidin (Merck) .....āā gr. ij
No. C.
Sig.: Tablet three times daily, gradually increasing until four are taken.

Or:

℞ Thyroidin .....gr. xxx–gr. xl
Arseni trioxidi .....gr. j
Extracti nucis vomicæ .....gr. iij
Misce et fiant pilulæ No. LX.
Sig.: Pill three times daily, gradually increasing until three or four are taken. Interrupt treatment occasionally.

In **infantile** form or **cretinism** Forcheimer's rule of dosage is good, and is as follows: the adult dose is taken at 5 grains and the dose for an infant is obtained by taking one-twentieth of the fraction obtained by dividing the age in months by twelve. Thus for a child four months old, $\frac{1}{20}$ of $\frac{4}{12}$ of 5 equal $\frac{1}{12}$; hence the dose would be gr. $\frac{1}{12}$ for a child four

months old. He cautions against even the small dose and advises to begin by giving it once a day, then twice, and finally thrice. The untoward symptoms in children are restlessness, poor sleep, loss of appetite, and irritability. It should not be pushed until the graver symptoms of rapid pulse, vomiting, or collapse occur.

CHAPTER IX.

DISEASES OF THE VASCULAR SYSTEM.

Pericarditis.

Remember that many of the idiopathic varieties are tubercular in origin, and that rheumatism is the most frequent cause of the secondary variety.

Remember that the acute fibrinous stage may or may not be followed by an effusion into the pericardium.

Remember that in the early, or fibrinous, stage auscultation furnishes the only conclusive evidence, and that the friction sound thus heard possesses the following characteristics:

1. It is **double,** and corresponds to the systole and diastole of the heart.

2. It is a **to-and-fro** murmur, and outlasts the first and second sounds of the heart.

3. The sound has a peculiar **rubbing** or **grating** quality, or it may be compared to creaking of new leather.

4. It is best heard over the **right ventricle**—the fourth and fifth interspace, at the left sternal margin—and appears to be superficial or close to the stethoscope.

5. **Variability.** It may be heard at one time and not at another.

6. The murmur may be intensified by pressure upon the stethoscope.

7. There are no **definite** lines of **transmission,** as in endocardial murmurs, and is usually heard over a limited area at the border of the sternum.

Remember that when **effusion** occurs, the friction sound disappears over the body of the heart, but may be heard at the base. There is an accentuation of the second pulmonic sound, while the first is obscure. The cardiac action is rapid and frequently arhythmic.

Remember that in well-developed cases of effusion the symptoms may be grouped as **constitutional** and **local.**

Constitutional Signs. Fever, restlessness, dyspnea, anorexia, pallor, insomnia, melancholia, with suicidal tendencies.

Pain varies from sharp, lancinating to dull, aching, and is made **worse** by **pressure** over the area with the stethoscope.

The dyspnea varies with the amount of effusion—from breathlessness, when the patient prefers to lie on the left side; to air hunger and extreme dyspnea, when he is obliged to be propped up in bed.

The pulse is rapid, small, and may be arhythmic. It may be obliterated during inspiration in large effusion—**pulsus paridoxicus.** It may be smaller in the left than right radial artery.

Physical Signs. Inspection shows precordial prominence, and widening and bulging of the lower intercostal spaces. Palpation shows feeble cardiac impulse.

First rib sign is found where there is a large amount of effusion. It produces an elevation of the clavicle, with a bulging of the left retroclavicular space, so that the first rib can be easily palpated to the sternum.

Percussion yields the most important sign, but a certain amount of effusion is necessary before it can be detected.

Rotch's Sign. With a normal or dilated heart the vertical border of the heart forms a right angle with the upper transverse hepatic dullness. When effusion occurs, this angle is replaced by a more or less curved line.

Triangle Sign. When effusion takes place into the pericardium, it collects in the most dependent portion of the sac, and as it increases it widens the area of dullness. This forms a triangle, with the base downward and apex up in the precordial region. The right leg of the triangular dullness may reach to or beyond the right border of the sternum, while the **left leg** may extend to the left anterior axillary line.

It is important to remember that cardiac dullness, particularly the left leg of the triangle, extends beyond the apex beat, which is also pulled downward and to the left.

Remember that the pressure of the effusion produces symptoms in other organs, but the most important ones are **dysphagia, paralysis of the vocal cords, vomiting, and singultus.**

Remember that, in differentiating between cardiac **effusion** and cardiac **dilatation,** an undulatory impulse seen or felt in two or more interspaces; distinct, though feeble, heart sounds, valvular in character, but having the fetal rhythm; and changes in the upper border of dullness by postural changes, are strongly suggestive of **effusion.**

Remember that in left-sided **pleural effusion** the heart is displaced to the right, the cardiac impulse and valvular sounds are distinct, and the area of flatness extends around the base of the chest.

Treatment.

Remember that rest in bed is imperative, so that the work of the heart may be lessened.

Diet should be liquid and principally milk. If the case extends over a period of two weeks, it is better then to add to the diet, so that the nutrition of the cardiac muscle will be maintained.

Medicinal. If the pericarditis is of rheumatic origin, sodium salicylate is indicated. It should be given with potassium bicarbonate. **Ice bag** should be applied over the cardiac region to quiet the heart. **Morphin,** given hypodermatically, is often beneficial to relieve dyspnea. **Tincture of aconite** ♏ iij–♏ v may be given for the same purpose. Amorphous aconitin gr. $\frac{1}{130}$, given every half to one hour to effect, is much better. **Digitalis** is the best aid in this as in other cardiac affections. It may be given combined as follows:

℞ Potassii acetatis .....3 ij
Spiritus ætheris nitrosi .....3 ij
Tincturæ digitalis .....3 j
Aquæ menthæ piperitæ ...q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every four hours.

Or:

℞ Potassii citratis .....3 ij
Infusi digitalis (fresh leaves) ....3 ij
Aquæ menthæ piperitæ ....q. s. ad ℥ vj
Misce.
Sig.: Tablespoonful every four hours.

Or:

℞ Tincturæ digitalis,
Tincturæ scillæ .....āā 3 ij
Misce.
Sig.: 20 to 30 drops three times daily.

If constipation exists, mild laxatives should be used. Should the fluid persist, it then becomes necessary to tap the pericardium and draw it off.

The technic, according to Curschmann, is as follows: The place chosen is the fifth intercostal space in the left mammary line, a point midway between the apex beat and left border of absolute dullness; or Bristow's choice, immediately to the left of the sternum in the fourth or fifth space, which latter location avoids wounding the artery and pleura. The skin is properly cleansed and may be anesthetized, and a small trocar and cannula pushed through the chest wall and pericardium. When the point passes through the pericardium, the sense of resistance ceases. A Potain aspirator

may be used. The fluid should be allowed to flow out very slowly and the patient watched carefully, as sudden death sometimes occurs. After the fluid is all withdrawn, a collodion dressing is applied. To lessen the troublesome adhesions that so often occur after withdrawing the fluid, it is well to give digitalis at intervals until recovery.

Acute Endocarditis.

Remember that this condition is most always, if not always, due to some infectious process, and that rheumatism, chorea, pneumonia, and scarlatina are exceedingly apt to produce it.

Remember that in simple endocarditis two things should be watched for, announcing its onset. In order of importance, they are pulse rate and temperature. The rapid pulse may be irregular and palpitation be complained of.

Remember that the earliest sign that auscultation reveals is a slight roughening of the "first sound." Later there may or may not be a murmur —systolic, or diastolic in time.

Remember that reduplication and accentuation of the pulmonic second sound is frequent.

Remember the more pronounced general symptoms—as irregular, rapid, feeble pulse; faintness, oppression, pallor, perspiration, and precordial pain.

Malignant Endocarditis.

Remember that the history of the case is all-important in the diagnosis.

Remember that we have two groups of symptoms —those of the primary disease and those of the endocarditis—and the clinical picture varies according to the domination of the one or the other group. To the first group belong the irregular fever, sweating, anemia, delirium, and loss of strength. To the second belong the air hunger symptoms, as dyspnea, orthopnea, palpitation, and irregular, but frequent, cardiac action.

Remember that emboli are common, and the signs vary with their location.

Remember that chills, fever, and sweat may occur periodically in some cases, and strongly suggest **malaria**, but the absence from the blood of the malarial parasite is conclusive.

Treatment.

Rest in bed, free from worry, in all infectious disease likely to be complicated by endocarditis, is the best prophylaxis and becomes imperative after its onset.

Cold over the cardiac area or a mustard plaster is good to quiet the rapid heart action. The diet should be liquid and nutritious. If rheumatism be the cause, salicylate and alkalies should be given; this is extremely important in children, as the joint symptoms are so mild. With rapid, weak heart, digitalis should be used. If there is cardiac irritation manifested by tachycardia and pain in the precordial region, it is well to combine aconite with it, as:

℞ Tincturæ digitalis .....3 iiiss
Tincturæ aconiti .....3 iss
Misce.
Sig.: 15 drops three or four times daily.

Eichorst claims to have cured a case by a combined use of quinin and bichlorid of mercury, as follows:

℞ Quininæ hydrochloridi .....gr. lxxv
Hydrargyri chloridi corrosivi .....gr. iij
Pulveris glycyrrhizæ .....3 ss
Extracti gentianæ .....q. s.
Misce et fiat massa. Divide in pilulæ No. XX.
Sig.: 3 pills daily after eating.

Collargol (Crede) is claimed by Ortner to be the best remedy in all cases of sepsis, pyemia, and bacteremia. If the **ointment** be used, the skin over the area to be rubbed is cleansed with alcohol and dried. Then 45 grains of 15-percent unguenti collargoli rubbed in carefully until the skin shows a grayish-brown tinge.

Rectal Use.

℞ Collargoli .....gr. xv
Aquæ destillatæ .....℥ vj
Sig.: The bowel is first irrigated with a cleansing enema in the morning and half of the above amount is run into the rectum slowly, and the balance is given in the evening.

Potassium iodid is recommended to stimulate absorption of the inflammatory product on the valves and prevent its conversion into fibrous tissue. It should not be given until subsidence of the inflammatory condition, and then administered cautiously and alternated with digitalis.

A saturated solution may be used, or the following:

℞ Potassii iodidi .....gr. xx
Potassii bicarbonatis .....ʒ ij
Spiritus ammonii aromatici .....ʒ ij
Tincturæ cinchonæ compositæ .....ʒ v
Aquæ .....q. s. ad ℥ iv
Misce.
Sig.: Tablespoonful three times daily.

Valvular Disease of the Heart.

Aortic Incompetency.

Remember that this is the lesion of the athlete and occurs in able-bodied, vigorous men.

Remember that, etiologically, there are three groups:

1. Those of congenital malformation.
2. Those due to endocarditis.
3. Those caused by arteriosclerosis.

The last is by far the most common, and is usually associated with a history of prolonged muscular strain.

Remember that the earliest signs are usually those due to arterial anemia, as headache, dizziness, flashes of light, and a feeling of faintness on sudden rising.

Remember that pain in the precordial region may be severe, and is often transmitted up the neck and down the arm.

Further failure of compensation produces dyspnea, but rarely cyanosis, hemoptysis, and edema of the feet.

Remember that mental disturbances are very common in this lesion, such as delirium, hallucinations, and morbid impulses, with suicidal tendencies.

Remember that **anasarca** is **rare**, while **sudden death** is more **common** than in the other valvular lesions.

Remember the value of examining the arteries in this condition. The following signs are more or less distinctly characteristic of aortic incompetency:

1. The visible pulsations in the peripheral vessels.
2. The pulsation is accompanied by a characteristic jerking. The aorta may lift the epigastrium with each pulsation.
3. Corrigan's, or water-hammer, pulse. The pulse wave strikes the finger with a quick, jerking impulse and immediately collapses. The peculiarities of the pulse may be emphasized by grasping the arm above the wrist and holding it up.
4. Retardation of the pulse. There is an appreciable interval between the heart beat and the radial pulse.
5. Capillary pulse, seen in the finger nails; or, by drawing a line upon the forehead, the margins of the hyperemia alternately blush and pale.

It is important that you auscultate over the carotid artery, because the second sound can be heard here when absent at the aortic cartilage; when the **second sound** is **audible** over the **carotid**, it indicates the regurgitation is **small in amount**, and hence a **favorable prognostic element.**

Remember that the murmur heard has a soft, blowing quality, and is loudest at midsternum, opposite the third costal cartilage, or along the left border of the sternum. It is heard during ventricular diastole, and is produced by back-flow of blood from the aorta.

The Austin Flint murmur is a second murmur limited to the apex, and is of a "rumbling, echoing" character. It is presystolic in time and occurs in the latter half of diastole. It is often associated with a palpable thrill.

Remember that this is the lesion associated with massive hypertrophy, and the **apex beat** may be seen in the seventh or eighth interspace on the **anterior axillary line.**

Aortic Stenosis.

Remember that arterial changes, which are so prone to occur in old men, lay the foundation for stenosis.

Remember that no symptoms appear until a break in compensation occurs, when the earliest are those of cerebral anemia—viz., syncope, dizziness, headache.

Remember that, while the high degree of muscular hypertrophy is present, yet the apex beat may not be easily seen because of coexisting pulmonary emphysema.

Remember that a **marked, systolic thrill,** most intense in the aortic region, is very characteristic of this lesion.

Remember that the murmur is a harsh systolic, and loudest over the second right costal cartilage.

Remember that the murmur is transmitted into the carotids, and it often has a musical quality.

Remember that not every murmur heard in this region is due to aortic stenosis. Calcareous plates in the aorta or on the cusp produce a very similar sound. Anemia causes hemic murmurs that are often best heard in the aortic area, but this soft bruit is very different from the loud, harsh murmur of stenosis.

Remember that in both the sclerosis and the anemia the aortic second sound is heard, and in the former it is accentuated.

Remember that the pulse is small and slow—**pulsus tardus**—and is somewhat characteristic of stenosis.

Mitral Incompetency.

Remember that so long as muscular hypertrophy is able to overcome the valvular defect, the patient will suffer no inconvenience from the lesion, except perhaps a little shortness of breath on sudden exertion, as running up a flight of stairs.

Symptoms are not a sign of the beginning of the lesion, but of the beginning of inequality between the lesion and the hypertrophy.

Remember that this is the lesion which, in long-standing cases, particularly in children, produces clubbing of the fingers.

Remember that attacks of bronchitis and hemoptysis are quite frequent, due to the pulmonic congestion.

Remember that we have persistent cough, with blood-stained sputa, containing alveolar cells and pigment granules.

Remember that the cardiac "sleep start" is a distressing symptom. Just as the patient falls asleep he wakes, gasping for breath and feeling as though the heart were stopping.

Remember the peculiarity of the pulse. It is irregular, with no two beats of equal force or volume, and persists even though compensation be re-established.

Remember that the apex beat will be found displaced downward and to the left, and is seen in the sixth costal space to the left of the nipple line.

Remember that the murmur is systolic, and loudest at the apex. It is a blowing sound, and may entirely replace the valvular sound.

Remember that this murmur may be heard also in the axillary space and beneath the angle of the scapula posteriorly.

Remember the peculiar phenomenon that the recumbent position makes it plainer, and often a murmur can be heard in the recumbent posture that is inaudible in the upright position.

Remember that percussion shows decided lateral increase of the heart, due to hypertrophy.

Remember that the three important physical signs of mitral regurgitation are:

1. A systolic murmur, loudest at the apex and propagated to the axilla and heard at the angle of the scapula.

2. Accentuation of the second pulmonic sound.

3. Increase in the transverse diameter of cardiac dullness, due to hypertrophy of both ventricles.

Mitral Stenosis.

Remember that this is much more common in females.

Remember that this is the only valvular lesion that has a characteristic thrill on palpation.

Remember that the hypertrophy is all in the right heart and increase of dullness is to right of sternum.

Remember that the thrill is felt best in the fourth or fifth space within the nipple line, limited in area and best felt during expiration. It is rough, grating in quality, and can be felt to terminate in a sharp, sudden shock, synchronous with the impulse.

Remember that the enlarged auricle may press upon the left recurrent laryngeal nerve, and cause paralysis of the vocal cords on the same side.

Remember that the murmur is heard to the inner side of apex beat or along the left sternal border, and sometimes can be heard only when the breath is held. It is a rough, vibratory, or purring sound, and gradually becomes louder until it terminates in the first sound. This murmur is synchronous with the thrill felt on palpation.

Tricuspid Insufficiency.

Remember that the signs are those of retarded pulmonary circulation and visceral congestion.

Remember that the pulse wave is seen in the veins of the neck, more pronounced in the right jugular.

Remember that often an **expansile pulsation** of the liver may be palpated. This may best be detected by bimanual palpation. One hand is placed over the fifth and sixth costal cartilages, the other over the lower border of the liver in the midaxillary line, when a **rhythmical expansile** pulsation may be felt.

Remember that a low systolic murmur is heard best over the **lower part** of the **sternum** and propagated in the direction of the **right axilla.**

Crural Vein Sound. A valve sound may be heard over the crural vein, either single or double. If double, it corresponds to the presystolic and systolic filling of the vein.

Tricuspid Stenosis.

Remember that this condition is almost invariably associated with tricuspid insufficiency.

Remember that there is a presystolic murmur, best heard at the base of the ensiform cartilage.

Remember that this murmur is associated with a presystolic thrill. Cardiac dullness is increased toward the right.

Remember that cyanosis of the face and lips is commonly seen, and becomes pronounced where dropsy occurs.

Treatment of Valvular Lesions.

Remember that a heart with a lesion does not need treatment so long as hypertrophy overcomes the ill effects of the lesion. There is as much wisdom in knowing when not to treat cardiac lesions as there is in knowing what to do when active treatment is called for; hence we may divide the treatment into stage of **compensation** and stage of **broken compensation.**

Stage of Compensation.

In this stage the treatment is wholly dietetic and mechanical.

Diet. The food should be abundant and nutritious. Coffee may be allowed, especially in the elderly. Milk should form a good part of the diet, but meats of all kinds are allowable in moderation. Fruits of various kinds and vegetables, especially spinach, lettuce, carrots, cauliflower.

The **digestive** tract must be watched, that gases do not form in the stomach and interfere with cardiac action.

Cathartics should occasionally be used, and salines are best, unless the patient is greatly weakened.

Fluids must be allowed in moderation. It is better if the patient takes less than the ordinary amount in health. More should be allowed in hot weather.

Tobacco is allowable in old smokers, as it will have no injurious effects; otherwise it is best to forbid it.

Salt should be eliminated as much as possible from the food. It should be rigidly withdrawn when dropsy appears.

Rest after eating should always be insisted upon, the length of time depending upon the individual case.

Exercise should be moderate and in the open air. Violent or long-exhausting undertakings must be prohibited. Worry and anxiety are never allowable, and the patient must lead a quiet, even life.

Baths. The skin should be kept active and free by tepid baths or sponging. Hot or cold baths should not be used. Turkish baths must be prohibited.

Clothing. Flannel next to the skin is best, but care not to dress the patient too warm is just as important. The skin must be protected from sudden chilling, as this causes visceral congestion and increases cardiac work.

Medication is indicated only as designed to tone up the whole system. For anemia and as a general tonic and a stomachic, arsenic is excellent. Fowler's solution may be given, or combined as follows:

℞ Liquoris potassii arsenitis,
Tincturæ valerianæ .....āā ʒ ij
Misce.
Sig.: 4 drops in water three times daily. Increase 1 drop per day until 8 drops are taken.

Or:

℞ Arseni trioxidi .....gr. iss
Piperis .....gr. xv
Acaciæ .....gr. iij
Aquæ .....q. s.
Misce et fiant pilulæ No. XX.
Sig.: Pill three times daily.

Quinin as a tonic may be used, but it is not so good.

℞ Tincturæ cinchonæ compositæ .....℥ iv
Sig.: Teaspoonful in water three times daily before meals.

Or:

℞ Tincturæ cinchonæ compositæ,
Tincturæ gentianæ compositæ ..āā ℥ ij
Misce.
Sig.: Teaspoonful three times daily before meals.

Stage of Broken Compensation.

Rest should be complete. The patient should be confined to his bed.

Diet. So long as digestion is good or hydrops is not present the diet should be liberal. When either condition appears, the diet must be restricted. Best —milk, two pints, and add well-cooked cereals, shredded wheat biscuits, zwieback, toasted bread, and unsalted butter. Later soft egg, chicken, quail, lamb, or veal chops, and potatoes.

Cold, locally—either the ice bag, Leiter's coil, or cold compress—should be laid over the cardiac region. The compress should be changed as soon as it gets the least warm.

Cardiac Stimulants. The best is **digitalis.** It

slows the rate and strengthens the beat. Don't forget its **cumulative action.** The effect on the heart can be detected as long as nine days after its use. There are various forms and preparations in which it may be given.

℞ Infusi digitalis (fresh leaves) ....ʒ iv
Sig.: Tablespoonful every two or three hours.

Or:

℞ Tincturæ digitalis,
Tincturæ scillæ .....āā ʒ iv
Misce.
Sig.: 20 to 30 drops three times daily.

Or:

℞ Digitaloni .....♏ xv
Sig.: May be given every four hours hypodermatically.

Or:

℞ Digitalini .....gr. ss
Alcoholis .....♏ xv
Aquæ .....ʒ ij
Misce.
Sig.: Inject 10 to 20 minims subcutaneously.

Or:

℞ Potassii acetatis .....gr. xx
Tincturæ digitalis .....♏ xv
Tincturæ scillæ .....♏ xl
Tincturæ nucis vomicæ .....♏ v
Infusi senegæ .....q. s. ad ℥ j
Misce et fiat haustus.
Sig.: To be taken every four hours.

Or:

℞ Tincturæ scillæ .....ʒ iv
Tincturæ digitalis .....ʒ iij
Aquæ cassiæ .....q. s. ad ℥ vj
Misce.
Sig.: Tablespoonful every four hours.

Remember that there are some conditions that contraindicate **digitalis**, or that require the drug to be administered very cautiously or in combination with other drugs. In a diseased heart muscle, especially in aortic incompetency, it should be given cautiously, and, no improvement following, it should be abandoned.

Fatty degeneration of the cardiac muscle and an extensive myocarditis contraindicate digitalis. In an abnormally slow heart, to be determined by cardiac auscultation and **not** by the **radial pulse**, digitalis should be combined with atropin (Ortner), thus:

℞ Atropini sulphatis .....gr. 1/80–gr. 1/60
Syrupi rubi idæi .....ʒ iv
Infusi digitalis .....q. s. ad ʒ vj
Misce.
Sig.: Tablespoonful every two or three hours.

In cases of extensive **arteriosclerosis, digitalis is dangerous**, unless the peripheral constriction is counteracted. **Nitroglycerin** should be combined with it, thus:

℞ Tincturæ digitalis,
Tincturæ nucis vomicæ .....āā ʒ ij
Spiritus glonoini .....♏ xij
Tincturæ cardamomi comp. q. s. ad ʒ iij
Misce.
Sig.: Dessertspoonful every three or four hours.

Two other drugs are of value, either when digitalis can not be used or to supplement its action. They are **strophanthus** and **spartein.**

Strophanthus may be given alone, 10 to 15 drops of the tincture, or as:

℞ Tincturæ strophanti,
Tincturæ valerianæ .....āā ʒ ij
Misce.
Sig.: 10 to 30 drops three times daily.

Spartein may be exhibited in solution, powder, or pills, as:

℞ Sparteinæ sulphatis .....gr. iv
Syrupi aurantii .....ʒ vj
Misce.
Sig.: Tablespoonful three or four times daily.

Or:

℞ Sparteinæ sulphatis .....gr. vj
Glycyrrhizæ .....q. s.
Misce et fiant pilulæ No. XX.
Sig.: Pill three or four times daily.

With sign of cardiac failure—pulse hardly palpable, heart tones weak, and the extremities cold and livid—**camphor** should be given hypodermatically.

℞ Camphoræ .....ʒ ss
Olei olivæ .....ʒ ij
Misce et fiat solutio.
Sig.: Inject 5 minims as necessary.

Venesection is life-saving when dilatation occurs. When signs of venous engorgement occur, and when there is orthopnea with cyanosis, the withdrawing of from 20 to 30 ounces of blood is urgently indicated.

Dropsy is frequently relieved by rest and a course of digitalis, but at times it is necessary to resort to other measures.

Diuretics are then indicated.

Diuretin, which is sodium salicylate of theobromin, has the advantage of stimulating the renal epithelium without injury. It is insoluble in cold water and is best given in powder, as:

℞ Diuretini .....gr. x
Fiat pulvere No. I. Dentur tales doses No. XXV.
Sig.: Powder every three hours.

Or it may be given in solution, as diuretin is soluble in hot water, as:

℞ Diuretini .....3 j–3 iss
Essentiæ pepsini (Fairchild) .....℥ ij
Aquæ .....℥ v
Dissolve diuretin by slightly heating water.
Misce et fiat solutio.
Sig.: Tablespoonful every two hours.

Theocin-sodium acetate gr. iij–gr. v four to six times daily, and should not be given on an empty stomach.

Calomel in many cases produces marked diuresis. The effect usually begins three or four days after beginning treatment and continues four or five days after treatment stops. It should be given only for three or four days and then stopped for an equal length of time. When it causes diarrhea, this may be overcome by giving gtt. iij–gtt. v of deodorized tincture of opium with it. Hydrogen peroxid should be used as wash for the mouth during the administration.

℞ Hydrargyri chloridi mitis .....gr. iij
Sacchari lactis .....gr. vj
Misce et fiat pulvere No. I. Dentur tales doses No. X–XII.
Sig.: Powder three times daily.

If the pulse is weak, it is better to administer digitalis three or four days before giving the calomel. Addison's or Niemeyer's pills are excellent, as they are a combination of digitalis, calomel, and squills āā gr. j. One pill should be given three or four times a day for four or five days. Care should be used because of salivation if continued for too long a time.

Cathartics may be used to remove dropsy, and of these concentrated solutions of the **salines** are best. Strong purges, like colocynth, should be avoided.

Multiple incisions or **paracentesis** is at times necessary to get rid of the dropsy, and should be resorted to when other measures fail.

Insomnia. A cup of hot gruel at bedtime, a tepid bath, or a light evening meal will be all that is necessary in many instances. Sodium bromid may be used.

℞ Sodii bromidi .....3 ij
Syrupi rubi idæi .....ʒ iss
Aquæ .....q. s. ad ʒ iv
Misce.
Sig.: Tablespoonful in evening and repeat in hour if necessary.

If salt is withheld from the food, better effect of the bromid will be obtained, as salt hastens elimination; a good point, also, to remember in cases of bromism.

Bromipin in from 2 to 4-dram doses in the afternoon and evening often acts better than bromids.

Veronal is a good, safe hypnotic. Best given in glass of milk. It may be given in 5-grain doses and repeated in one to two hours.

Cough is almost always present. When it becomes annoying, codein gr. ¼ should be given. An excellent combination is a tablet put up by Abbott, of Chicago, and has the following formula:

℞ Zinci sulphocarbolatis .....gr. j
Codeini sulphatis .....gr. ¼
Hyoscyaminæ hydrobromatis .....gr. 1/250
Strychninæ sulphatis .....gr. 1/134
Misce et fiat tabella No. I.
Sig.: Tablet every one or two hours.

The Schott Movements.

The Schott or Nauheim system of treatment of cardiac affections consists in the proper resistance exercise. The exercise is such that different groups of muscles work against a **gentle resistance** of the **physician** or attendant. Careful watch must be kept during the movements, and on any sign of circulatory or respiratory trouble the movements are at once suspended.

The following are some of the movements used, **each exercise being made against slight resistance applied by the physician:**

1. The arms are extended in front of the body at the level of the shoulder, with the palms touching. The arms are then moved slowly outward until they are in a line with each other, and are then brought forward to the original position.

2. The arms and hands hang at the side, with the palms forward. The forearm is flexed upon the arm until the fingers touch the shoulder. The forearm is then extended to its original position. This exercise is first done with one arm and then with the other.

3. The arms and hands in position as in No. 2. The arms are raised until the thumbs meet over the head and then return to original position.

4. Same as No. 3, except fingers are flexed at first phalangeal joint.

5. Arms, hanging in position of "attention," are brought forward parallel to each other until they are elevated to a vertical position, and then returned to original.

6. Same as No. 1, except with fists clenched.

7. Same as No. 2, except with fists clenched.

8. The arms, starting from the position of "attention," describe a circle by moving forward and upward until they are raised vertically; then each palm is turned outward and the arms descend backward to their original position.

9. The body is bent forward and then brought back to the erect position, the knees not being moved.

10. The body is rotated first to the right and then to the left without any movement of the feet.

11. The body is flexed first to the right and then to the left as far as possible without moving the feet.

12. The patient in the erect posture, feet close together, and one hand resting on a support, the opposite thigh is flexed as far as possible, then extended, and foot brought into its original position. The other hand is placed on a support and the opposite thigh is flexed the same as the other.

Palpitation.

Remember that this is more frequently found in women, and hysteria is often the causative factor.

Remember that **dyspepsia**, especially if associated with **neurasthenia**, is often the cause.

Remember that the symptoms vary from a **mild form**, as seen in **dyspeptic attacks**, when there is slight **fluttering of the heart**, to the **severe** forms, when cardiac action is **violent** and the **arteries throb forcibly.**

Remember that the **pulse rate** may be high—150 to 160—with diffuse flushing of the skin. A large quantity of **pale urine** may be passed after such an attack.

Remember that the presence of a **diastolic murmur** excludes **nervous palpitation.**

Remember that the area of **cardiac dullness** is **not enlarged**, thus excluding hypertrophy.

Remember that the fact of **intervals** between attacks, when the patient is **free of palpitation**, is strongly suggestive of **neurosis.**

Remember that if the patient is **anemic, murmurs** will be heard—systolic, soft, blowing—but the **valve**

sounds will be **normal** and there will be **no hypertrophy** of the heart.

Treatment.

First, quiet the patient's fears by assuring him that there is no actual danger. Second, seek out the cause, and inaugurate the proper hygienic and dietetic regimen.

Regular hours should be kept, and ten hours of sleep insisted upon. Tepid bath, at night if nervous, or in the morning on arising. The evening meal must be light—mainly soups.

Sexual excitement is particularly prone to keep up the trouble and patients should be specially warned. A **Weir-Mitchell** course of treatment is best where **neurasthenia** is the causative factor in women. **Anemia** demands iron. The following formulæ are good:

℞ Ferri et quininæ citratis .....gr. xl–gr. lx
Liquoris strychninæ .....♏ xl
Spiritus chloroformi .....ʒ ij
Acidi hydrobromici .....♏ lxx
Aquæ .....q. s. ad ℥ iv
Misce.
Sig.: Tablespoonful three times a day before meals.

Or:

℞ Ferri et ammonii citratis .....gr. lxx
Tincturæ nucis vomicæ .....ʒ iss
Sodii bromidi .....ʒ iv
Spiritus ammonii aromatici .....ʒ iv
Aquæ .....q. s. ad ℥ iv
Misce.
Sig.: Tablespoonful three times daily.

When gastric disturbances are the cause, as seen in distention of the stomach by gas formed by the decomposition of food, medication directed toward the prevention of the gas formation is indicated.

℞ Bismuthi carbonatis .....gr. x
Magnesii carbonatis .....gr. v
Sodii bicarbonatis .....gr. x
Aquæ laurocerasi .....℥ j
Aquæ caryophilli .....q. s. ad ℥ j
Misce et fiat haustus.
Sig.: To be taken two times a day an hour before meals. (Yeo.)

Or:

℞ Phenolis .....gr. xv
Glycerini .....℥ v
Bismuthi carbonatis .....℥ iiss
Lactis magnesii .....q. s. ad ℥ iv
Misce.
Sig.: Two teaspoonfuls after meals.

Aconite or **veratrum viride** may be used where there is great rapidity of cardiac action.

Digitalis is seldom indicated, but in obstinate cases it may be given in combination with **nux vomica.**

Remember that **strychnin,** in the form of tincture of nux vomica, and given in large doses, 20 drops three times daily, gives the best results in most cases.

Angina Pectoris.

Remember that this condition occurs almost exclusively in men, and, when occurring under thirty-five, syphilitic aortitis is an important factor.

Remember that **gout** and **diabetes** are important etiologic factors, and angina pectoris has been known to follow influenza.

Remember that **arteriosclerosis** is present in practically **all** the cases, but the degree of sclerosis of the palpable arteries is no criterion of the **degree** of degeneration of the **coronary vessels.**

Remember that in **angina** an attack is usually caused by **sudden exertion, mental worry, exposure to cold,** or a **hearty meal.**

Remember that the **onset** is sudden and usually **without** any warning.

Remember the **three** essential phenomena:

1. Pain, agonizing, felt in the precordium and beneath the manubrium. The pain radiates to the neck and into the **left arm** along the distribution of the **ulnar nerve.**

2. The sense of **constriction** of the **heart**—feeling as though the heart were being "grasped by a mailed hand."

3. The sense of **impending death.** The face is pallid, gray, and bathed in sweat.

Remember that **death** may occur during an attack.

Remember that paroxysms may occur **frequently** or at **long intervals** of time

Remember that there is a **neurotic** form that closely simulates **true** angina.

Remember that the neurotic form occurs more frequently in women—periodically; that the attack

lasts one or two hours, during which there is agitation and activity, associated with nervous symptoms, and is never fatal.

Treatment.

During an Attack.

Nitrite of amyl by inhalation frequently gives relief; from 3 to 5 minims on handkerchief or sponge may be inhaled. Patient should carry the "pearls," and be instructed to break one and inhale from handkerchief on first signs of an attack.

Chloroform inhalation should be resorted to if amyl nitrite inhalations do not give relief. Usually this is the most effective way, and it is free of danger.

Morphin hypodermatically may be used, but bear in mind that it requires a large dose to give relief. Give at least gr. ¼–gr. ss combined with atropin sulphate gr. $\frac{1}{100}$.

Interval Treatment.

Patients should live a **quiet life**, free from **worry** and **excitement. Muscular exertion** must not be **sudden** or **prolonged.**

Substances that, in the course of time, have a **toxic** action on the heart must be avoided, as these substances may be the cause of severe attacks of angina. This is particularly true of **tobacco**, and the peculiar thing about it is that the patient may use tobacco for years without any apparent ill effect

until, arriving at midlife, it begins to manifest its toxic action. **Tea** and **coffee** are likewise harmful, and should be excluded.

Elimination is exceedingly important in the treatment. **Toxic** substances absorbed from the bowels are, without doubt, potent factors in causing high blood pressure and vascular sclerosis. Many of the cases give a history of dyspepsia of long duration.

Diet is, therefore, important, and should be light and nutritious. An exclusive milk diet for a while is excellent. Cream should be added to the milk. Fresh vegetables and fruits are indicated. Eggs, butter, and the lean of fresh meat minced and lightly cooked may be allowed.

Regular evacuation of bowels is very essential, because it will check the formation of injurious substances. Aperient waters or salines may be used. An excellent dinner pill may be exhibited as follows:

℞ Extracti aloes,
Pulveris ipecacuanhæ,
Pulveris nucis vomicæ,
Saponis .....āā gr. j
Misce et fiat pilula No. I. Dentur tales No. XXV.
Sig.: Pill morning and evening.

Nitroglycerin should be given for its relaxing action upon the blood vessels; it may be given in doses of gr. $\frac{1}{100}$ and gradually increase until effect.

Spirits of glonoin may be used, which represents $\frac{1}{100}$ grain of nitroglycerin to the minim. Begin with 1 minim three times daily and increase 1 minim

every fifth day until the patient complains of flushing or headache.

Iodids, either the potassium or sodium, administered for one or two years, stopping ten days in each month, are excellent.

℞ Sodii iodidi .....ʒ iiss
Sodii arsenatis .....gr. ¾
Aquæ destillatæ .....q. s. ad ʒ v
Misce.
Sig.: Teaspoonful three times daily.

Or:

℞ Tincturæ digitalis .....ʒ j
Tincturæ strophanti .....ʒ j
Spiritus glonoini (1-percent) .....♏ xxiv
Tincturæ cardamomi .....q. s. ad ʒ iij
Misce.
Sig.: Teaspoonful three times daily.

Or:

℞ Potassii iodidi,
Aquæ .....āā ʒ j
Sig.: 20 drops three times daily, stopping for a week in each month, but continuing the treatment for a couple of years.

Water should be drunk liberally, unless the kidneys are so affected that elimination is interfered with.

Arteriosclerosis.

Remember that the **history** of the patient gone into carefully often reveals the **cause.** Syphilis, gout, arthritis, and heredity are the chief causes.

Remember that this is a change common to old age, and is similar to the sclerotic changes of other tissues.

Remember that the **two classes** of men most likely to develop it are the **laborer** who does heavy, muscular work, and the **brain worker** who is subject to a great amount of worry.

Remember that **high blood pressure**, a **palpable thickening** of the arteries, **hypertrophy** of the left ventricle of the **heart**, and the **accentuation** of the **aortic second sound** are pathognomonic of arteriosclerosis.

Remember that there are **renal symptoms** in some of the cases—viz.: **increased amount** of urine, **transient albuminuria**, and few **hyaline tube casts.**

Remember that in some cases the cardiac hypertrophy is followed by dilatation, and a **murmur** can be heard at the **apex.**

Remember that when the hypertrophy fails to compensate for the arterial resistance, there will be dyspnea, vertigo, and chronic bronchitis.

Remember that the subsequent symptoms depend upon the location of the sclerosis in the vascular area.

Remember that **sclerosis** of the **coronary arteries** may lead to thrombosis and sudden death, or aneurism of the heart, or angina pectoris.

Remember that if the cerebral vessels are the seat of extensive sclerosis, we may have **transient** hemiplegia, monoplegia, or aphasia.

Remember that these **attacks** are **transient**, lasting usually less than twenty-four hours, with perfect recovery, and may be followed later by a recurrence.

Remember that vertigo, slow pulse, and epileptiform attacks may occur.

Remember that **intermittent claudication** is very common. It is an intermittent lameness caused by muscular activity of certain groups of muscles of the limbs, followed by cramps.

Treatment.

Early diagnosis is necessary if anything of permanent value in treatment is to be done.

Diet should consist largely of milk and its products, with vegetables and fruits. Meat should be reduced to the minimum.

A quiet life, free from worry, and moderate open air exercise is indicated.

Baths of room temperature or sponging is excellent. Massage of the abdomen and extremities, if long continued, will lower the blood pressure.

The **bowels** should be kept open by vegetable or saline cathartics.

The kidneys must be kept active. For this purpose theobromin is useful.

℞ Theobromini .....gr. x
Fiat dosis No. I. Dentur tales doses No. XXX. Dispense in gelatin capsules.
Sig.: Capsule four to six times daily.

Other diuretics, described under heart disease, may be used if necessary.

Iodids and **arsenic** are the two drugs that give best results.

℞ Potassii or sodii iodidi .....3 ij vel 3 iv
Sodii bicarbonatis .....gr. lxxv
Aquæ menthæ piperitæ,
Aquæ destillatæ .....āā ʒ iiss
Misce et fiat solutio.
Sig.: Tablespoonful after meals.

Vierordt advises 2 or 3 grains of sodium iodid three times daily and gradually increase the dose until 15 grains three times daily are taken. This is kept up for from one to three years, omitting the treatment one week in five.

Calomel purge, frequently given, will greatly aid in the plan of treatment.

With a feeble heart the following combination is good:

℞ Sodii iodidi .....3 j
Sparteinæ sulphatis .....gr. xv
Pulveris glycyrrhizæ .....q. s.
Misce et fiant pilulæ No. XL.
Sig.: Pill after meals.

Arsenic may be exhibited as Fowler's solution, or as in the following:

℞ Arseni trioxidi .....gr. ss
Ferri reducti .....gr. xxx
Euquinini (Merck) .....3 j
Extracti rhamni purshianæ .....3 iss
Misce et fiant pilulæ No. XXX.
Sig.: Pill after each meal.

Or:

℞ Potassii iodidi .....ʒ iv
Ammonii chloridi .....3 j
Syrupi sarsaparillæ compositæ ....ʒ j
Aquæ destillatæ .....q. s. ad ʒ ij
Misce.
Sig.: Teaspoonful in milk after meals.

If cardiac insufficiency manifests itself, tonics are indicated, and of these perhaps tincture of digitalis in 10-minim doses, combined with 1 minim of spirits of glonoin, three times daily, or oftener if the symptoms are urgent.

Venesection, with abstraction of 20 ounces of blood, gives immediate relief in cases of engorgement. The amount of blood withdrawn should not be replaced with the saline solution, as it is the reduction of the circulating liquid that is desired.

CHAPTER X.

DISEASES OF THE LUNGS AND PLEURÆ.

Acute Bronchitis.

Remember that in typhoid and malaria it is an early symptom.

Remember that influenza, measles, and whooping-cough are accompanied by acute bronchitis.

Remember that substernal soreness and in the region of the attachment of the diaphragm is common, and is due to cough.

Remember that fever is frequently present, and may reach 102° or 103° F., but usually lasts only a few days.

Remember that cough is "tight" in early part of attack, due to tenacious, scanty mucus adhering to swollen mucosa of the tubes.

Remember that sibilant or sonorous rales are heard during this period of dry cough.

Remember that the larger the bronchi affected, the less are generally the signs caused by the bronchitis.

Remember that the percussion sound over the thorax is never altered by uncomplicated bronchitis.

Remember that blowing sounds are never heard in bronchitis, but that the vesicular murmur is heard, and the only alteration is that it is sharp and loud (puerile), and there is prolonged expiration.

Remember that mucous, bubbling rales appear when the cough loosens. Bronchial fremitus may be felt on palpation.

Remember that cyanosis and increased respiratory rate in dyspnea that are not relieved by the cough indicate the process has involved the small tubes—capillary bronchitis.

Remember that the epigastrium and hypochondriac region are **retracted** during inspiration in capillary bronchitis, in contradistinction to the normal inspiratory bulging.

Remember that the percussion sound is not altered. If dull areas are found, it signifies bronchipneumonia or atelectasis. Therefore examine such a chest daily for this important change in percussion.

Remember that bronchial breathing heard on auscultation is never present in any form of bronchitis.

Remember that spirals are found in the sputum in capillary bronchitis; also Charcot's crystals.

Treatment.

In mild cases, hot foot bath, a mustard plaster to the chest, applied over the sternum and extending out to nipple line on either side.. The plaster should not remain on long enough to blister. A glass of hot lemonade at bedtime will suffice in mild cases. For the severer forms a hot bath at night on going to bed. When Turkish baths are taken, one must go directly from the bath to bed, because any exposure after such a bath is exceedingly dangerous.

Bowels should be moved freely by saline.

The atmosphere of the room should be moist. This may be done by steam from boiling water. This is better if salt (NCl) and soda are added to it.

The cough may be relieved by opium, or, better, codein. In the dry stage the secretion of mucus must be stimulated.

℞ Codeinæ phosphatis .....gr. v–gr. viij
Liquoris ammonii acetatis .....℥ iv
Syrupi ipecacuanhæ .....℥ ij
Syrupi pruni virginianæ .....℥ iv
Aquæ .....q. s. ad ℥ iv
Misce et fiat solutio.
Sig.: Teaspoonful every two hours.

Or:

℞ Ammonii carbonatis .....℥ ij
Ammonii iodidi .....℥ iij
Syrupi glycyrrhizæ .....℥ ij
Syrupi tolutani .....℥ ij
Misce et fiat solutio.
Sig.: Teaspoonful every two or three hours in water.

The above combinations are particularly useful in capillary bronchitis.

℞ Ammonii chloridi,
Sodii salicylatis .....āā ℥ ij
Tincturæ hyoscyaminæ .....℥ vj
Misturæ glycyrrhizæ comp. q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every three hours.

Or:

℞ Codeinæ phosphatis .....gr. iv
Ammonii carbonatis .....gr. xxx
Tincturæ hyoscyaminæ .....℥ iv
Syrupi pruni virginianæ .....℥ vj
Aquæ camphoræ .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every two hours.

Or:

℞ Vini antimonialis .....3 ij
Spiritus ætheris nitrosi .....3 iv
Liquoris ammonii acetatis .....ʒ ij
Tincturæ camphoræ compositæ ....3 ij
Aquæ .....q. s. ad ʒ iv
Misce.
Sig.: Tablespoonful every three or four hours. To be used with tense pulse, fever, and dry, hot skin.

With the establishment of secretion, the medication should be changed. This is now the time for squills and senega, but they are contraindicated until this stage is reached.

℞ Infusi senegæ .....ʒ iv
Ammonii carbonatis .....gr. xxxij
Tincturæ scillæ .....3 iiss
Spiritus chloroformi .....3 ij
Aquæ .....q. s. ad ʒ viij
Misce et fiat misturæ.
Sig.: 2 tablespoonfuls every four hours.

Or:

℞ Tincturæ veratri viridi .....♏ xx
Vini antimonialis .....3 iv
Tincturæ opii camphoratæ .....3 iiss
Liquoris ammonii acetatis .....ʒ ij
Misce.
Sig.: Teaspoonful in little water every two, three, or four hours.

Or:

℞ Camphoræ .....gr. j
Extracti belladonnæ .....gr. ⅙–gr. ¼
Quininæ sulphatis .....gr. ij
Pulveris ipecacuanhæ et opii.....gr. j
Misce et fiat capsula No. I. Dentur tales No. XV.
Sig.: Capsule hourly for four doses, then every three hours.

Or:

℞ Ammonii chloridi .....3 j
Terpini hydratis .....3 j
Pulveris ipecacuanhæ et opii .....gr. xxiv
Misce et fiant capsulæ No. XXIV.
Sig.: 1 or 2 capsules, according to age, every three hours.

Or:

℞ Ammonii chloridi .....3 ij
Potassii iodidi .....gr. xv
Tincturæ ipecacuanhæ .....♏ xxx
Misturæ glycyrrhizæ comp. q. s. ad ℥ iv
Misce.
Sig.: Tablespoonful every four hours during dry stage.

Or:

℞ Syrupi ipecacuanhæ .....3 iv
Ammonii chloridi .....ʒ iv
Tincturæ opii camphoratæ .....3 ij–3 iij
Syrupi tolutani .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every two hours as a sedative expectorant.

Aconite may be used for reduction of fever. It should not be used in old people or in cases where the heart is weak.

Diet should be light. Liquid for a few days is best. Tonics may be needed during convalescence, and there is nothing better than elixir of iron, quinin, and strychnin, a teaspoonful after meals.

Chronic Bronchitis.

Remember that this is often secondary to other conditions, as emphysema, heart disease, typhoid fever, and phthisis.

Remember that occupation is a very important

factor in its causation—such occupations where gases or dust are inhaled.

Remember that it is common in the gouty conditions, often spoken of as uric acidemia.

Remember that this is a disease of the aged and is the well-known "winter's cough" of old men.

Remember that there are two forms—viz., dry and moist, the latter also known as bronchorrhea.

Remember that the dry is characterized by severe fits of coughing, with very little secretion brought up.

Remember that shortness of breath on exertion, so common in these cases, is due to an associated emphysema or cardiac weakness.

Remember that the sputum is usually purulent or mucopurulent, and generally abundant.

Remember that inspection shows a distended chest with limited movement, due to coexisting emphysema.

Always examine the heart and urine in all cases of chronic bronchitis to determine whether the bronchitis is primary or secondary.

Remember that in pulmonary tuberculosis, fever, emaciation or loss of weight, localized consolidation at one or both apices, and the tubercle bacilli are present.

Remember that in abscess of the lung and in pulmonary gangrene shreds of lung tissue may be present in the sputum.

Treatment.

The patient should be sent to a warm climate, especially for the winter months, if possible. During cold or wet weather he should remain indoors, but should be in the open air on all mild, sunny days.

Flannel should be worn next to the skin. The diet should be nutritious and easy of digestion.

The bowels should be kept open by laxatives if necessary. Salines, with an occasional calomel purge, is best.

In cases of dry bronchitis it is better that the atmosphere of the room be kept moist by vapors.

The medicinal treatment depends, first, upon whether it is a dry or moist catarrh, and, second, upon the underlying condition causing it. In dry catarrh the following are useful:

℞ Sodii bicarbonatis .....3 j
Sodii chloridi .....3 ss
Ammonii carbonatis .....3 ss
Spiritus chloroformi .....3 ij
Aquæ .....q. s. ad ℥ vj
Misce et fiat misturæ.
Sig.: 2 tablespoonfuls every four hours in equal amount of water.

Or:

℞ Pulveris ipecacuanhæ .....gr. j
Extracti hyoscyaminæ .....gr. j
Codeinæ phosphatis .....gr. ss
Misce et fiat pilula No. I.
Sig.: Pill at bedtime for cough.

Or:

℞ Potassii iodidi .....3 ss
Potassii bicarbonatis .....ʒ ss
Ammonii chloridi .....3 ij
Codeinæ phosphatis .....gr. viij
Aquæ chloroformi .....q. s. ad ʒ viij
Misce et fiat misturæ.
Sig.: Teaspoonful every two hours or tablespoonful every four hours.

Or:

℞ Olei eucalypti .....3 iss–3 iij
Codeinæ phosphatis .....gr. vj
Misce et fiant capsulæ No. XVIII.
Sig.: Capsule every four hours.

Or:

℞ Balsami copaibæ .....3 j–3 ij
Ammonii chloridi .....3 ij
Extracti glycyrrhizæ pulveris .....3 j
Misturæ ammoniacæ .....q. s. ad ʒ iij
Misce et fiat misturæ.
Sig.: Dessertspoonful every four hours.

In moist catarrh the expectorants recommended in acute bronchitis, or:

℞ Terpini hydratis .....gr. xv
Alcoholis,
Aquæ,
Syrupi rubi idæi .....āā ʒ iss
Misce.
Sig.: Tablespoonful five times daily.

Turpentine is excellent, but the kidneys should be watched closely:

℞ Olei terebinthinæ .....3 j
Mucilaginis acaciæ .....ʒ ij
Misturæ amygdalæ .....q. s. ad ʒ vj
Misce.
Sig.: Tablespoonful two or three times daily.

Creosote is excellent, especially combined with codliver oil.

Where the bronchitis is of rheumatic or gouty origin, the following may be used:

℞ Sodii salicylatis .....3 vj
Glycerini .....3 iv
Vini colchici .....3 vj
Syrupi scillæ compositæ .....ʒ iss
Tincturæ opii camphoratæ .....ʒ ij
Misce et fiat misturæ.
Sig.: Teaspoonful with water every two or three hours.

Benzoic acid or its salts are useful.

℞ Terpinolis .....3 j
Sodii benzoatis .....3 j
Extracti glycyrrhizæ .....gr. xx
Sacchari lactis .....gr. xxx
Misce et fiant capsulæ No. XXX.
Sig.: 2 to 4 capsules three times daily.

Or:

℞ Terebeni .....gr. xcvj
Eucalyptolis .....♏ xc
Syrupi yerba santa .....q. s. ad ʒ ij
Misce.
Sig.: Teaspoonful every two or three hours.

Inhalations of antiseptics and deodorants often act very beneficially.

℞ Thymol .....gr. xv
Eucalyptolis .....♏ xx
Creosoti (Beechwood) .....3 ij
Olei pini sylvestris .....3 iv
Olei gaultheriæ .....3 j
Misce.
Sig.: Inhale from small cup while being warmed over a spirit lamp. (Merck.)

Or:

℞ Mentholis .....gr. xx
Eucalypti .....♏ xx
Chloroformi .....q. s. ad ℥ iv
Misce.
Sig.: Inhale 5 to 10 drops from palm of the hand three times daily.

Or:

℞ Olei eucalypti .....♏ xxx
Mentholis .....gr. x
Thymol .....gr. v
Guaiacolis crystallisati .....gr. vij
Alcoholis .....q. s. dissolve
Tincturæ benzoini compositæ q. s. ad ℥ ij
Misce et fiat misturæ.
Sig.: Float teaspoonful on pint of boiling water in can and inhale the steam two times daily.

Where the pulse is weak and stimulants are needed, the elixir of iron, quinin, and strychnin, teaspoonful three times daily after meals, is excellent. In emphysema, strychnin is the remedy par excellence.

If the bronchitis is due to engorgement from cardiac disease, digitalis should be used as outlined under treatment of valvular disease of the heart.

Nephritis, when present as the cause, should be treated rather than the bronchitis.

Bronchiectasis.

Remember that it very frequently follows attacks of grippe.

Remember that the sputum is expectorated in large masses, is greenish-yellow, and has a bad odor.

Remember that over the cavities formed by the dilatation will be found tympany, the cracked-pot sound, bronchial breath sounds with rales, and bronchophony. The vocal fremitus is increased.

Remember that when the cavity fills with secretions, all the above signs will disappear, but will suddenly reappear following a coughing spell and expectoration.

Remember that cavity with signs of catarrh in both apices, and sputum brought up frequently in small quantities rather than occasionally by mouthfuls, indicate tuberculosis of the lungs.

Remember that the presence of the tubercle bacilli in the sputum is positive sign of phthisis pulmonalis.

Remember that the cough is absent during the day in bronchiectasis and occurs in paroxysms night and morning on change of position.

Remember cerebral abscess is a very frequent complication in bronchiectasis.

Treatment.

Internal antiseptics that are excreted through the bronchial mucosa are indicated. Oil of turpentine is very effective given in 10 to 15 drops in milk three or four times daily, or it may be given in capsules, as:

℞ Olei terebinthinæ rectificati .....♏ x vel ♏ xx
Dentur tales capsulæ mollis No. L.
Sig.: 2 or 3 capsules daily with glass of milk.

Myrtol, an oily liquid obtained from the leaves

of the common myrtle, is excellent, acting both as antiseptic and deodorant to bronchial secretions.

℞ Myrtolis ..... ♏ ij
Fiat dosis No. I. Dentur tales capsulæ mollis No. L.
Sig.: 3 to 6 capsules daily.

Eucalyptus, either as a liquid or the oil, is good.

℞ Tincturæ eucalypti ..... 3 ss–3 j
Syrupi aurantii ..... 3 iv
Aquæ destillatæ ..... q. s. ad ℥ vj
Misce et fiat misturæ.
Sig.: Tablespoonful every two hours.

Or:

℞ Olei eucalypti ..... ♏ iss–♏ iv
Fiat capsula No. I. Dentur tales mollis capsulæ No. L.
Sig.: Capsule five or six times daily.

Remember that sedatives should not be given, lest gangrene develop, but ipecac may be used to aid in the expulsion of the putrid secretions. The creosote vapor bath is very satisfactory in many cases. The patient's eyes must be protected by well-fitting goggles and the nostrils stuffed with cotton-wool. It should be given in a small room. A dram of creosote is poured upon water in a saucer and vaporized by placing over a spirit lamp. The bath should be given on alternate days for about fifteen minutes, and, if well borne, gradually lengthen the time to one hour and give daily.

Surgical interference is indicated when a single large cavity can be definitely localized. It should be opened externally and drained.

Bronchial Asthma.

Remember that in some cases there are premonitory symptoms, such as chilliness, a sense of tightness in the chest, indigestion, and the passage of a large quantity of urine.

Remember that many of the attacks occur in the night and the patient awakes with a sense of suffocation.

Remember that the dyspnea is expiratory and that inspiration is short, but expiration prolonged to twice the usual time.

Remember that the respiratory rate is not increased.

Remember that the abdominal muscles are tense and hard, being used to assist in expiration.

Remember that the percussion sound is louder and has a peculiar note—the "bandbox" sound.

Remember that the vesicular murmur on auscultation is suppressed and may be replaced by bronchial breathing.

Remember that dry, sibilant, sonorous, whistling rales are heard on **expiration.**

Remember that the appearance of the patient during a paroxysm is quite characteristic—face, pale; expression, anxious; speech, impossible; later perspiration, with cold extremities.

Remember that the sputum is very distinctive. Early in the paroxysm it is tenacious, brought up with difficulty, and is formed into rounded, gelatinous masses—the pearls of Lænnec.

Remember that these gelatinous masses, when unfolded, are spirally-arranged molds of the bronchioles.

Remember that these molds are the Curschmann spirals, and microscopically are found to consist of filaments of mucin, in which are entangled leucocytes and the majority of them **eosinophils.**

Remember that Charcot's crystals are found very frequently and often called asthma crystals. They are pointed, octohedral crystals.

Remember that eosinophils of the blood are greatly increased.

Remember that in spasm of the glottis the dyspnea is inspiratory, and there are extensive excursions of the larynx during respiration and inspiratory retraction of the epigastrium.

Remember that the tympany from the acute inflation of the lungs is absent in spasm of the glottis.

Remember that in bronchial asthma the dyspnea is paroxysmal and in the interval respiration is normal, while in emphysema of the lungs the respiratory symptoms are continuous.

Remember that the dyspnea of cardiac asthma is both inspiratory and expiratory, and the abnormal pulmonic sounds of bronchial asthma are absent in cardiac asthma.

Treatment.

The treatment divides itself into the treatment of an attack and treatment in the interval. Do not prevent the patient from employing any means which

has already proved useful in his case in preventing or stopping attacks.

Treatment of an Attack.

A hypodermic of morphinæ sulphatis gr. ¼–gr. ⅓, with atropinæ sulphatis gr. $\frac{1}{80}$ and spiritus glycerylis nitratis ♏ ij, will give the most prompt and reliable results.

Adrenalin solution (1:1000) ♏ v–♏ x hypodermatically will usually give prompt relief, but it should not be used in arteriosclerosis.

Chloral hydrate may be used, but the dose required (gr. xxx–gr. xl) is entirely too large for safety.

Tobacco smoke, hot coffee, or fresh air often gives relief.

Chloroform inhalations usually act promptly, especially in children.

Pilocarpin gr. ⅛ hypodermatically, by producing profuse perspiration, will often relax the bronchial mucosa.

Pearls of nitrite of amyl may be broken on a handkerchief and inhaled; 2 to 5 drops may be used.

Fluidextract of grindelia ♏ x–♏ xx is often excellent, especially if bronchitis be present.

The leaves of stramonium, belladonna, or hyoscyamus may be made into cigarettes and smoked, or they may be powdered and burned in a saucer and the smoke inhaled. Saltpeter may be mixed with the leaves in a saucer, or the cigarettes may be

soaked in a solution of saltpeter and dried, and then smoked, as:

℞ Pulveris stramonii,
Pulveris belladonnæ,
Pulveris hyoscyaminæ,
Pulveris potassii nitratis .....āā ʒ j
Misce.
Sig.: Burn half a teaspoonful in a shovel and inhale fumes.

Interval Treatment.

If the cause can be detected, it should of course be removed or corrected.

Iodids and belladonna will give better results than any other form of medication.

℞ Potassii iodidi .....gr. xl
Tincturæ belladonnæ .....ɱ xl
Spiritus ætheris compositæ .....ʒ ij
Aquæ .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful three or four times daily.

Or:

℞ Liquoris potassii arsenitis .....ʒ j
Tincturæ belladonnæ .....ʒ j
Potassii iodidi .....ʒ ij
Fluidextracti grindeliæ (U. S. P.)..ʒ vj
Aquæ .....q. s. ad ℥ iv
Misce.
Sig.: Teaspoonful after meals.

Or:

℞ Potassii iodidi .....ʒ iiss–ʒ iv
Tincturæ belladonnæ .....ʒ j–ʒ ij
Essentiæ pepsini (Fairchild) q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every three hours until relief is permanent.

Or:

℞ Potassii iodidi .....3 ij
Liquoris potassii arsenitis .....3 j
Vini ipecacuanhæ .....3 ij
Tincturæ hyoscyaminæ .....3 iv
Aquæ chloroformi .....q. s. ad ℥ viij
Misce.
Sig.: Tablespoonful after meals.

Iron should be administered if anemia be present.

℞ Quininæ hydrochloridi .....gr. xxv
Ferri carbonatis .....gr. xxx
Arseni trioxidi .....gr. ¼
Misce et fiant capsulæ No. XV.
Sig.: Capsule after meals.

Diet of asthmatics should be simple, as an indiscretion will often cause an attack.

The bowels must be kept regular, either by the use of mineral waters or saline cathartics.

An equable climate is to be recommended if the patient is able to afford it.

If there is emphysema, high altitudes are not well borne and should not be recommended.

Where chronic bronchitis is present, a warm, dry atmosphere is best. In such a climate the open air treatment, as used in pulmonary tuberculosis, will give best results.

Edema of the Lungs.

Remember that, in rare instances, the exudation of fluid into the alveoli may be so rapid and abundant that dullness, increased pectoral fremitus, bronchial breathing, and the signs of complete absence of air from the alveoli occur.

Remember that there are two forms—the inflammatory and that due to engorgement.

Remember that the onset is usually sudden, with rapid breathing, a feeling of oppression, and pain in the chest.

Remember that dyspnea and cyanosis occur—the signs of the accumulation of carbon dioxid in the blood.

Remember that rales, moist and bubbling, may be heard.

Remember that the sputum is characteristic, and is copious, foamy, and serous (resembling soap suds), or it may be blood-tinged.

Remember that the second pulmonic sound of the heart is accentuated, and in that form due to engorgement the pulse is small.

Remember that it may prove fatal in a few hours, or it may pass off and the patient have recurrence of the attack.

Remember that acute edema of the lung may follow aspiration of the thorax for the removal of fluid.

Treatment.

Bleeding is the first and most beneficial procedure to be adopted; 6 to 10 ounces of blood should be taken.

Cardiac stimulants, those acting quickest, is the next step in treatment. Camphor, ether, or strophanthus are to be given hypodermatically.

Morphin and atropin are practically a specific in

many cases. Atropin is especially indicated and should be given in a rather large dose.

Ergot is useful, and may be exhibited as follows:

℞ Fluidextracti ergotæ ..... ♏ xlv
Spiritus ætheris .....3 j–3 iss
Aquæ cinnamomi .....q. s. ad ℥ v
Misce.
Sig.: Tablespoonful every half to one hour.

Purging with croton oil ♏ ij–♏ iij on the tongue will often assist in checking the transudation of fluid. Elaterium may be used. These drastic purgatives should not be used in cardiac disease, and very cautiously if nephritis be the cause of the edema.

Dry cupping and the mustard draft are useful adjuncts.

Lobar Pneumonia.

Remember that in no other infectious disease is a chill so constant or so severe. It usually begins suddenly, without any premonitory symptoms.

Remember that the pain in the side follows close after the chill, and is severe, especially when the patient coughs.

Remember that the hurried, shallow breathing is often accompanied by a short expiratory **grunt.**

Remember that the fever rises rapidly, and reaches the fastigium in twelve hours or less.

Remember that by the end of the second day there is the **rusty sputum**—scanty, viscid, and blood-stained.

Remember that cyanosis and dyspnea occur early, due to pulmonary obstruction.

Remember that the respiration rate is greatly increased, reaching 40 to 60 per minute.

Remember that the pulse is strong and full at the beginning, but later becomes feeble and small, running 90 to 120 per minute.

Remember that a pulse of 140 to 150 is an unfavorable prognostic omen.

Remember that the pain may be referred to the abdomen instead of the chest—very common with children.

Remember that any abdominal pain of sharp, lancinating character calls for examination of the chest for pneumonia.

Remember that a red spot on the cheek of the affected side is very frequently seen in pneumonia, and that herpes at the junction of the mucous membrane and the skin of the lips occurs in nearly half the cases.

Remember that inspection shows a decided difference in the expansion of the two sides.

Remember that marked movement of the chest-wall over the affected lung may be observed, due to the pulsation of the consolidated lung.

Remember that pleural friction may be better felt than heard, and vocal fremitus on palpation is greatly increased in comparison with the corresponding point on the healthy side.

Always ask the patient to cough, and thus clear the larger tubes, before palpation.

Remember that percussion reveals pathologic

changes—viz., **Skoda's** resonance—found in the stage of engorgement. The note is high-pitched and has a somewhat tympanitic quality. This may also be obtained over the lung tissue bordering a consolidated area. In the stage of hepatization the note is dull or flat.

Remember that you never find the wooden flatness of effusion; neither is the sense of resistance so great.

Remember that on auscultation, early in the disease, is heard a fine, crepitant rale—a series of minute cracklings heard close to the ear.

Remember that the crepitant rale is heard at the end of inspiration and may not be heard until a full breath be drawn.

Remember that tubular breathing is heard over the dull area of consolidation. It is heard first with expiration, but later it becomes more intense, of high pitch, perfectly dry, and of equal length with inspiration and expiration.

Remember that the second heart sound over the pulmonary artery is accentuated.

Remember that increased cardiac dullness to the right of the sternum and the pulmonary second sound becoming less distinct indicate beginning of heart failure.

Remember that the soft, easily compressed pulse, with a gray, ashy face, feet and hands cold, clammy perspiration, signifies a profound toxemia.

Remember that there is a diminution of the chlo-

rids in the urine, and this does not occur in empyema or pleurisy with effusion.

Remember that the continuous absence of leucocytosis is to be regarded as an unfavorable sign.

Remember that in the old and debilitated the onset is insidious, and the symptoms are ill-defined and latent.

Remember that rapid pulse, rapid respiration, and fever call for a careful examination of the chest.

Remember that in cerebrospinal meningitis there are muscular rigidity and retraction of the head. Kernig's sign is present and lumbar puncture gives a turbid spinal fluid.

Remember that in a hemorrhagic infarct the blood is less thoroughly mixed with the sputum, absence of fever, circumscribed dullness, and the presence of a condition capable of giving rise to embolism.

Remember that in edema the sputum is frothy and thin, and dullness, if present, is found over the base of both lungs posteriorly.

Remember that broncho-pneumonia usually follows some other condition, as measles or other acute infectious diseases; comes on gradually without a chill, runs an indefinite course and terminates by lysis.

Remember that lobar pneumonia sets in abruptly with a chill in a person of previous good health, runs an acute course and terminates by crisis.

Remember that in pleurisy with effusion the onset is with chilliness, but no distinct chill; moderate

fever; the percussion note is flat, with a peculiar sense of inelasticity; vocal fremitus feeble or abolished, and bronchial breathing distant and faint; the S-shaped line of dullness, with a change on a change of position of the patient; finally the insertion of the aspirator needle and the withdrawal of fluid settles the diagnosis.

Remember that in many cases acute tuberculopneumonic phthisis can not be differentiated until softening occurs and elastic fibers and tubercle bacilli appear in the sputum. The important points are heredity, previous cough, and loss of weight; irregular fever, corresponding to the remittent type rather than the continuous; circumscribed areas of high-pitched, ringing, coarse, crepitant rales, persisting with little change, and a mucopurulent, greenish sputum.

Treatment.

Remember that in the treatment of lobar pneumonia the conservation of the heart is paramount.

The patient should be isolated, the room should be well ventilated, and the temperature of 65° to 75° F.

The fresh air treatment lessens cough, improves appetite, lowers temperature, and diminishes pulse and respiration rate.

Rest in bed, with as little disturbance as possible, conserves the vital forces and relieves the heart of unnecessary work.

The diet should be nutritious and easily digested. Milk should constitute the larger portion. To this may be added eggs, meat broths, jellies, and gruels.

Food should be given at stated, short intervals in definite amounts. Plenty of pure water should be given throughout the attack, unless evidences of cardiac failure develop, when it should be restricted.

Calomel, either in fractional doses or in one dose of 2 to 3 grains, followed by one of the salines, is indicated in the beginning; subsequently the bowels should be kept free by the use of the salines.

The skin should be kept active by sponging and the kidneys by use of water.

Pleuritic **pain** at the onset may be relieved, in some cases, by hot or cold applications. Strapping of the chest on the affected side with adhesive strips gives great relief. Morphin gr. ⅛–gr. ¼, with atropin gr. $\frac{1}{150}$, will be required to relieve the severe pain.

Tympanites, when it occurs, can often be relieved by a careful revision of the diet. A colon tube may be used to draw off the gas, or hot turpentine stupes. Some of the cases are due to paresis of the muscular coat of the intestines, when a hypodermic of strychnin nitrate gr. $\frac{1}{30}$ three or four times in twenty-four hours should be administered. At times a hypodermic of eserin will give prompt relief. In severe cases a hypodermic of aseptic ergot intramuscularly is of the greatest value.

Baths should be used. Tepid baths or sponging

is best. The cold bath should not be used unless the temperature is very high.

Venesection is life-saving in many sthenic cases with signs of engorgement and failing right heart. The withdrawal of 20 to 30 ounces of blood will relieve the congestion and tide the patient over his critical period.

Expectorants are not to be given indiscriminately, because they derange digestion.

The dry, irritating cough is best relieved by codein, and ammonium chloridi will render the sputum less tenacious. They are best given in an acid mixture, as:

℞ Codeinæ sulphatis .....gr. iij–gr. v
Ammonii chloridi .....ʒ iss–ʒ ij
Syrupi acidi citrici .....℥ iss
Aquæ .....q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every two, three, or four hours as needed.

If the cough is not troublesome, omit the codein. Sleeplessness is usually controlled by sponging or bath and fresh air. If the patient is still unable to sleep, some hypnotic should be given. If the circulation is good, trional or sulphonal gr. x in hot milk or whisky may be given. Veronal gr. v is safer and very efficacious.

Morphin in small doses should be given where the heart is weak. When the heart begins to fail, strychnin should be used, but it should not be pushed except in emergency. Given hypodermatically, gr. $\frac{1}{30}$ every six hours, is best.

If there is profuse cold sweating, with cardiac failure, atropin sulphate gr. $\frac{1}{120}$, repeated every six hours, is indicated.

Whisky or brandy should be given to alcoholics, and may be used when cardiac stimulants are indicated. Half an ounce every three hours until effect.

Aromatic spirits of ammonia and spirits of mindererus are excellent where mild stimulants are needed.

Digitalis is highly recommended by many in severe cases. The infusion is probably the best, but the tincture, in large doses (♏ v–♏ xv) every three hours, is used.

℞ Potassii acetatis .....3 j
Infusi digitalis (leaves) .....ʒ iij
Misce.
Sig.: Tablespoonful every two or three hours, depending upon the severity of the case.

Or:

℞ Spiritus ammonii aromatici .....ʒ ss
Fluidextracti digitalis .....3 iiss
Glycerini .....q. s. ad ʒ iv
Misce et fiat misturæ.
Sig.: Teaspoonful every three or four hours, or oftener if needed.

Quinin is very generally given in pneumonia. Yeo makes very decided claims for it given in an effervescent form—in gr. j–gr. iij every three hours. His method of prescribing it is as follows:

℞ Quininæ sulphatis .....gr. j–gr. iij
Acidi citrici .....gr. x–gr. xv
Sacchari lactis .....gr. x
Misce et fiat pulvere No. I.

This powder is dissolved in a little water and added to the following draught:

℞ Potassii bicarbonatis .....gr. x–gr. xv
Ammonii carbonatis .....gr. iij–gr. v
Syrupi aurantii .....ʒ j
Aquæ .....q. s. ad ʒ j
Misce et fiat haustus. This dose to be given every two or three hours.

The fact that quinin in small doses has been shown to increase leucocytosis probably explains its beneficial action. Never give large doses, and best not given in consolidation.

Aconite and veratrum are often used in the early stage or that of engorgement with the idea of jugulating the disease. They are best given in small and oft-repeated doses, and the alkaloid can be used to better advantage. Neither drug should be used after the congestion is succeeded by consolidation.

Creosote, or, better, creosotal (the carbonate), is highly extolled. It is taken into the blood and excreted through the lungs, and thus its germicidal action is obtained. It is given in 10-minim doses in capsules or in an emulsion.

At the crisis the collapse following is best overcome by hypodermic of atropin.

Nitroglycerin is especially indicated when the urine is scanty and contains more than a trace of albumin.

Notwithstanding its high recommendations, hypodermoclysis is rarely indicated in pneumonia, and the very excellent contraindication exists of too much fluid for a tiring heart.

In convalescence great care should be exercised to protect a heart that has been overworked, that dilatation may not occur. A return to a full diet should be slow, and the patient kept at rest for two months after his apparent recovery.

Broncho-Pneumonia (Lobular Pneumonia).

Remember that this occurs most frequently at the extremes of life, and that it is a terminal event in many chronic conditions.

Remember the frequency with which it follows the contagious diseases of childhood.

Remember that chronic Bright's disease in the aged is often complicated by broncho-pneumonia.

Remember that the tubercle bacilli often produce a fatal broncho-pneumonia.

Remember that the disease is almost always bilateral, while lobar pneumonia is almost always unilateral and occurs in adults.

Remember that if in convalescence from measles or in pertussis a child has an accession of fever, with cough, rapid pulse, and rapid breathing, and on auscultation fine rales be heard, a diagnosis of broncho-pneumonia should be made.

Remember that dyspnea is a prominent symptom, and the deficiency of air is shown by the rapid respiratory rate.

Remember that cyanosis develops later, due to accumulation of carbon dioxid.

Remember that the fine, subcrepitant rales are

heard at first, and later tubular breathing over the affected areas.

Remember that percussion usually shows a circumscribed relative dullness, which is usually bilateral, radiating along the spinal column.

Remember that miliary tuberculosis is usually localized in the apices of the lungs, and the presence of choroidal tubercles in the eye facilitates the diagnosis.

Treatment.

The proper care of a child convalescing from measles, diphtheria, and whooping-cough will prevent such a serious complication as broncho-pneumonia.

Keep the room at an even temperature and the air moist with vapor.

Calomel gr. $\frac{1}{10}$–gr. $\frac{1}{6}$ should be given hourly until a good movement from the bowels is obtained. The bowels must be kept open during the illness with salines.

Fever, if high, use water, either as cool sponging, pack, and, in severe cases, the bath. Keep ice cap to the head.

Aconite or veratrum, as the tincture, may be used cautiously to lower temperature. It is best given alone in drop doses every half to one hour in water until effect, then every one or two hours. A good combination is the following, and it possesses the advantage of having a stimulant in combination:

℞ Aconitin amorphous,
Veratrini .....āā gr. 1/10
Digitalini .....gr. 1/5
Aquæ .....q. s. ad ℥ ij
Misce et fiat solutio.
Sig.: Teaspoonful every half hour for 5 doses, then hourly.

A good saline fever mixture:

℞ Potassii citratis .....gr. xxx–gr. l
Liquoris ammonii acetatis .....℥ j
Spiritus ammonii aromatici .....℥ iv
Syrupi aurantii .....℥ vj
Aquæ .....q. s. ad ℥ ij
Misce et fiat solutio.
Sig.: Teaspoonful every two hours.

To this may be added sodium bromid if the child is nervous.

Cough is best relieved with codein.

℞ Codeinæ phosphatis .....gr. ij–gr. iv
Ammonii carbonatis .....gr. xxx
Tincturæ hyoscyaminæ .....℥ iv
Syrupi pruni virginianæ .....℥ vj
Aquæ camphoræ .....q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every two hours.

Or:

℞ Ammonii carbonatis .....℥ ij
Ammonii iodidi .....℥ iij
Syrupi glycyrrhizæ .....℥ ij
Syrupi tolutani .....℥ ij
Misce.
Sig.: Teaspoonful every two or three hours.

Or:

℞ Vini antimonii .....℥ j
Spiritus ætheris nitrosi .....℥ iij
Tincturæ opii camphoratæ .....℥ iiss
Liquoris ammonii acetatis..q. s. ad ℥ ij
Misce.
Sig.: Teaspoonful every two hours for child three to five years.

Brandy should be given, best in milk, when stimulants are needed.

Diet should be light and nutritious, such as milk, broths, and eggs in the form of albumen water. Plenty of cold water should be given. A cup of cold water should be kept by the bed, and the child encouraged to drink freely.

If the pulse shows any signs of weakening, brandy should be given either in milk or in albumen water.

Strychnin is indicated in rapid cardiac failure. For a child of six months gr. $\frac{1}{400}$ should be given hypodermatically every three or four hours.

Tincture of belladonna ♏ j–♏ ij every two or three hours is an excellent respiratory stimulant, but atropin, combined with strychnin, is much better.

Venesection is very seldom indicated in children or the aged.

Remember that it is a patient you are treating, not pneumonia, and be governed accordingly.

During convalescence tonics containing iron are needed and of these none are better than:

℞ Elixiris ferri, quininæ et strychninæ phosphatis,
Essentiæ pepsini (Fairchild) . . āā ʒ iss
Misce.
Sig.: Teaspoonful three times daily.

Or:

℞ Euquinini (Merck) . . . . . gr. xxxv
Syrupi pruni virginianæ . . . . . ʒ iv
Misce et fiat misturæ et adde
Liquoris potassii arsenitis . . . . . ♏ xxx–♏ xl
Aquæ menthæ piperitæ . . . . q. s. ad ʒ ij
Misce.
Sig.: Teaspoonful three times daily after meals.

Chronic Interstitial Pneumonia.

Remember that the history is very important, as it frequently occurs as a sequence of inhalations of iron, coal, or stone dust, and in the course of syphilis.

Remember that the characteristic feature of this affection is **atrophy** of the lung.

Remember that inspection shows retraction of the thorax on the affected side, with approximation of the ribs, and the spine curved toward the affected side.

Remember that in severe cases there will be dropping of the shoulder and projection of the scapula, together with reduction or absence of respiratory movements.

Remember that in atrophy of the left lung the apex beat of the heart is displaced to the left and to a higher intercostal space, and the pulsation more diffuse, because of greater cardiac surface exposure.

Remember that in the second left interspace over the pulmonary artery a systolic bulging and a diastolic thrill becomes visible and palpable. The thrill is due to the closure of the pulmonic valves, and auscultation reveals an accentuation of the valve sound.

Remember that if the atrophy is at the apices of the lungs, they will be shrunken; and if at the base, the abdominal organs adjacent to the diaphragm are displaced upward.

Remember that examination of the sputum for the tubercle bacilli is the only definite way to exclude tuberculosis.

Remember that there will be no shortness of breath in the ordinary exercise, but exertion, such as climbing stairs, may cause dyspnea.

Remember that chronic cough is always found, but there may or may not be abundant sputum.

Remember that death from hemorrhage or cardiac failure may occur.

Remember that fever, when present, means tuberculosis if not due to other acute associated process.

Treatment.

The patient should be protected from changes of temperature. It is better to send him to a warm, dry climate. The diet must be nutritious and easily digested. The bowels should be kept regular. The skin should be active, and flannel should be worn.

For the severe cough of the associated bronchitis the treatment would be the same as that outlined under chronic bronchitis.

Oil of turpentine gtt. x–gtt. xx three times daily is excellent.

There is nothing that will restore the elasticity of the lung. Breathing exercise should be carried out to expand the pulmonary tissue. Violent exercise should be interdicted because of the danger of hemorrhage.

Emphysema.

Remember that heredity plays an important role in emphysema.

Remember that bronchitis is a very common associate.

Remember that dyspnea, with harsh, wheezy respiration and prolonged expiration, is characteristic of emphysema. The ratio between inspiration and expiration, which is normally 1 to 4, may be changed to 4 to 1.

Remember that cyanosis of extreme grade is more common in this than in other affections.

Remember that the inspiratory effort is short, but expiratory is greatly prolonged.

Remember that the large, barrel-shaped chest and rounded shoulders, with prominent clavicles and deep sternal fossa, are signs of emphysema.

Remember that the drum-like note on percussion is due to the distended air vesicles. The cardiac area of dullness is greatly reduced or obliterated, and the liver dullness lowered even to the costal arch.

Remember that the breath sounds are feeble and soft in character.

Remember that the obstruction to the lesser circulation causes hypertrophy of the right heart and accentuation of second pulmonic sound.

Remember that cough and expectoration so often found in emphysema are due to the accompanying bronchitis.

Treatment.

The obstruction in the lesser circulation will cause digestive disturbances; hence the diet should be nutritious, easily digested, and taken in small amounts, but frequently.

The bowels should be kept open.

Iron and codliver oil are both indicated, and strychnin may be advantageously added.

Strychnin is admirable, and should be given in full doses, beginning with gr. $\frac{1}{30}$ three times daily and increased gradually until gr. $\frac{1}{12}$ are given.

Arsenic is good—Fowler's solution—5 drops three times daily, or arsenic trioxid gr. $\frac{1}{30}$ may be used.

The chronic bronchitis should be treated as already outlined. The patient must be carefully protected from exposure.

For asthmatic attacks that so frequently occur a hypodermic of morphin sulphate gr. $\frac{1}{4}$, with atropin sulphate gr. $\frac{1}{120}$, repeated every four to six hours if needed, is excellent.

The main reliance should be placed upon plenty of good food, protection from exposure, and the free use of strychnin for a long period of time.

Pulmonary Gangrene.

Remember that this is a sequence of a variety of conditions in the lungs—as lobar pneumonia in the debilitated or diabetic patient, aspiration pneumonia, embolism of the pulmonary artery, and it is in this manner that gangrene occurs in typhoid.

Remember that the symptoms of the preliminary conditions precede those of gangrene.

Remember that the sputum is very characteristic, usually profuse and fetid. The odor is cadaverous or mawkishly sweet and penetrating.

Remember that pieces of lung tissue can be separated from the sputa.

Remember that the peculiar plugs seen in the sputum in bronchiectasis are absent.

Remember that elastic fibers are seen with the microscope.

Remember that the color of the sputum is "dirty-green," gray, or brown, depending upon the amount of blood it contains.

Remember that the fever is not high, but the pulse is rapid, with great general prostration.

Treatment.

The patient should be kept on his back, to avoid leakage into sound bronchi.

The **diet** should be nutritious, and the strength of the patient must be supported.

Alcoholic stimulation should be used freely.

Turpentine is excellent, gtt. xv–gtt. xxx, especially when there is a complicating hemorrhage.

Carbolic spray may be used, or better plan is to use an inhaler, covering the mouth and nose, and charged with a carbolic solution, or with guaiacol (or creosote), alcohol, and chloroform, equal parts.

Creosote may be given both as an antiseptic and deodorant.

℞ Creosoti (Beechwood) ..... ♏ xxx
Alcoholis ..... ℥ j
Glycerini ..... ℥ vj
Aquæ ..... q. s. ad ℥ viij
Misce.
Sig.: Tablespoonful three times daily.

When the gangrenous area can be located and the general condition of the patient is good, surgical intervention is indicated.

Pulmonary Tuberculosis.

Remember that catarrh localized at the apices is very suggestive of tubercular infection.

Remember that dullness on percussion over the apex, with the patient in the sitting posture, is significant of early stage of tuberculosis.

Remember that a deviation from the normal sounds on auscultation—as jerky respiration, prolonged expiration, intensified or coarse vesicular breathing, or distinct respiratory murmur—is confirmatory of percussion findings.

Remember that evening elevation of temperature is present early in tubercular infection, but the temperature must be taken at least four times a day. The fever may be of the remittent or intermittent type.

Remember that the gradual loss of weight and strength in young adults is exceedingly significant of phthisis pulmonalis.

Remember that "night sweats" occur more often in phthisis than in any other condition.

Remember that the examination of the sputum will show, in time, the tubercle bacilli and is pathognomonic of tuberculosis of the lung, but they may not be found early in the disease, as they depend upon the stage of softening and breaking down of infected lung tissue, with expectoration of the pus-like material.

Remember that it is necessary to differentiate the formation of a cavity and pneumothorax, especially the sacculated form.

The intercostal spaces over the cavities are retracted as a rule, while in pneumothorax the interspaces are bulging, and pectoral fremitus is intensified over a cavity, but diminished over pneumothorax.

Remember that the cracked-pot sound on percussion is found over cavities, while distention of the thorax, displacement of viscera, especially heart and liver, and the change of dullness in the lower portions upon change of position point to pneumothorax.

Remember that cough is present in the majority of cases—a dry, hacking cough—but there are no characteristic features about it.

Remember that the "stomach cough" of the dyspeptic is probably of tuberculous origin.

Remember that the rosy cheeks and bright, sparkling eyes accompany the hectic fever of phthisis.

Remember that Koch's tuberculin may be used in case of doubt to determine the presence of a tubercular infection. The following method may be followed: for three days the temperature is to be taken every three hours and recorded. On the fourth day 1 milligram of pure tuberculin is injected hypodermatically, and, if no febrile reaction occurs in ten or twelve hours, the test is negative. In three days twice this amount is injected and the temperature watched for twelve hours. This is again repeated in three days, using larger dose until finally 5 milligrams are injected at a dose, when, if there be no fever, headache, and lassitude, the patient may be said to be free of tubercular infection. In positive reaction there will be a rise of 2° to 4° F. in the temperature.

Do not use tuberculin if a diagnosis is possible without it.

Remember that a rapid pulse and hurried breathing should arouse suspicion.

Remember that hemorrhage occurs in the course of the disease, and may be the first intimation that the patient is tubercular.

Remember that the muscles overlying an acute, active tubercular infection are rigid, similar to the condition of the right rectus over an acute inflamed appendix. This rigidity is easily detected by light palpation of the intercostal spaces.

Remember that the presence of pain in the chest depends upon a coexisting pleurisy.

Always auscultate the lungs posteriorly in the interscapular space, as frequently the earliest changes of the respiratory murmurs are heard in this region.

Always obtain the family history, because heredity is of some importance, but continued exposure to infection is of great importance in making a diagnosis early.

Treatment.

Pulmonary tuberculosis is curable, and, to effect a cure, two things are primarily necessary—viz., nutrition and ventilation.

Diet. The food should be highly nutritious, and prepared so that it will appeal to the palate. It must of necessity be a mixed diet to comply best with the above requirements.

Proteids are of first importance—all kinds of meats, and preferably with some fat.

Eggs are very nutritious, and taken in the form of egg-nog are very efficacious, but the patient easily tires of eggs, and they must be used liberally in preparing other foods, as salads, soups, dressings, custards, omelets, etc.

Vegetables—as peas, beans, lentils, and rice—that contain large amount of proteid should be given.

Fats—as butter, cream, oil, bacon, cream cheese, fatty cheese—where the fat is easily assimilated, should be used.

Milk in as large a quantity as possible should be used—three pints daily at regular intervals.

Carbohydrates may and should form a good part of the dietary.

Ventilation, or fresh air treatment, is very essential. The best fresh air is obtained by being in the open air day and night. Sunlight and open air is excellent, and the patient should be kept out in the sunlight. The bed-room must be so situated as to receive as much sunlight as possible.

The patient must sleep in the open air. This may be done by sleeping on a porch, or with the bed at an open window so that the head will be in the window. There are a number of devices that may be attached to the window frame and protect the patient's body from exposure in bad weather.

Exercise must be carefully graded to preserve strength and ward off hemorrhage. At most, it should be light, and, where there has been great loss of strength, resisting exercise and massage is better.

Care of the Mouth. The patient must be careful to cleanse the mouth thoroughly several times a day with some antiseptic solution. He should also be frequently cautioned against swallowing the sputum, but should spit it into a cuspidor containing some antiseptic solution or into a piece of cotton and burned. The dishes and drinking cups of the patient should be scalded after use. In brief, everything must be done to prevent the patient **reinfecting** himself, so that he may escape fresh lesions.

Medicinal Therapy. Creosote and codliver oil probably lead in therapy of tuberculosis. Creosote may be used both internally and by inhalations.

℞ Creosoti (Beechwood) .....gtt. vj
Glycerini .....℥ j
Spiritus frumenti .....℥ ij
Misce.
Sig.: Dessertspoonful diluted with water every two, three, or four hours.

The dose of creosote may be increased, but large doses should never be given, nor should the drug be pushed to the point of toleration because of the reaction from the drug. If the patient receives any benefit from creosote, it is manifested by increased appetite, improved nutrition, weight added, expectoration diminished, pus in the sputum lessened, the disappearance of bad odor from the sputum, and associated nontuberculous laryngitis, tracheitis, and bronchitis of the larger tubes cured.

When too much creosote is taken, there will be loss of appetite, coated tongue, nausea, vomiting, yellow tinge of the sclera, due to sluggish liver, and sugar or albumin may appear in the urine. The patient must be studied while taking the drug to determine whether it should be continued.

Inhalations of creosote may be administered either alone or in combination with other well-known medicaments.

℞ Creosoti (Beechwood),
Alcoholis,
Spiritus chloroformi .....āā ℥ j
Misce.
Sig.: 10 drops on a sponge or inhaler; inhale at first frequently for fifteen minutes at a time and gradually lengthen the time to one hour.

Or:

℞ Creosoti (Beechwood) ..... ♏ xv
Tincturæ benzoini compositæ .....ʒ iij
Misce.
Sig.: Teaspoonful floated on cup of boiling water and steam inhaled three or four times daily. Shake.

Or:

℞ Creosoti (Beechwood) ..... ♏ vij
Olei pini sylvestris .....ʒ iiss
Tincturæ benzoini compositæ q. s. ad ʒ iij
Misce.
Sig.: Teaspoonful on boiling water and inhaled three or four times daily. Shake.

Or:

℞ Creosoti (Beechwood) ..... ♏ x
Olei pini sylvestris,
Olei terebinthinæ .....āā ʒ iiss
Tincturæ benzoini compositæ q. s. ad ʒ iv
Misce.
Sig.: Teaspoonful on boiling water and inhaled three or four times daily. Shake.

Creosote for internal use may be combined as follows:

℞ Creosoti (Beechwood) ..... ♏ j–♏ ij
Olei olivæ vel olei morrhuæ ..... ♏ ij–♏ v
Misce et fiat capsula No. I. Dentur tales capsulæ mollis No. L.
Sig.: 3 to 7 capsules three times daily after food.

Or:

℞ Creosoti (Beechwood) .....ʒ iv
Tincturæ gentianæ compositæ .....ʒ j
Alcoholis .....ʒ viij
Vini xerici .....q. s. ad O ij
Misce et fiat solutio.
Sig.: 2, 4, or 6 tablespoonfuls three times daily after meals in glass of milk.

Or:

℞ Creosoti (Beechwood) .....3 ss–3 j
Olei morrhuæ .....ʒ vj
Acaciæ,
Aquæ menthæ piperitæ .....āā q. s.
Misce et fiat emulsio.
Sig.: Tablespoonful three to five times daily.

Guaiacol, a creosote derivative, may be used. Some of the salts, usually the carbonate or salicylate, are most frequently given.

℞ Guaiacolis carbonatis or salicylatis gr. vij
Fiat capsula No. I. Dentur tales capsulæ No. L.
Sig.: 2 to 12 capsules daily.

Creosotal is frequently better borne by the stomach, and may be prescribed.

℞ Creosotalis .....ʒ iij
Sig.: Half teaspoonful three to five times daily in milk.

Or:

℞ Creosotalis .....3 v
Olei morrhuæ .....ʒ iij
Acaciæ,
Aquæ menthæ piperitæ ..āā q. s. ad ʒ vj
Misce et fiat emulsio.
Sig.: Tablespoonful three to six times daily after meals.

There are a number of drugs to be used in tuberculosis, partly to keep up nutrition and partly to replace certain substances excreted in abnormally large amounts.

Arsenic is first. Either in pill form or Fowler's solution. It stimulates nutrition and is an excellent general tonic.

Salt. Patient should be instructed to use large

quantity of table salt to replace the abnormal loss in sputum and urine.

The phosphates should also be given. The best are the pharmacopeial preparations:

℞ Syrupi hypophosphitis .....℥ vj

Or:

℞ Syrupi calcii lactophosphitis .....℥ vj
Sig.: To be given in teaspoonful doses three times daily.

Anorexia must be combated. It is important that nutrition be maintained. If high fever is the cause of the anorexia, food should be given at the time the temperature is down and endeavor must be made to reduce the fever. If pain on swallowing or cough interfere with the taking of food, narcotics should be given before meals. Stomachics may be used to combat anorexia, as:

℞ Tincturæ nucis vomicæ .....3 ij
Tincturæ gentianæ compositæ,
Tincturæ cinchonæ comp. āā q. s. ad ℥ iij
Misce.
Sig.: Half teaspoonful before meals.

Fever. Drugs should not be given to reduce temperature until rest in bed and fresh air have failed. Unless fever is high and interferes with nutrition or causes unpleasant symptoms, no attempt should be made to reduce it. When high, the diet should be liquid, but should be plentiful.

Pyramidon gr. j–gr. iij every three hours until effect, or one single large dose gr. xv dissolved in hot water. This is the safest and best drug to be used.

Other coal-tar derivatives may be used, but, when antipyrin or phenacetin are used and appear to increase diaphoresis, it is best to change to other methods, or give them in much smaller doses.

Hydropathic measures for reducing fever are not used to any great extent in phthisis. Sponging the body under cover may be used.

Night Sweats. Sponging with equal parts of water and alcohol on going to bed, and, if necessary, during the night, may prevent them. Brandy, a teaspoonful in a cup of hot or cold milk, may be given at bedtime. An ounce of whisky may be administered a short time before the expected sweat.

Atropin sulphate gr. $\frac{1}{150}$ in tablets may be given hourly in the evening for 4 or 5 doses.

Agaricin may be used, but, owing to its tendency to produce diarrhea, it is better to combine it with Dover's powder.

℞ Agaricini .....gr. iij
Pulveris Doveri .....gr. xxx
Althææ,
Mucilaginis acaciæ .....āā q. s.
Misce et fiat massa. Divide pilulæ No. XX.
Sig.: 1 or 2 pills five hours before the expected sweat.

Camphoric acid has the advantage of producing quick effect, which lasts for six hours. It is given in capsule of 1 or 2 grains in the evening.

A dusting powder of either tannoform or zinc peroxid, to be dusted over the skin, is often very beneficial in checking the sweat.

℞ Zinci peroxidi .....ʒ j
Talci purificati .....ʒ iss
Misce et fiat pulveris.
Sig.: To be dusted on the skin.

Cough. Is often torturous and prevents rest. Patient should be taught how to cough to raise sputum by a deep, slow inspiration, followed by a short, quick expiration.

When the nose, pharynx, or larynx is not the cause, then codein should be used to check it. Sometimes local treatment to the upper portion of the respiratory tract is all that is necessary.

℞ Codeinæ phosphatis .....gr. viij
Acidi hydrocyanici diluti .....3 j
Spiritus chloroformi .....3 iss
Syrupi lemonis .....ʒ j
Aquæ .....q. s. ad ʒ iv
Misce.
Sig.: Teaspoonful when cough is troublesome.

Or:

℞ Dionini .....gr. iv
Acidi hydrocyanici diluti .....♏ xxx
Syrupi tolutani .....3 vi
Aquæ .....q. s. ad ʒ ij
Misce.
Sig.: Teaspoonful every three hours for cough.

Hemorrhage is best treated by recumbent posture of the patient, with head propped up, and positive assurance of the physician that all will be right. Place an ice bag over the pericardium to quiet the heart and give hypodermic of morphin gr. ⅛–gr. ⅓. Nitroglycerin to lower blood pressure is recommended by some.

Calcium lactate in half-dram doses three times a day for two days may stop repeated small hemorrhages.

Adrenalin hypodermatically and salt solution should be used when large hemorrhage endangers life.

Mercurial Treatment of Tuberculosis.

Excellent results are reported from the new Fort Lyon Naval Hospital by hypodermatic use of mercury succinimide. Two strengths are used—gr. $\frac{1}{10}$ and gr. $\frac{1}{5}$ to the tablet. One injection of gr. $\frac{1}{5}$ is given every other day until thirty injections have been given; then one week's rest, when injections are resumed, using gr. $\frac{1}{5}$ and gr. $\frac{1}{10}$ alternately, and later gr. $\frac{1}{10}$ was used. A later method has been advised of administering the drug in gradually increasing doses until the therapeutic limit is reached. When the maximum dose for the patient is established, it is divided by two and the injections continued on this basis. The open air and food treatment is also carried out in conjunction with the mercury treatment.

At present it is better not to attempt the use of tuberculin as a curative measure.

As to the advisability of sending tubercular patients away from home, we are strongly opposed. Nothing can be worse than to be seriously sick in a strange land among strangers. There is nothing to be gained away from home that can not be had at

home. There are many devices to apply to a window and to the patient's bed in such a manner that the head and shoulders are in the open air, while the body is protected.

Finally, let us urge a careful supervision by the attending physician of the patient's sputum. Let the short, concise statement ring in our ears, "No sputum, no tuberculosis." A piece of paper, rectangular in shape, rolled cornerwise so as to form a funnel, and the pointed end doubled back, makes an excellent spit cup, that should be used and thrown into the fire.

Acute Pleurisy.

Remember that in children or the aged the only symptoms that may be present are dyspnea on exertion and increasing pallor.

Remember that chill, fever, and pain, or "stitch in the side," usually announce the onset of pleurisy.

Remember that the pain is sharp and lancinating, and the cough makes it worse.

Remember that on auscultation a dry, friction rub is heard prior to the exudate, and this friction sound is pathognomonic.

Remember that fever does not rise so rapidly nor so high as in pneumonia.

Remember that the pain may be felt in the abdomen or low down in the back.

Don't mistake the dry, crepitant rales for the friction sound. The friction sound is not continu-

ous, and not restricted to inspiration as are crepitant rales, but is divided between inspiration and expiration, and is distinguished as being very superficial, or close to the ear. Coughing up the secretions has no effect upon the pleuritic sound.

Remember that effusion into the pleural sac causes marked changes. The friction rub heard on auscultation, and so characteristic of pleurisy in the early stage, disappears.

Remember that bulging of the intercostal spaces signifies effusion.

Remember that the patient changes posture, and now lies on the affected side to give more freedom in breathing.

Remember that on auscultation the breath sounds are distant and tubular, and vocal resonance on palpation is diminished or absent.

Remember that the dullness on percussion over an effusion is flat, and there is a sense of resistance to the fingers.

Remember Grocco's triangle of dullness in effusion. It is found along the spine on the side opposite the effusion, and from one-quarter to one inch wide, with apex upward. It is due to the displacement of the mediastinum by the fluid. The patient should be in the sitting posture.

Remember that Skoda's resonance is found just above the line of effusion, posteriorly as well as in the subclavicular space. It is a tympanitic note, due to the compression of the lung.

Remember that the insertion of the hypodermic needle under aseptic precautions and the withdrawal of fluid determines two points—viz., an effusion and whether serous or purulent.

Remember that liquid in pleural sac will cause displacement of organs, and the cardiac displacement is the one most easily determined.

Remember that in a tumor of the mediastinum the dullness usually extends from below upward, is irregular in outline, and not restricted to one side.

Remember that as the tumor grows there will be compression of nerves, vessels, and esophagus.

Remember the following points in differentiating pleurisy and pneumonia:

1. Dullness of pleurisy is absolute (woody), offering great resistance on percussion.
2. Pectoral fremitus absent or diminished over an effusion.
3. Crepitant rale is absent in pleurisy.
4. Displacement of organs is marked in effusion.
5. Sputum of pneumonia always present and rusty-colored.
6. Fever of pneumonia is high.

Treatment.

Patient should be put to bed.

Pain in the early stages is the most urgent symptom for treatment.

A hypodermic of morphin is the best way to relieve it.

The ice bag to the affected side, leeches, hot fomentations, or mustard plaster will give relief where pain is not severe.

Immobilizing the side gives prompt relief. Adhesive strips are used. They are cut long—long enough to extend about two inches beyond the median line posteriorly and anteriorly. The three-inch is best, and the strips should overlap one-third. They should be applied with the lungs as near collapsed as possible—at complete expiration—beginning at the lower margin and strapping upward until the axilla is reached.

Calomel, followed by saline, should be given.

Diet should be light. When effusion occurs, it should be dry. No liquids be given. Concentrated saline purges should be given in the morning before breakfast. Salt should be withheld.

Effusion is best relieved by aspiration. An ordinary trocar may be used or Potain's aspirating set may be obtained. The site depends upon the location of the liquid—usually in the midaxillary line, in the seventh intercostal space. The skin is thoroughly cleansed. The patient places the hand of the affected side on the shoulder of the opposite side, thus widening the intercostal spaces. The needle is thrust in close to the upper margin of the rib, so as to avoid wounding the artery. The amount of fluid to be drawn off depends upon the reaction of the patient. All of a large exudate should not be withdrawn at one time, as a severe paroxysm of

coughing is caused by sudden relief of the pressure upon the lung.

In early stage, when fever and circulatory excitement exist before effusion occurs, the following may be administered:

℞ Tincturæ aconiti .....m x
Spiritus ætheris nitrosi .....℥ j
Syrupi pruni virginianæ .....℥ iv
Liquoris potassii citratis ..q. s. ad ℥ iij
Misce.
Sig.: Tablespoonful hourly until pulse becomes soft, then every two hours.

Or:

℞ Potassii citratis .....℥ v
Antipyrini .....℥ j
Liquoris ammonii acetatis .....℥ iij
Syrupi limonis .....℥ ij
Aquæ .....q. s. ad ℥ viij
Misce.
Sig.: Tablespoonful hourly for four doses, then every two or three hours.

Iodid of potash and sodium salicylate are of little benefit, although frequently used. They are very liable to upset the stomach.

CHAPTER XI.

INFECTIOUS DISEASES.

Typhoid (Enteric Fever).

Remember that, while the disease is more common in early adults, the disease is often seen in children.

Remember that in children there is frequently absent some of the usually constant symptoms.

Remember that the onset in children may be so sudden and the diarrhea so severe that acute enteritis is diagnosed.

Remember that, as a rule, the onset is gradual, and that for ten days or two weeks there are lassitude and inaptitude for work.

Remember that nose bleed is an early and fairly constant sign in typhoid, especially when the patient is not subject to epistaxis in health.

Remember that headache is an early and fairly constant symptom, and occasionally it may be very severe, accompanied by photophobia, retraction of the head, and muscular twitching, suggesting meningitis.

Remember that severe facial neuralgia may mark the onset of typhoid.

Remember that the first intimation may be acute mania, pronounced delirium, or drowsiness and stupor, simulating basilar meningitis.

Remember that an initial bronchitis is very com-

mon in typhoid, but occasionally it is of so great a severity as to obscure other features of the disease.

Remember that the onset may be by a chill, pain in the side, hurried breathing, and pleurisy, or pneumonia may be suspected.

Remember that severe abdominal pain and tenderness in the appendiceal region has led to a diagnosis of appendicitis.

Remember that at the beginning of typhoid the cheeks are flushed and the eyes are bright, but at the close of the first week we find the dull, heavy look so familiar.

Remember that the fever may not be of the ordinary type. There may be a rapid rise to 103° or 104° F. following a chill or convulsion. Usually the "step-ladder" rise of the temperature from day to day during the first week is observed.

Remember that after the fastigium is reached the fever continues with but slight daily remissions. As a rule, the fever terminates by lysis, but it may disappear rapidly and in twenty-four hours the temperature be normal. This may be associated with severe sweating.

Remember that a sudden drop in the temperature strongly indicates intestinal hemorrhage.

Remember that "rose spots" are not present in all cases of typhoid, but that when present they are pathognomonic of the infection. They are small red spots found on the abdomen, that disappear on pressure and come in crops. They make their appear-

ance from the seventh to the tenth day. There may be few on the abdomen and the eruption may be general.

Remember that while a dry, hot skin is usually found at the height of the fever, there are cases where sweating is characteristic; usually associated with chilly sensations.

Remember that paroxysms of chills, fever, and sweats may occur, and thus simulate malaria, but they are lacking in periodicity and may occur several times in the twenty-four hours.

Remember that the dicrotic pulse is more often found in typhoid than in any other condition, and that the increase of the pulse rate is not proportionate to the increased temperature.

Remember that an enlarged, soft spleen is an almost constant clinical symptom of typhoid. If the vertical dullness over the splenic area exceeds the depth of two ribs and an interspace, enlargement is present. The best way to determine enlargement is by palpation.

Remember that the "pea-soup" stools occur in the second week, as does also status typhosus—stupor, somnolence, difficulty of hearing, indistinctness of speech, muttering delirium, and picking at the bed clothes.

Remember that the agglutination test of Widal is the most conclusive sign we have of typhoid infection.

Remember that the results of the test are just as

good if you use cultures of dead bacilli, and the microscope is not needed to determine a positive or negative reaction.

Remember that many tests should be made in case the first proves negative, because the formation of antibodies is often delayed and the reaction not obtained until late in the disease.

Remember that a sudden drop in the temperature, feeble and rapid pulse, and pallor are unequivocal signs of hemorrhage, even though it has not yet appeared in the stools. This accident most often occurs in the second or third week of the course of the disease.

Remember that the signs of perforation are never the same as those of peritonitis, and it is reprehensible for a physician to await the onset of the latter, as the few hours intervening between the occurrence of the one and the onset of the other are the life-saving hours.

Remember that the signs of perforation are:

1. A sharp, severe pain, often paroxysmal in character, in the hypogastric region and to the right of the median line.
2. Tenderness on pressure, most marked in the hypogastrium.
3. Muscular rigidity on light palpation.
4. Drop in the temperature, sweating, and increase rate of pulse and respiration.

Remember that at this period the patient becomes an urgent case for the surgeon and ceases to be a proper case for the internist.

Remember that after four to six hours peritonitis follows perforation; the temperature rises; ballooning of abdomen; disappearance of liver dullness; muscular rigidity; rapid, feeble pulse; cold sweat—death.

Treatment.

Diet. There are two views relative to the diet. On the one hand, we have those who restrict the diet to liquid. A representative of this type is the one used by Osler and McCrea, consisting of 4 to 6 ounces of milk, diluted with 2 ounces of lime water, every four hours, and 4 ounces of albumen water, made from the white of one or two eggs, every four hours. They claim that even that amount is probably too much. On the other hand, a number of excellent physicians are using a more liberal diet—treating the patient rather than the disease. Dr. F. C. Shattuck's menu may be quoted as representing this view:

1. Milk—hot, cold, diluted with lime water, soda water; peptonized milk; cream and water; milk with white of egg; buttermilk; matzoon; milk whey; milk with tea, coffee, or cocoa.
2. Soups—beef, veal, chicken, tomato, potato, oyster, mutton, pea, bean, squash; carefully strained and thickened with arrow-root, flour, milk or cream, egg, barley.
3. Malted milk—Horlick's, Mellin's.
4. Beef juice.

5. Gruels—strained cornmeal, crackers, flour, barley water, toast water, albumen water with lemon juice.

6. Ice cream.

7. Egg—soft boiled or raw; egg-nog.

8. Finally, minced lean meat, scraped beef, the soft part of raw oysters, soft toast, jelly, apple sauce, and macaroni.

It is probably true that we have been feeding too little and the patient enters upon his period of convalescence handicapped.

Liquids. Typhoid patients must be given water freely, unless contraindicated by extreme arteriosclerosis, myocarditis, or serious valvular lesion. In addition to the liquid in the food, they should be given from a half to two quarts daily. The severer the toxemia, the more water should be given.

Lemonade is excellent, because it excites the flow of saliva and prevents the mouth becoming dry.

Alcohol should be given in cases of profound toxemia and the heart feeble; 8 to 12 ounces of whisky may be given in the twenty-four hours. One strong indorsement for a liberal diet is the fact that the patient seldom needs whisky.

Where the tub bath is used and the patient requires whisky, it should be given just before or after the bath, depending upon his reaction to the bath.

Hydrotherapy. This is next in importance to the diet. The bath, cold packs, or sponging may be used. Of the various methods of applying water, the bath is best when not contraindicated.

Baths. Are not only given to reduce the temperature, but they mitigate the nervous symptoms, and thus lessen the delirium, stimulate the kidneys, and thus increase the excretions of toxins, and cleanse the skin—in short, affect favorably the whole course of the disease. It is best to begin with water at 80° or 85° F., and gradually reduce the temperature after placing the patient in the tub. Always apply cold to the head. Gently, but briskly, rub the patient while in the bath. The bath should last from ten to fifteen minutes, and the patient is placed between sheets and covered with a blanket after removal and drying. The temperature should be taken immediately after the bath and again in an hour. These baths may be repeated as often as the temperature reaches 103° F. A cup of hot milk may be given and hot-water bottle placed to the feet.

Cold Packs. A sheet is wrung out of cold water and the patient wrapped in it. The head and feet are left free. Cold water may be sprinkled over him occasionally, or he may be rubbed with a piece of ice, especially along the vertebræ. The pack is removed in from twenty to thirty minutes, the body dried and covered with sheet and blanket.

This may be repeated as often as the temperature indicates it. Cool sponging may be resorted to in mild cases. Alcohol or vinegar should be added to the water. The skin should be only partially dried, so that by evaporation of the moisture on the skin a continuation of the antipyretic effect may be obtained.

Contraindications for **cold baths** or **packs** are intestinal hemorrhage, perforation, the old and very young; patients suffering with acute or serious chronic cardiac or cardiovascular changes, phlebitis, nephritis, pneumonia, pregnancy; very obese, anemic, and alcoholics.

Medicinal Antipyretics. These should not be given unless baths can not be used, either because of contraindications or prejudices of the family. There are a number of drugs that are antipyretic—quinin, phenacetin, antipyrin, pyramidon.

Quinin should not be given to typhoid patients in doses large enough to reduce temperature. From recent laboratory reports quinin in 2-grain doses every three hours will stimulate phagocytosis, and perhaps will thus assist the body in fighting the invaders, but the dose is too small to affect the fever; and the laboratory has also shown that quinin in large doses destroys the ameboid movement of leucocytes, and thus interferes with the resisting forces.

Antipyrin and **phenacetin** are better not used in typhoid, because of the cardiac depressing effect.

Pyramidon is given gr. iij–gr. iv every two or three hours, and it is claimed by good observers to have no ill effect, except that in some patients it produces excessive diaphoresis. As a precaution, it may be combined with 3 to 4 grains of sodium benzoate of caffein.

Calomel should be given at the onset, and repeated

throughout the disease when tympany indicates extensive gas formation in the bowel. Gr. v–gr. x may be given in one dose, or it may be administered in broken doses. Nobody claims it cuts short the course of typhoid, but the experience of clinicians is favorable to its use because of its combined powers as an antiseptic, glandular stimulant, and eliminant both through the bowels and kidneys.

Intestinal antiseptics are indicated, but not, as some think, to cut short the disease nor to abort it. They reduce the bacterial activity in the intestines and thus favorably influence the disease. Turpentine in emulsion is best and the sulphocarbolates follow.

The following are excellent combinations:

℞ Naphtolis .....3 j
Salolis .....gr. xxx
Pulveris aromaticæ .....gr. xx
Misce et fiant pulveres No. XII.
Sig.: Powder every four hours.

Or:

℞ Bismuthi salicylatis .....3 iij
Ichthalbini .....3 iij
Sacchari lactis .....3 j
Misce et fiant pulveres No. XXIV.
Sig.: Powder every four hours.

Or:

℞ Sodii sulphocarbolatis .....3 iij
Resorcinolis (Merck) .....gr. xxx
Syrupi simplicis .....ʒ ij
Aquæ menthæ piperitæ .....ʒ iv
Misce.
Sig.: Tablespoonful every four hours.

Or:

℞ Zinci sulphocarbolatis .....gr. ss
Calcii sulphocarbolatis .....gr. j
Sodii sulphocarbolatis .....gr. iiss
Bismuthi salicylatis .....gr. ¼
Mentholis .....gr. j
Misce et fiat pulvere No. I.
Sig.: Powder every three to six hours, according to odor of stools.

This combination is put up in tablet form by Abbott, and is very convenient and effective. Or:

℞ Olei terebinthinæ .....ʒ iss
Olei caryophylli .....gtt. vj
Glycerini,
Mucilaginis acaciæ .....āā ʒ ss
Aquæ destillatæ .....q. s. ad ʒ iij
Misce et fiat misturæ.
Sig.: Dessertspoonful every two hours during the day.

Thymol is preferred by some, because it possesses antiseptic power four times as great as carbolic acid and is innoxious; it is also insoluble, so that it reaches the intestines. It is given in gr. ij–gr. iij every three hours, made into a pill, and should always be given with food.

Mouth, teeth, and tongue should be thoroughly cleansed after each feeding. The mouth and teeth should be washed with weak alkaline solution. Baking soda in warm water is excellent, and, if the patient is able, he should rinse the mouth with some mild antiseptic solution.

Bed sores are rare where bathing is used in the treatment. It is well to rub the skin over the buttocks, thighs, and lower back with a weak bichlorid

solution, followed with alcohol; rub dry and dust with some simple powder or talcum.

Diarrhea demands treatment when the daily evacuations exceed six. Silver nitrate gr. ¼–gr. ½ is called a specific by some. Bismuth subnitrate or salicylate gr. v–gr. x, with paregoric 3 ss, every two or three hours, is useful, or the following:

℞ Pulveris opii .....gr. ¼
Pulveris camphoræ .....gr. j
Plumbi acetatis .....gr. iij
Bismuthi subnitratis .....gr. xxx
Misce et fiat pulvere No. I. Dentur tales pulveres No. XII.
Sig.: Powder every four hours.

Or:

℞ Bismuthi subnitratis .....3 ij
Tannalbini .....3 iij
Dionini .....gr. ij
Misce et fiant pulveres No. XII.
Sig.: Powder every three hours.

Meteorism. First insert a large rubber catheter. Turpentine stupe to the abdomen. A careful revision of the diet—as the omission of gruels and peptonizing of the milk. Eserin gr. $\frac{1}{50}$ may be given.

Hemorrhage. Apply cold to abdomen—as light ice bag. Stop everything by mouth, except cold albumen water. If patient is restless, give morphin hypodermatically. Administer calcium salts in large doses. In large hemorrhage, manifested by weak, rapid pulse and signs of collapse, give saline solution into the subcutaneous tissues or into the vein, according to the urgency of the case. It is best to

omit the morphin if possible, and in no case should the sensorium be completely obtunded, because perforation may occur and pain is our principal guide.

℞ Stypticini .....gr. xij
Ergotini .....gr. xxx
Elixiris simplicis .....ʒ iij
Misce.
Sig.: Tablespoonful every two to three hours.

Perforation requires an immediate operation, under general anesthesia if possible or under cocain. There can be no delay, as peritonitis will inevitably follow in five or six hours.

Urotropin gr. v–gr. x should be administered three times daily for its antiseptic powers in the bile, urine, and cerebrospinal fluid. Many cases of gallstones will thus be prevented and the urine will not become a distributor of the germs. This drug should be administered during the period of convalescence as well.

Tonics, and good food and fresh air in abundance should be given the convalescent.

Children should not be returned to school before six months following typhoid.

Bacillary Dysentery.

Remember that this affection often appears in epidemics, in which children are attacked as well as adults.

Remember that hot weather and improper feeding of children is a very frequent cause.

Remember that the onset is usually sudden, and

is characterized by slight fever, pain in the abdomen, and frequent stools.

Remember that the stools at first contain a large amount of mucus, but in twenty-four hours blood is passed with it.

Remember that frequently pure blood is passed; hence "bloody flux."

Remember that there is a constant desire to go to stool. The motion of the bowels affords no relief.

Remember that straining and tenesmus while at stool is very characteristic.

Remember that the temperature gradually rises, and the pulse becomes rapid and small.

Remember that the frequent stools cause great thirst and rapid emaciation.

Remember that the blood of the patient in dilution will agglutinate the Flexner-Harris or Shiga bacilli, depending upon the bacilli causing the infection.

Remember that the bacilli dysenteriæ should be sought for with the microscope in the shreds of mucus found in the stools.

Remember that liver abscess is not a complication of bacillary dysentery.

Remember that severe and painful joint symptoms may be associated and lead to an erroneous idea of acute rheumatism.

Remember that paralysis frequently follows bacillary dysentery. It is usually in the form of paraplegia.

Treatment.

The patient should be confined to bed, as absolute rest is necessary in acute stage. When the pain is severe, a hypodermic of morphin should be given.

Diet must be restricted to milk, whey, and broths. During an acute attack neither ice nor cold liquids should be swallowed, although the mouth may be rinsed with cold water to relieve thirst. In the severe cases peptonized milk should be given. During convalescence great care must be exercised in the diet. Nutritious and easily digested food should be selected, and solid food should be withheld until all signs of enteritis have disappeared and the stools are normal.

Medicinal. When seen early, a dram of magnesium or sodium sulphate every two hours until the stools are watery. The continuous administration of the salines is the best form of treatment. The following give excellent satisfaction:

℞ Solutionis magnesii sulphatis saturationis ..... ℥ j
Tincturæ opii,
Acidi sulphurici aromatici .....āā ʒ iv
Essentiæ pepsini (Fairchild) q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every three hours.

Or:

℞ Cupri sulphatis .....gr. ss
Magnesii sulphatis .....℥ j
Acidi sulphurici diluti .....ʒ j
Aquæ menthæ piperitæ ....q. s. ad ℥ iv
Misce.
Sig.: Teaspoonful every four hours.

Or:

℞ Cupri arsenitis .....gr. ¼
Tincturæ opii camphoræ .....ʒ iv
Essentiæ pepsini (Fairchild) q. s. ad ʒ iij
Misce.
Sig.: Teaspoonful every three hours.

Bichlorid of mercury in gr. $\frac{1}{100}$–gr. $\frac{1}{50}$ every two hours often gives excellent results.

Bismuth is given frequently, but it is more efficacious in the chronic form. When used, it should be given in massive doses, 3 ss–3 j, best given alone mixed with water.

Ipecac in large doses is used extensively. No food is given for three hours, then 15 or 20 drops of the tincture of opium is given, and in half an hour 3 ss–3 j of ipecac is given and the patient kept quiet on his back. Should it be vomited, it is repeated in one or two hours. After the acute symptoms subside, rectal irrigation should be begun. There are a number of astringents—such as alum, acetate of lead, sulphate of copper and zinc, and silver nitrate. Silver nitrate is best, and large quantities of the solution should be used, so that all parts of the colon will be thoroughly irrigated; 20 to 30 grains to the pint and 5 to 6 pints should be used at a time. The more chronic the condition, the better will be the result.

Local Applications. Hot turpentine stupe or poultice will relieve pain and reduce the number of stools.

Serum therapy is not at all satisfactory, and we must await further developments along this line.

Amebic Dysentery.

Remember that there are two forms—the acute and chronic—both caused by the ameba dysenteriæ.

Remember that the acute form is characterized by a sudden onset, with pain, tenesmus, and diarrhea, the stools containing blood and mucus.

Remember that, though the fever is not intense, there is rapid emaciation, and the patient may die in a week.

Remember that hemorrhage of the bowel or perforation, with peritonitis, may occur.

Remember that leucocytosis occurs, and the count varies between 10,000 and 16,000.

Remember that in the chronic form the onset is more insidious.

Remember that in the chronic cases periods of attacks of pain, tenesmus, diarrhea, with mucus and blood in the stools and with slight fever, alternate with periods of constipation and apparent good health.

Remember that these patients suffer from indigestion, and errors in diet cause a dysenteric attack.

Remember that fatigue or sudden chilling of the body from exposure frequently produces an attack.

Remember that the ameba coli is present in the stools, and should be sought for in suspected cases.

Remember that it is in amebic dysentery that liver abscess is exceedingly common and should be watched for.

Always outline the upper border of the liver daily,

as the abscess is usually located near the upper surface and causes an irregular upward curve of hepatic dullness.

Remember that other symptoms of liver abscess are fever, sweat, local pain, and edema.

Remember these abscesses may rupture and drain through the lung. When this occurs, the sputum is dark and contains the ameba.

Treatment.

Rest in bed is very important in both forms of the disease, as it hastens recovery.

Diet should be governed by the severity of the intestinal trouble. In the acute form it should be liquid, such as milk, whey, and broth.

Intestinal antiseptics are used on the theory that ameba require the presence of other bacteria.

Acetozone given by mouth and also in enema has accomplished some good.

Bismuth in any form should not be given in amebic dysentery.

That local treatment is best can not be disputed. Of all drugs used locally, quinin is best. The solution of quinin should be 1:5000 at first, then increased to 1:2500, and later further increased in strength of 1:1000.

If the following method of injection be followed, better results will be obtained:

The patient should lie on his back, with the hips elevated, so that gravity will assist. From 1 to 2

quarts of the solution should be used. The injection should be given slowly, and the patient should turn from side to side during the injection, so that all parts of the colon will be bathed by the solution. The enema should be retained for fifteen or twenty minutes if possible. When the enema causes much pain, it may be preceded by injection of laudanum and starch water. Two injections daily should be given. For the severe pain and tenesmus a hypodermic of morphin should be given.

Large doses of ipecac are recommended by many, as are also saline injections and injections of ice water.

Patients should not be allowed cold drinks during acute attacks, and hot applications to the abdomen often give great relief.

Measles.

Remember that the period of incubation varies between seven and fourteen days.

Remember that the onset is usually with a coryza. The eyes are red and watery, and there is photophobia.

Remember that the troublesome croupy cough begins early and continues throughout the course.

Remember that there is fever on the first day, and that the peculiarity of the fever is its remission on the third.

Remember that the eruption appears on the fourth day, beginning on the face.

Remember that, as a rule, there will be patches of skin between the eruptions that will be of normal color, but the boundary between the eruption and the healthy skin is always crescent in shape.

Remember that the eruption disappears on pressure, but in some cases hemorrhage, or petechia, occurs into the skin and they will not then disappear.

Remember that, while there may be slight swelling of the cervical lymph glands at the height, it is never so pronounced as in scarlatina.

Always look for Koplik's spots on the mucous membrane of the mouth. They occur, as a rule, on the first day of invasion, and consist of bluish-white specks surrounded by bright-red roseola. While they resemble that of thrush, they have not the yellowish center.

Remember that the rash fades on the third day, and fine, branny **desquamation** occurs that is frequently overlooked.

Remember that lobular pneumonia is exceedingly common, and usually occurs at the height of eruption or beginning of desquamation. Always examine chest daily.

Always look for otitis media, because it is common in measles and may develop mastoid abscess.

Never be in too great haste to differentiate measles and smallpox; it frequently requires some time for distinctive developments.

Treatment.

The patient should be put to bed in a well-ventilated room. If photophobia be severe, the room should be darkened or yellow curtains hung.

The **diet** should be liquid during febrile reaction. Milk and broths are best. Care in selecting a diet is necessary, that a troublesome diarrhea is not started. Cathartics should be used sparingly for the same reason. The best is castor oil with 2 or 3 drops of turpentine in it.

If the fever is high, sponging, or the warm bath gradually cooled, is excellent.

Some simple fever mixture may be used, as:

℞ Potassii citratis .....3 iv
Tincturæ aconiti .....♏ x
Spiritus ætheris nitrosi .....3 ij
Syrupi tolutani .....ʒ j
Aquæ .....q. s. ad ʒ iij
Misce.
Sig.: Half to teaspoonful every two hours for child of 1 to 2 years.

Or:

℞ Sodii bromidi .....gr. l
Spiritus ætheris nitrosi .....3 ij
Liquoris potassii acetatis ..q. s. ad ʒ iij
Misce.
Sig.: Teaspoonful every two hours for child of 1 to 3 years.

The cough should be treated from the beginning of the attack. The fact should ever be kept in mind that tuberculosis very frequently follows measles.

Paregoric may be added to either of the fever mix-

tures. Codein is probably better. The following combination is very efficient:

℞ Codeinæ phosphatis .....gr. ij
Syrupi ipecacuanhæ .....℥ j
Syrupi pruni virginianæ .....℥ j
Aquæ camphoræ .....q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every two hours for child of 6 years; one-half to one-quarter the amount for younger child.

Or:

℞ Codeinæ phosphatis .....gr. ij
Ammonii carbonatis .....gr. xxx
Syrupi scillæ .....℥ j
Syrupi pruni virginianæ .....℥ j
Aquæ camphoræ .....q. s. ad ℥ iij
Misce.
Sig.: Teaspoonful every two hours for child of 6 years; one-half to one-quarter the amount for younger child.

Or:

℞ Pellet aconitinæ amorphæ (Abbott) āā gr. $\frac{1}{134}$
Sig.: Dissolve 1 for each year of child's age and 1 extra in 3 ounces of water and give teaspoonful hourly for fever.

When the eruption fails to come out, wrap the child in blankets wrung out of hot water and give hot drinks. During convalescence the child should be given careful attention and protected from cold.

Scarlet Fever (Scarlatina).

Remember that the mild cases of angina may spread the disease. This is usually the way epidemics spread in schools.

Remember that milk is responsible for many epidemics.

Remember that a sudden onset, with vomiting and a rapid rise in the temperature, with a rapid, wiry pulse, is very characteristic of scarlatina in children. The next symptom in order of appearance and importance is the angina.

Remember that the lymph glands behind the angle of the jaw are enlarged in scarlatina.

Remember that the eruption comes early—usually by the second day—begins on the neck and chest, and spreads rapidly all over the body, with the exception of certain parts of the face, especially the region of the mouth and chin, which are conspicuous by their pallor.

Remember that there is a uniform blush of the skin, and the eruption is punctate and of a deeper color. There is no intervening healthy skin, and no crescentic arrangement of the eruption, as seen in measles.

Remember that pressure causes blanching of the skin, but the blush quickly returns when pressure is removed.

Remember that the tongue is very characteristic. On the first and second days the tip and margins are red, while the center is covered by a grayish-yellow coating. This coating disappears after the eruption is out, and the tongue now appears intensely red, with the papillæ markedly swollen and raised, producing the "raspberry" or "strawberry" tongue, and this is very characteristic of scarlatina.

Remember the following points in differentiating scarlatina and measles:

1. The eruption of measles occurs first in the face, and is especially and markedly developed here, while in scarlet fever the neck and chest are first affected, and the face, under all circumstances, shows less eruption, and the region about the mouth is particularly free.

2. The eruption of measles occurs on the fourth day, while in scarlet fever it may occur on the first and never later than the second.

3. The onset of scarlet fever by vomiting and the severe angina, while the onset of measles is marked by inflammation of the mucosa of the respiratory tract—coryza.

4. The drop in the temperature on the morning of the second day, with a subsequent rise on the third or fourth, is found only in measles.

5. The "raspberry" tongue of scarlet fever is rather characteristic of it and is not seen in measles.

Always examine the urine often from the ninth day until the sixth week for the appearance of signs of nephritis. This is the most common complication, but fortunately it rarely becomes chronic.

Always watch the ears closely for otitis media, as it very frequently occurs in scarlatina, and, if neglected, will lead to mastoid disease.

Remember that a polyarthritis often follows scarlatina, and may be diagnosed acute inflammatory rheumatism, but the ordinary rheumatic therapy will have no effect upon it.

Treatment.

Prophylaxis. The patient should be isolated to prevent dissemination. As to the contagious periods, Forcheimer may be quoted: "The disease is not contagious during the period of incubation; little, if at all, during the period of invasion; most contagious during the period of eruption, and decidedly so during the period of desquamation."

The patient should be placed in a well-ventilated room, and be clad in light flannel gown and lightly covered.

Diet must be liquid. Milk, broths, and fresh fruits. Water should be given freely.

The throat and mouth should be washed thoroughly with an antiseptic solution to protect the ear.

The following is a good gargle:

℞ Phenolis .....gr. xxx
Glycerini .....℥ j
Aquæ camphoræ .....℥ j
Potassii chlorati .....gr. x
Aquæ .....q. s. ad ℥ vj
Misce et fiat solutio.
Sig.: Use as a gargle two times daily.

Or:

℞ Naphtolis .....3 j
Aquæ camphoræ .....3 iv
Glycerini .....℥ j
Aquæ rosæ .....℥ ij
Alcoholis .....℥ j
Misce et fiat solutio.
Sig.: Use as a gargle two times daily.

Or:

℞ Acidi borici .....3 ss
Potassii chlorati .....3 ij
Tincturæ ferri chloridi .....3 ij
Syrupi simplicis .....ʒ ij
Aquæ .....q. s. ad ʒ iv
Misce.
Sig.: Tablespoonful every two hours for child of 5 years.

The pharynx and posterior nares may be sprayed with an atomizer, using chloretone inhalant (P. D. & Co.), or 5 grains of menthol to 1 ounce of aboline. Peroxid of hydrogen may be used, either pure or combined with glycerin. Careful attention to the nose and throat often prevents ear complications.

When diphtheritic patches occur, they should be wiped off with a swab and Löffler's solution applied. This solution consists of:

℞ Mentholis .....3 iiss
Toluolis .....ʒ j
Liquoris ferri chloridi .....3 j
or creolin .....♏ xxx
Alcoholis absoluti .....ʒ ij
Misce et fiat misturæ. Dispense in brown bottle.
Sig.: Use as a gargle and swab the throat thoroughly.

Fever is best combated by hydrotherapy. The cold bath of typhoid should not be used. In light cases, sponging with cool water or water and vinegar, with cold applied to the head, either as ice bag or towel wrung out of ice water. Where the temperature runs high, the patient may be put in tepid bath and the temperature gradually reduced, but never below 75° F.

Aconite, either as the tincture ♏ j–♏ ij every hour, or the active principle aconitin amorphous gr. $\frac{1}{134}$ every fifteen to thirty minutes, may be given to child of 5 years until effect, and then continued hourly. The following is a good fever mixture:

℞ Liquoris ammonii acetatis .....℥ vj
Potassii chlorati .....℥ ss
Tincturæ aconiti .....♏ xxx
Syrupi limonis .....℥ v
Aquæ .....q. s. ad ℨ iij
Misce et fiat solutio.
Sig.: Teaspoonful every two hours, and may be given hourly if temperature be high.

Quinin and phenacetin are very effective and beneficial in many ways.

℞ Euquinini (Merck) .....gr. xxx
Phenacetini .....gr v
Syrupi pruni virginianæ .....℥ vj
Aquæ menthæ piperitæ ....q. s. ad ℨ ij
Misce et fiat misturæ.
Sig.: Teaspoonful every two or three hours, as indicated, for child of 2 to 10 years.

Delirium and muscular twitching call for sodium bromid. Usually ice pack to the head is sufficient, as the cerebral congestion from the fever causes delirium.

Cardiac failure calls for stimulants. The following is very efficient:

℞ Camphoræ .....℥ ss
Aetheris .....℥ v
Misce.
Sig.: Inject 20 minims subcutaneously.

Whisky, brandy, or aromatic spirits of ammonia may be used.

Delayed eruption is best treated with atropin gr. $\frac{1}{250}$ every hour until physiologic effect. Warm baths will assist also in bringing out the eruption.

Calcium sulphid and urotropin should be given throughout the disease.

Calcium sulphid gr. j–gr. ij should be given when the stomach is empty to prevent the action of HCl.

Urotropin gr. $\frac{3}{4}$–gr. v, according to age, is given three times daily, as its antiseptic action on the urine is thought to protect the kidneys.

Tincture of iodin, glycerin, and ichthyol, equal parts, painted over the enlarged tender glands of the neck and covered by rubber tissue, will prevent suppuration in many cases. Unguentum Crede may also be used, or unguentum hydrargyri ammoniati. When fluctuation can be detected, the gland should be opened and drained.

Nephritis. As a preventive measure to a certain degree, the following gives good results, probably because it quiets the nervous system:

℞ Chloral hydratis .....ʒ ij
Sodii bromidi .....ʒ iij
Syrupi tolutani .....ℨ j
Aquæ .....q. s. ad ℨ iij
Misce.
Sig.: Teaspoonful every two or three hours.

Plenty of water and a milk diet are excellent prophylactic measure.

The urine should be examined daily for albumin. When nephritis develops, the treatment in no way varies from that outlined under acute nephritis.

During the period of eruption and desquamation the body should be rubbed daily with some oily substance, as carbolated vaselin or plain olive oil, or where there is much itching the following:

℞ Mentholis .....gr. xx
Olei olivæ .....℥ ij
Adipis lanæ .....℥ ij
Misce et fiat unguentum.
Sig.: Anoint body one or two times daily.

A warm bath should be given daily to hasten the desquamation. The body should be thoroughly rubbed during the bath and dried with a tolerably rough towel, and some ointment applied. This prevents the scales from flying and lessens the danger of spreading the disease.

Convalescence calls for tonics, especially those containing iron. There is none better than elixir of iron, quinin, and strychnin, and essence of pepsin, equal parts, and give a teaspoonful three times daily.

Malaria.

Remember that the disease is communicated to the well solely by the mosquito; hence the importance of insisting upon a malarial patient being protected from the mosquito.

Remember that the disease may remain dormant for a variable time and again produce the clinical symptoms. This is likely to be thought a reinfection, when it is an old infection that has not been sufficiently treated to be cured. There are a number of types:

1. Intermittent Fever.

Remember that this is the common fever and ague, and is characterized by chill, fever, and sweat, followed by a total remission of fever.

Remember that the chill may be light or severe, and begins gradually. The temperature rises during the chill.

Remember that the chill may be overlooked, especially in young children, but the lips are blue, the face is pale and pinched, the skin feels cold, and there is vomiting. In children the fever may cause nervous symptoms that may mislead in diagnosis.

Remember that the pulse is small, hard, and frequent; the hands are cold, and the finger nails are blue.

Remember that fever follows the chill, but that the temperature begins to rise even prior to the chill and usually reaches its maximum at the end of the chill or very soon thereafter. This is the period of circulatory reaction of the superficial vessels, and the skin becomes red, hot, and dry. Thirst is intense, and a throbbing headache announces the dilatation of the cerebral vessels.

Remember that the sweating stage is the last in the paroxysm, and affords relief of all the symptoms. The amount of sweating varies from a moist skin to a profuse, drenching the clothes and bed.

Remember that the duration of the paroxysm varies from eight to twelve hours, and during the paroxysm the spleen is enlarged.

Remember that herpes labialis occurs more frequently in malaria than in any other condition, and is very suggestive when it occurs.

Remember that there are other conditions causing chills, fever, and sweat. The two most common are tuberculosis of the lungs and pyemia.

Remember that the paroxysms of chill, fever, and sweat found in malaria are periodical, occurring with marked regularity, while the paroxysms occurring in the other infections are irregular, sometimes occurring daily and then less frequently.

Remember that the blood examination will show the plasmodium in malaria, while a blood culture will give a growth of streptococci in septic cases.

Remember that in the nervous chill there is no fever, or at most the rise will be very little, while the other phenomena of malaria will be absent.

2. Remittent Fever.

This is also called the estivo-autumnal fever, but is probably best known as bilious fever.

Remember that the prodromal symptoms are pronounced and misleading. They are malaise, intense headache, coated tongue, and frequently nausea and vomiting. The vomiting may be of bilious matter, and there may be jaundice, with tenderness on pressure over the liver.

Remember that the chill is less severe and lacks the characteristic periodicity of intermittent.

Remember that the temperature is continually above normal, but there are remissions in the height.

Remember that the blood examination shows the small, active, motile, hyaline form of the plasmodia, while later the crescentic, ovoid bodies may be found.

Remember that malarial infection of any type will yield when the patient is cinchonized, but don't forget that there is a difference between giving quinin and cinchonizing a patient.

Remember that typhoid and remittent malarial fever is frequently confused, but the following should determine the question:

1. Plasmodium found in the blood in malaria.
2. Eruption in first week in typhoid fever.
3. Widal reaction of agglutination present in typhoid and occurring from the fifth day on.
4. Cinchonizing patient with quinin will send the temperature to normal in malaria; no effect in typhoid.

3. Pernicious Malaria.

Remember that the pernicious types may not begin with a chill and the onset may be sudden.

Remember that there are two types—comatose and algid. In the comatose type there are low, muttering delirium, skin is hot and dry, temperature high, and may terminate fatally. The digestive system bears the brunt of the attack in the algid type. There are extreme nausea, vomiting, collapse, with coldness of the extremities. The pulse becomes small and feeble, the breathing is rapid and shallow,

suppressed urine, colicky pains, purging, and great thirst.

Remember that the pernicious forms may be complicated by paraplegia, and acute ataxia has been described. Multiple gangrene may occur. Orchitis has occurred in some cases.

4. Chronic Malaria.

The cachexia is the most prominent symptom. It is caused by blood changes. Anemia is extreme, and causes breathlessness on exertion; edema of the ankles. The spleen is enlarged and hard; its border may extend to the iliac crest. Some cases are jaundiced, and all have a peculiar yellow color.

Remember that leukemia causes an enlarged spleen, but the changes in the blood cells are very characteristic in leukemia, and, in addition, the plasmodium is found in the blood in malaria.

Remember that intense choleraic form occurs. The purging is very profuse and watery. There is fever and collapse, and death may occur.

Remember that there is a gastralgic form, in which there is agonizing epigastric pain, abdominal tenderness, and perhaps diarrhea. It has been mistaken for appendicitis by surgeons.

Remember that malaria may closely simulate dysentery. There will be frequent, mucoid, bloody stools; colicky, abdominal pains; tenesmus, and progressive emaciation.

Remember that neuralgia may be of malarial

origin. The proper administration of quinin is usually very efficacious in these cases.

Remember that hematuria may occur in any malarial infection, but is much more common in the tropics. This is a hemaglobinuria, and the parasite can always be found in the blood. It is doubtful as to quinin either causing it or making it worse.

Treatment.

Patients known to be malarial should be protected from mosquitoes, so that the infection may be limited.

Calomel as a cathartic has no equal in beginning the treatment.

Vomiting should be controlled by calomel and cerium oxalate.

Quinin is the specific for malaria, but its action can be enhanced by proper combinations.

There is a vast difference between stopping the paroxysms of malaria and a cure.

The mixed treatment is the best. The following has given excellent results in a large number of cases:

℞ Codeinæ phosphatis .....gr. ⅛
Quininæ hydrochloridi .....gr. iij
Arseni trioxidi .....gr. 1/30
Ferri ferrocyanidi .....gr. j
Pulveris camphoræ .....gr. j
Misce et fiat capsula No. I. Dentur tales doses No. XX.
Sig.: Capsule every three hours.

This is given after a good purge with calomel.

For children and those unable to take a capsule the following is good:

℞ Euquinini (Merck) .....3 j
Syrupi pruni virginianæ .....3 vj–3 viij
Rub up the euquinini thoroughly with syrup.
Codeinæ phosphatis .....gr. iss–gr. iij
Liquoris potassii arsenatis .....♏ lx–♏ lxx
Aquæ menthæ piperitæ ....q. s. ad ʒ iij
Misce et fiat misturæ.
Sig.: Teaspoonful every three hours. Shake.

For the pernicious forms quinin must be given hypodermatically.

℞ Quininæ hydrochloridi .....gr. xxx
Antipyrini .....gr. xx
Aquæ destillatæ .....3 j
Misce et fiat solutio.
Sig.: Inject 10 minims every three or four hours.

Quinin hydrobromid, in 3-grain doses, dissolved in 20 minims of pure warm water and sterilized, makes probably the best method of administering quinin hypodermatically. In injection of solution of any of the salts of quinin it should be made deep into the muscle.

Where a solution of quinin is to be given per os, the following affords a good example. Never use any flavoring syrup, as it keeps the bitter taste in the mouth, while a good drink of water in a plain solution removes all the bitterness.

℞ Quininæ hydrochloridi .....ʒ iv
Tincturæ ferri chloridi .....3 iv
Aquæ .....q. s. ad ʒ iij
Misce.
Sig.: Teaspoonful every three hours.

Where there exists an idiosyncrasy against quinin other drugs must be used.

℞ Methylene blue ..... ℈ ij
Arseni trioxidi ..... gr. ss–gr. j
Pulveris myristicæ ..... ℈ ij
Misce et fiant capsulæ No. XX.
Sig.: Capsule four times daily.

Or:

℞ Tincturæ eucalypti ..... ℥ j
Sodii arsenatis ..... gr. ⅓
Acaciæ,
Aquæ gaultheriæ ..... āā q. s. ad ℥ ij
Misce et fiat emulsio.
Sig.: Teaspoonful every two or three hours.

The treatment of malaria should be continued for at least two weeks after the subsidence of all symptoms if the plasmodia are to be completely eradicated. The amount of quinin given should be reduced. Three grains three times daily are sufficient, but must be given so that it will be absorbed—best in capsule, followed by acid drink, as lemonade or dilute muriatic acid. During this period of convalescence iron should be given, and Blaud's pill can not be improved upon. Ferri carbonatis may be given in the quinin capsule.

In chronic malaria, with the enlarged hard spleen, potassium iodid should be used and Fowler's solution should be pushed. In administering Fowler's solution, it is better to begin with a small dose—2 minims—three times daily after meals and increase 1 minim every third day until puffy eye-lids or diarrhea announce complete saturation, when the

dose should be reduced by dropping 1 minim every third day until 2 minims are taken at a dose.

Diphtheria.

Remember that it is highly contagious, either directly from sick to well or through some intervening body, as nurse, physician, or articles about the patient.

Remember that we have diphtheria carriers, as in typhoid. They show no signs of infection, yet the germ has been obtained from their throats.

Remember that milk is responsible for many epidemics, the teats of the cow harboring a virulent organism.

Remember that children from 2 to 5 years are most susceptible.

Remember that not all cases that have a membrane in the throat have diphtheria. The streptococci often cause a diphtheroid condition of the throat, but the clinical symptoms are not characteristic of true diphtheria.

Remember that in the laryngeal form the child is usually hoarse at night and has a brassy, croupy cough.

Remember that dyspnea, becoming extreme as the membrane advances until eventually cyanosis and carbonic acid poisoning, is the course of diphtheritic croup.

Remember that otitis media is frequent in diphtheria, and in the nasal form the eyes may become involved.

Remember that a serous, sanguinous, or bloody discharge from the nose that excoriates the mucosa and the skin is very suspicious of diphtheria.

Remember that paralysis of the soft palate and the regurgitation of liquids through the nose is very characteristic of diphtheria.

Always make a bacterial examination of the throat, as the presence of Klebs-Löffler bacilli makes it diphtheria, regardless of the presence or absence of a false membrane or other clinical signs.

Remember that the systemic reaction caused by the local infection produces fatigue, drowsiness, pallor, coated tongue, anorexia, dysphagia, and vomiting. There may be a chill, but more often chilliness, and the temperature usually rises gradually until it reaches 102° or 103° F., remains stationary a couple or three days, then declines by lysis, and rises again from the fourth to the seventh day. The pharynx is red, edematous, and glistening. A grayish-white membrane, changing later to a dirty-gray, may be seen on the tonsils, fauces, or posterior wall of the pharynx.

Remember that the peculiarities of the membrane are its gradual growth until it covers the tonsils, faucial pillars, uvula, and palate; and, further, that it is firmly adherent, so that when removed a raw, bleeding surface is left, which is again soon covered by a membrane. The voice has a "nasal twang."

Remember that the lymph glands at the angles of the jaw are enlarged and may be tender.

Remember that the membrane may be absent, and nothing more than catarrhal condition of the throat be present on inspection and the patient have a croupy cough.

Remember that in some cases the tonsils are covered by an exudate closely resembling that seen in follicular tonsillitis, and no true membrane be present.

Remember that there are cases in which the toxemia is so profound that the patient succumbs before local lesions occur.

Remember that when bacteriologic examination can not be made, all cases of "sore throat" and croup, especially if there is swelling of the lymph glands at the angles of the jaw, must be regarded as diphtheria.

Treatment.

Hygienic. Confine patient to a room free of carpet, curtains, and superfluous furniture. Keep the room temperature at 68° F. and air moistened by kettle. Good ventilation must be secured. No one but the nurse and the doctor in the room. All bed clothes and whatever is used about the patient should be immediately thrown into a solution of carbolic acid.

Local treatment consists of swabbing, spraying, and gargle—peroxid of hydrogen full strength, carbolic acid 1 to 3-percent solution, bichlorid of mercury 1:5000.

A very excellent method is the application of 95-

percent phenol by swab to the area covered by the membrane, and repeat once daily, making a thorough application.

In laryngeal croup a steam tent may be arranged upon the bed, so that the air breathed by the child will be saturated with moisture. When signs of obstruction are marked, intubation or tracheotomy should be performed.

Hot applications should be applied to the neck of children, while cold should be used in adults.

Diet should be liquid—milk, soups, and broths. Albumen water and plain water should be used freely. The bowels must be kept open, and calomel in fractional doses is best.

Sponging may be used to reduce the fever when the temperature is high.

Stimulants should be used when indicated. It should never be forgotten that the toxin has a selective cardiac action, and the heart must be closely watched.

The patient should be kept in bed and quiet, and all excitement avoided. Atropin sulphate gr. $\frac{1}{100}$–gr. $\frac{1}{60}$, adult dose, administered hypodermatically should be used at the first sign of heart weakening. Inasmuch as the toxins are retained in the body some time after the recovery, the child should be kept in bed two weeks after normal temperature has been established.

Specific treatment is the only sane and rational way to treat. Antitoxin should be administered

early and in sufficient doses. The earlier the antitoxin is given, the less likely to have complications, and especially of the heart. One should make it a rule to give it in cases that are at all suspicious. **Dose enough** is a hard question to decide, because the dosage is empirical. Administer 4,000 or 5,000 units, and repeat in twenty-four hours if no signs of the membrane loosening at the border and the symptoms do not improve. **Antitoxin is harmless,** and should be given until results are obtained.

Rheumatic Fever (Inflammatory Rheumatism).

Remember that this is an acute infectious disease, due to a micro-organism not yet isolated.

Remember that exposure to cold and wet is more important as a cause than heredity.

Remember the close relationship that exists between inflammatory rheumatism and tonsillitis, and frequently an apparent tonsillitis is but the onset of rheumatism.

Remember that the onset is usually sudden, with rigor or chill and a rise of temperature. The pulse is soft and frequent, usually above 100.

Remember the profuse acid sweat, with a peculiar sour odor.

Remember that the joints soon become red, swollen, and exquisitely painful. The peculiarity of the joint involvement of skipping from joint to joint is characteristic of inflammatory rheumatism.

Remember the anemia. No other acute febrile

disease causes such a rapid anemia, which accounts for the pallor.

Remember that the joint involvement is rare in children, and cardiac complication exceedingly common.

The "growing pains" of childhood are rheumatism, and should be carefully looked after.

Remember that arthritis occurring in septicopyemia is fixed, and few joints involved. The fever is more distinctly intermittent.

Remember that in acute osteomyelitis the epiphysis is the seat of the trouble, and the joint is not involved, while the local and constitutional symptoms are more severe.

Remember that gonorrheal arthritis is not migratory. The joints involved are more apt to be the knee, sternoclavicular, or vertebral joints, and the urethral discharge of the male or vaginal discharge of the female should be examined for the gonococci.

Remember that an arthritis deformans may begin with an acute inflammation of joints and fever. It is usually the smaller joints that are involved, but in many cases it will require time to differentiate. When the acute symptoms pass in arthritis deformans we find joint changes with periarticular thickening, while in inflammatory rheumatism there are no permanent joint changes.

Remember that acute rheumatism attacking the joints of the spine may closely simulate meningitis, but the severe headache, pupillary changes, hyperesthesia, and Kernig's sign are absent.

Remember that during the course of acute rheumatic fever, cerebral rheumatism may develop, marked by rapid rise of temperature—106° to 108° F.—rapid small pulse, nystagmus, vomiting, spastic paralysis, strabismus, and wild delirium. This is a very serious condition, which may terminate fatally.

Treatment.

The patient should be dressed in light flannel gown, and confined to his bed between blankets. The inflamed joints should be wrapped with cotton and bandaged.

Diet should be liquid and light. Milk is best, and to it should be added a little bicarbonate of soda. Broths may be used, also farinaceous foods, but meat should not be allowed. Lemonade should be freely given.

Hyperpyrexia must receive prompt and vigorous treatment to save life—the cold bath or cold applied along spine by rubbing with a piece of ice. When the temperature is reduced, there is great likelihood of its rising again. Pain may be so severe as to require hypodermic of morphin. Codein gr. ¼ hourly usually gives relief.

Sodium salicylate for the cure of inflammatory rheumatism is almost universally used. Salicylic acid is often used, but its irritating effect upon the stomach has lessened its general use. Strontium salicylate is used and highly recommended. All these salts should be given in 10 to 15-grain doses,

and for the first twenty-four to forty-eight hours should be repeated often enough so that from 1 dram to 1½ drams are taken in twenty-four hours. The important thing is not the quantity, but the complete saturation of the patient, which is manifested by buzzing in the ears. The drug should then be reduced by lengthening the interval. An alkali should be combined with the salicylate treatment—either sodium or potassium bicarbonate, or potassium citrate. The following have given good service:

℞ Sodii salicylatis .....3 v
Potassii bicarbonatis .....3 iiss
Vini colchici .....3 iij
Aquæ menthæ piperitæ .....q. s. ad ℥ iv
Misce.
Sig.: Teaspoonful every two hours for two days, then every three hours.

Or:

℞ Acidi salicylatis,
Potassii acetatis .....āā 3 iss
Antipyrini .....ʒ ij
Syrupi simplicis .....℥ iss
Aquæ bullientis .....℥ vj
Misce.
Sig.: Tablespoonful every three hours.

Or:

℞ Antipyrini .....gr. xx
Sodii salicylatis .....3 ij
Syrupi sarsaparillæ compositæ .....℥ iij
Aquæ menthæ piperitæ ....q. s. ad ℥ vj
Misce.
Sig.: Tablespoonful every three hours.

Or:

℞ Asperini .....3 ij
Fiant capsulæ No. XII.
Sig.: Capsule every two or three hours.

The following is the best for local application, as it gives prompt relief:

℞ Magnesii sulphatis .....℥ij
Phenolis 3j
Aquæ bullientis .....Oj
Misce.
Sig.: Envelop the joint with cotton lightly squeezed out of this solution, cover with dry cotton, and apply roller bandage lightly.

It is essential that the salicylates be kept up in smaller doses for some time after temperature is normal to prevent relapse.

Convalescence. The administration of iron for anemia—the elixir of iron, quinin, and strychnin (U. S. P.)—is excellent.

CHAPTER XII.

CONSTITUTIONAL DISEASES.

Arthritis Deformans.

Remember that this is an affection in which profound changes occur in the joint, and these changes are not only chronic, but progressive.

Remember that in this condition there is no uniformity in the mode of onset. Some cases have an acute onset, with fever; red, swollen, and tender joints, so closely resembling acute rheumatism that a positive diagnosis will be impossible during this stage.

Remember that in acute rheumatism the tendency is to a complete restoration of the joint function, while in arthritis deformans the tendency is always toward joint destruction, and each attack further impairs the action of the joint.

Remember that the small joints of the hand and feet are the first to be attacked.

Remember that in an acute attack, pain, limitation of movement, and swelling of the joints are present. The intensity of the pain is of no aid in prognosis. First, the characteristic of the pain is that it is **spontaneous,** coming when the joints are at complete rest; often made worse by the warmth of the bed. Second, it is not shifting like that seen in rheumatic fever. Third, muscular cramp, due

to the spasmotic contraction of the atrophied muscles, thus increasing tension and pressure on the inflamed joint.

Remember that swelling is a very early manifestation of the disease. The swelling is fusiform, due to the thickening of the capsule of the joint. The atrophy of the intervening muscles causes the fusiform appearance of the joints to be more pronounced. The large as well as the small joints show this fusiform appearance.

Remember that muscular atrophy occurs in all cases, and is marked by its progressiveness, advancing *pari passu* with the joint lesion.

Remember that in many cases the axillary and inguinal glands are swollen.

Remember that the pigmentation of the skin is a prominent sign in many cases. It occurs on the forehead, temples, face, and neck. The tints vary, but the most common are lemon, orange, or citron color. The patches have a luster varying with the angle of reflected light.

Remember that a rapid pulse, having no relation to the fever, is of considerable value in diagnosis.

Remember that the symmetry of joints involved is very significant, while the large number of joints involved and the absence of any tendency to caseation exclude tuberculosis in the diagnosis.

Remember that Heberden's nodes, when present, are found on the sides and ends of the distal phalanges, especially of the fingers, but sometimes

of the toes. When found, they are of prognostic value, as the large joints very rarely become involved, and these nodosities are said to be promises of long life.

Remember that joint distortion is characteristic, and due to exostoses or outgrowths of bony substances that lock the joint.

Treatment.

Rest during an acute attack is imperative, and, owing to rheumatic simulation at this stage, the salicylates should be given.

Massage should not be attempted with an acutely inflamed joint, but it is clearly indicated after this subsides. When carefully and perseveringly carried out, it is beneficial.

Diet. Plenty of good, nourishing diet should be given. There is not an article of diet that is known to aggravate it.

Baths. Hot baths are excellent and a course at Hot Springs, Arkansas or Virginia, will often be very beneficial.

Medicinal. Fowler's solution of arsenic, given in 3 to 5-drop doses, has given good results in some cases. Guaiacol carbonate gr. v–gr. xv daily and rapidly increased gives good results, and its good effect, as well as that of arsenic, appears to be enhanced if an iodid be combined. The iodid of iron may be given, or a saturated solution of sodium iodid, 10 to 15 drops in milk, an hour after meals.

Superheated air to the affected joints by means of a hot-air apparatus gives good results in many cases.

Gout.

Remember that gout is a nutritional disorder, and the arthritis is due to the deposit of sodium biurate from the blood, which is surcharged with an excess of uric acid.

Remember that the use of fermented liquors and little exercise is responsible for a large majority of the cases.

Remember that gout and arteriosclerosis usually coexist.

Remember that the following are the premonitory signs of an attack of acute gout: twinges of pain in the small joints of the hands or feet, restlessness at night, irritability of temper, and dyspepsia, with scant, highly colored and acid urine that deposits urates on cooling.

Remember that the announcement of the onset is by severe, vise-like pain, occurring in the metatarso-phalangeal articulation of the big toe—most commonly the right. The attack is usually nocturnal, gradually subsiding with approach of day. The joint swells rapidly, the tissues become edematous, and the skin is hot, tense, and shiny. Fever is present.

Remember that the subsidence of the attack by morning, to recur again on the succeeding night, is markedly characteristic of acute gout.

Remember that, notwithstanding the swollen, edematous condition of the joint, it never goes on to suppuration, but gradually subsides and the skin desquamates.

Remember that the deposit increases with each succeeding attack until the joint is swollen, irregular, and deformed.

Remember that the urates are deposited in the cartilages of the ears, along the tendons, and in the bursæ, and may be felt as tophi in the ears.

Remember that severe cramps in the muscles of the calf, abdomen, or thoracic regions occur in the chronic form.

Remember that in gouty subjects severe gastro-intestinal catarrh, with pain and diarrhea, migraine, sciatica, and various other neuralgias, often take the place of the ordinary acute type.

Burning sensation and itching of the feet at night, and skin lesions, such as eczema, is a frequent complaint of patients with gouty diathesis.

Remember that the family history and occupation are exceedingly important factors in arriving at a diagnosis.

Remember that there is a moderate leucocytosis during an acute attack of gout.

Remember that there are some conditions closely allied to gout, but are classed as lithemia. There are various symptoms grouped under this heading, as indigestion, vertigo, headache, nervous irritability, tingling and a sense of numbness, and a slow

pulse, with increased tension and a sharp accentuation of the aortic second sound.

Treatment.

Acute Attack. The first thing to be done is to relieve the pain. The extremes of temperature—cold and hot—should never be applied; necrosis is thus encouraged. The joint should be kept quiet and wrapped in cotton or compress wrung out of water at the room temperature, or gauze out of the following solutions may be applied: equal parts of chlorofom and olive oil, or oil of gaultheria, to which may be added the tincture of opium in the ratio of 1 to 10. The following is good:

℞ Tincturæ opii .....3 v
Olei gaultheriæ .....ʒ j
Chloroformi .....ʒ iss
Misce et fiat solutio.
Sig.: Paint the joint several times daily. Shake well.

Or:

℞ Extracti belladonnæ .....gr. xlv
Extracti opii .....gr. v–gr. xv
Unguenti ichthyolis, 10-percent....ʒ j
Misce et fiat unguentum.
Sig.: Apply two times daily.

Or gauze out of a saturated solution of Epsom salts applied locally.

Medication. Colchicum appears to be the favorite, but should be administered cautiously, and should not be continued indefinitely. The active principle, colchicin gr. $\frac{1}{100}$–gr. $\frac{1}{50}$, combined with codein phosphate gr. ¼, administered every one or

two hours until diarrhea, nausea, etc.—the symptoms of poisoning—when it should be administered less frequently, is excellent. The bowels should be opened freely with saline laxative. Potassium iodid in stubborn cases is good.

℞ Potassii iodidi .....gr. lxxv
Tincturæ colchici .....ʒ iiss
Aquæ destillatæ .....ʒ v
Sig.: Tablespoonful in glass of water after meals.

Sodium salicylate is preferred by many in 15-grain doses four times daily to adult man.

For the uric acid condition, as well as chronic gout, that medication which will assist in holding urates in solution is the best. The disodium phosphate appears to be the important element in dissolving urates, and the administration of calcium salt, preferably the carbonate, protects this sodic phosphate and thus assists in the solution of the urates. This may be prescribed as follows:

℞ Calcii carbonatis .....gr. x
Lithii carbonatis .....gr. j
Colchicini .....gr. 1/100
Pulveris aromaticæ .....gr. x
Misce et fiat pulvere No. I. Dentur tales doses No. L.
Sig.: Powder every three hours in acute conditions; three times daily in chronic or lithemic conditions.

These patients must drink plenty of water, whether it be acute or chronic condition. The alkaline mineral waters are best.

Exercise must be taken, even in acute cases, just as soon as they are able to be up.

Diet. Most of these patients eat too much. The

amount of food should be reduced. Plenty of fresh vegetables and fruits should be taken. Meats are allowable. Fats and carbohydrates should form a large part of the diet, especially the fats.

Lithemic patients should be given potassium iodid at intervals to assist in elimination.

Diabetes Mellitus.

Remember that not all cases which show sugar in the urine are diabetics. The following three factors must be true in all cases of diabetes:

1. The form of sugar in the urine must be grape sugar.

2. It must be found for a long period of time—for weeks, months, or even years.

3. The excretion of sugar must take place after the ingestion of a **moderate** amount of carbohydrates.

Remember that a slight trace of sugar is common in obese persons.

Remember that the two important etiologic factors that produce diabetes are:

1. Pronounced nervous derangement; either functional—as worry, mental shock, or some severe nervous strain; or organic lesion—as disease of the spinal cord or brain, or injury in the region of the floor of the fourth ventricle.

2. Disease of the pancreas, leading to the destruction of the cells of the islands of Langerhans—most frequently caused by chronic pancreatitis, and it is

through this condition that gallstones become an etiologic factor.

Remember that urinalysis reveals:

1. Large increase in the amount of urine for twenty-four hours.
2. High specific gravity.
3. Pale color and sweetish odor.
4. Acid reaction.
5. Sugar is present.
6. Albumin usually.

Remember the diabetic tabes—a peripheral neuritis, with lightning pains in the legs and loss of knee-jerk. The patient has the "steppage gait" seen in arsenical and alcoholic neuritic paralysis.

Remember that a patient complaining of excessive thirst, inordinate appetite, and frequent micturition calls for an examination of the urine for sugar.

Remember that the tongue is dry, glazed, and red, and the mouth is dry. The gums are swollen, and constipation is the rule. The skin is dry, no sweating unless coexisting phthisis be present, furunculosis is common, and general pruritus may be very distressing.

Remember the coma that develops in these cases, due probably to acetone, and usually terminates fatally.

Remember that fraud is often practiced, and cane-sugar has been found in the urine.

Remember that gangrene may occur, due to arteriosclerosis.

Treatment.

Diet. The first thing is to determine the amount of sugar excreted. The next step is to cut off all forms of carbohydrates and try to render the patient aglycosuric. The following outline will assist:

Breakfast. Tea or coffee, ℥ vj; beefsteak or mutton chops without bone, or boiled ham, ℥ iv; one or two eggs.

Lunch. Cold roast beef, ℥ vij; celery, fresh cucumbers, or tomatoes, with vinegar and olive oil, ℥ ij; pepper and salt to taste; water, ℥ xv; coffee, ℥ ij, without milk or sugar.

Supper. Clear bouillon, ℥ x; roast beef, ℥ vij; butter, ʒ iij; green salad, ℥ ij, with vinegar, ʒ ij, and olive oil, ʒ vj; water, ℥ xv.

One or two raw eggs may be given at bedtime and water, ℥ xv.

The amount of sugar in the urine will drop, but, should a small amount continue, it is best then to have a "fast day," when the patient takes no nourishment for twenty-four hours, when it will be found that the patient is not excreting sugar. The diet should be carefully arranged for each individual case.

Skin. Baths should be taken frequently. Warm, or even cold if the patient is robust. Some carbolized soap should be used to wash the skin. Flannel should be worn.

Light exercise or massage should be used, and all worry should be avoided and a quiet, even life lived.

The alkaline mineral waters should be used freely. From 3 to 6 ounces of Vichy may be drunk half an hour before each meal, or Apollinaris may be ordered in much larger quantities.

Medicinal. Opium is the only drug that is worthy of trial. It should be borne in mind that diabetics have a great tolerance for it. Codein may be used, and, as it is less constipating, is preferable. Codein in ½-grain doses should be given three times daily and gradually increased until 4 or 5 grains are taken.

Opium may be exhibited in many ways, as:

℞ Extracti opii .....gr. xv
Extracti gentianæ .....q. s.
Misce et fiat massa. Divide in pilulæ No. XXX.
Sig.: 3 to 12 pills daily.

Or:

℞ Extracti opii .....gr. ss–gr. j
Extracti belladonnæ .....gr. ss
Sacchari lactis .....gr. v
Misce et fiant pulveres. Dentur tales doses No. XXV.
Sig.: 3 powders daily.

Arsenic is very useful in many cases. It may be added to either of the above mixtures, or, better, it may be given as Fowler's solution, gradually increasing the dosage until saturation.

Coma. There is nothing that equals venesection and withdrawal of blood, and replacing it with a 1 or 2-percent solution of sodium bicarbonate in normal salt solution; 1 or 2 pints may be run into a vein every three or four hours if necessary. As a rule,

this is only a temporary relief, and there is recurrence and death.

Remember that by administering sodium bicarbonate at frequent intervals it may be possible to postpone an attack of coma, which is an acidosis.

CHAPTER XIII.

GENERAL CONSIDERATIONS.

Physician and Patient.

One of the most essential things is the patient's confidence, and this can not be obtained by loud, boisterous talking, scolding, fault-finding, or undue jocularity. On the other hand, undue timidity or lack of self-confidence is equally bad. The patient must be in complete "en rapport" with the examiner if the most is to be accomplished.

In no other field is it more important to have accurate knowledge of anatomy. It is essential that the examiner be familiar with regional anatomy—know the location and size of the organs in health and their physiological variations before any accurate idea can be had of pathological conditions.

The examiner must be alert, and use all his perceptive faculties. Often observations of a patient during conversation give very definite information.

It is essential that the physical examinations be conducted in a routine manner. More errors of diagnosis come from the want of system than from the lack of knowledge.

Never attempt to make a physical examination through the clothing. It is impossible to elicit physical signs through heavy clothing, starched

linen, or the corset, while the crackling, friction sounds of certain fabrics will obscure auscultation.

Remember that careful study in the post-mortem room is essential to good work at the bedside. Frequent study of mistakes is always beneficial.

Be thorough in physical examination, but that does not mean that you should be rough. There is nothing else that will so quickly secure complete co-operation of the patient as gentle manipulation. This can be done only by taking plenty of time, with the patient in an accessible position, and know what you are trying to do.

Never mistake a guess for a diagnosis. These "snap" diagnoses are only guesses, and have brought more disappointment than glory, but, if only the physician's reputation suffered, it would not be so bad.

Always obtain a history, not only of the mode of onset of the present ailment, but the past complaints and of the family, especially of any fatal illness of the family. This will give a clew as to the inherited tendencies of the patient.

Where a patient is confined to his bed, always note his posture in bed. Where the attitude is lax and his position controlled by gravity, and he remains in cramped and uncomfortable postures, such a patient is very weak, helpless, or unconscious, and is said to assume the passive position. On the other hand, the less the general feelings are affected, the more natural and unconstrained will be his position.

Again, a patient with respiratory, cardiac, or renal affections, associated with much dyspnea, can not lie upon his back, because the accessory muscles of respiration can be used to advantage only in sitting posture.

Patients are constrained to lie upon one side because of unilateral affection of the thoracic viscera. The patient usually lies upon the abdomen in colic, cardialgia, and sometimes intestinal obstruction, while in peritonitis the abdomen is tender and the patient lies upon his back.

The state of nutrition should be noted. Chronic conditions are usually associated with emaciation. Edema of the skin and subcuticular fat should be distinguished. Remember that edema pits on pressure with the thumb and the depression very slowly disappears.

Observe the color of the skin. Note whether there be pallor. Don't forget the peculiar, waxy pallor of nephritis. Again, cyanosis of the skin and mucous membranes denotes either an insufficient oxidation or an obstruction to the venous return.

Remember that jaundice is significant of biliary trouble. The darker shades signify an obstruction of long duration.

Many of the serious diseases cause undue pigmentation of the skin. Thus, melanosarcoma is accompanied by a diffuse gray to a black discoloration, pulmonary tuberculosis is sometimes associated with a decided brownish discoloration of the face, while

Addison's disease causes a smoky-gray to a bronze discoloration.

Remember that enlarged veins or arteries in the skin suggest collateral circulation, due to some deep-seated obstruction. The veins of the thoracic wall are enlarged with mediastinal or pulmonary tumors that compress the big veins within the chest. Enlarged veins may also be found over the abdomen, due to portal obstruction. The veins about the navel become enlarged, forming the caput madusæ. Abdominal tumors will cause obstruction by pressure. Examine the skin over the abdomen for nodular growths, and, when found, remember they are extremely significant of malignant growths of the abdominal cavity.

Observe the fingers, and note whether they are clubbed. The clubbing is due to a swelling of the terminal phalanges, and is seen only in congenital heart disease, chronic pulmonary disease, most frequently in bronchiectasis and empyema, but sometimes in phthisis.

In fever it is very important to watch the daily course of the temperature, as many affections have a somewhat characteristic course, as typhoid, malaria, lobar pneumonia, etc.

Always observe the respirations. Note their frequency, the type—whether costal or abdominal—the expansion of the two sides of the chest, and note any impairment or bulging of either side or the intercostal spaces.

In observing the pulse, note the frequency, volume, tension, and regularity. Palpate the wall of the vessel to determine the presence of arteriosclerosis. A good method to determine sclerosis is to grasp the patient's wrist with the left hand and elevate the forearm. With the forefinger of the right hand make compression on the radial artery strong enough to destroy the perception of the pulse with the middle finger just below the point of compression. Then, if the vessel can be rolled under the middle finger, sclerosis exists.

Remember that the pulse rate is increased by fever, during digestion, and by coughing. The temperature and pulse curve in fever usually run parallel. The pulse increases eight beats for every degree of fever. In some conditions we find high temperature with slow pulse, as in **febrile brain disease** and tubercular meningitis.

A **slow pulse** rarely occurs as an individual peculiarity, but it is found in "fatty," infiltrated heart and sclerosis of the coronary arteries.

A **capillary** pulse is most frequently observed in aortic insufficiency. It is best appreciated by observing the alternate blushing and pallor of the finger nail. A clean glass slide pressed lightly upon the extended lower lip will sometimes bring it out when it can not be observed in the finger nail. Another useful method is to rub a spot on the forehead until it becomes hyperemic and look for an alternation of redness and pallor.

A liver pulse may be felt as a pulsation along the lower border. It is found most often in valvular lesion of the heart.

Always examine the excretions and secretions of the body. For methods and significance of findings consult some work on that subject.

Remember that palpation is the most valuable of the methods of examining the abdomen. The patient should lie in bed and the abdomen should be bared. The hands of the physician should be warmed, and palpation should be done by gentle pressure. Frequently the tips of the fingers used in palpating reveal more than the palms.

There are two ways of palpating the abdomen, and the one to use depends upon the part to be palpated. Thus, bimanual palpation may be from side to side, the wall of the abdomen being deeply folded between the hands. Any accessible organ or tumor may thus be studied. Or the lateral regions of the abdomen are best palpated by placing one hand posteriorly and the other anteriorly. In this manner the liver may be raised against the anterior wall and the lower border examined, or a palpable kidney brought within the grasp of the palpating hands, or the splenic enlargement studied, or carcinoma of the sigmoid flexure palpated. By this method deep fluctuation may be elicited in renal or appendiceal abscess or a hydronephrosis studied. Where tenderness exists, it is better to watch the expression of the patient's face than to depend upon any statement he may make.

In palpating an abdomen, always distinguish between superficial and deep tenderness. The superficial is due to hyperesthesia of the skin, and a light touch causes more pain than firm pressure. This condition is frequent in hysterical women.

Pain caused by deep pressure signifies an inflamed or congested organ.

Excessive abdominal fat will prevent obtaining accurate information by palpation.

When the abdominal muscles become tense, due to apprehension, excitement, or other nervous causes, elevate the head upon pillows and have the limbs flexed at hips and knees.

Use should be made of respiration in palpating abdominal organs. Thus, continuous deep breathing will be very helpful in determining either the borders of an organ or to what organ a tumor probably belongs, or, again, rapid breathing will assist.

There must be a systematic examination of the abdomen. The following outline will be of assistance and is given merely as a guide:

1. Condition of the abdominal wall.
2. Fluctuation, general and local.
3. Pulsation, thrill, and fremitus.
4. Respiratory, postural, and manipulative movements of organs or tumors.
5. Peristaltic and fetal movements.
6. Outline and relation of palpable tumors.
7. Density and elasticity of the tumors.
8. Nature of the surface of the tumors.

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