SUPPLEMENT.

DISEASES IN WHICH THE ADRENAL SYSTEM PLAYS A LEADING PART.

In addition to the more common and fatal diseases treated in full in both volumes, there are others in which the internal secretions and the centers of the neural lobe of the pituitary fulfill an important rôle. Several of these, in fact, the pathogenesis of which is admittedly unknown, can only be accounted for through the functions of these organs as interpreted in these volumes. Yellow fever, appendicitis, rheumatism, endocarditis, smallpox and other exanthemata, leprosy, dengue, chorea, cirrhosis and yellow atrophy of the liver and other familiar diseases are shown below to belong to this series, while influenza, hysteria, the traumatic neuroses, neurasthenia and others prove to be disorders of the sympathetic center of the posterior pituitary body.

The doses of animal "extracts" given below are based on the preparations of Burroughs, Wellcome & Co., which are standardized chemically and physiologically.

Acromegaly 186, 192, 1018

Characterized by general hypertrophy, especially of the bones. Due to hyperplasia of the anterior pituitary and its consequences: persistent stimulation of the adrenal system and supranormal oxygenation. This entails overnutrition, particularly of the hands, feet, etc., where the capillaries are exposed to the relatively excessive pressure which the long and overactive arteries of which they constitute the terminals, impose upon them.

Treatment of this, the *sthenic* stage: *Arsenic* to reduce the sensitiveness of the adreno-thyroid and vasomotor centers and relax the arteries, with *potassium bromide* or *veratrum viride* on retiring, to sustain the effect. *Diet* devoid of red meats, coffee, tea, *i.e.*, of foods and stimulants capable of exciting the anterior pituitary and of promoting a high vascular tension. Two quarts of *Vichy* water daily or an equivalent of *saline solution* to maintain free osmosis and elimination of wastes which tend to excite the anterior pituitary and its test-organ.

When the morbid changes in the anterior pituitary are sufficient to inhibit its functions, the *asthenic* stage, of which muscular atrophy, cardiac dilation, and general adynamia are the most prominent symptoms, point to the main pathogenic factor: deficient functional activity of the adrenal system.

Treatment here involves the use of agents which are contraindicated in the sthenic stage: *thyroid gland* in small doses, to replace the deficiency of thyroiodase, and *adrenal gland* to supplement the limited amount of adrenal secretion which the adrenals furnish, and thus add adrenoxidase to the blood. *Adrenalin*, very largely diluted in warm *saline solution* injected intravenously twice a week to add further to the blood's adrenal active principle, the dynamic principle of life. See also DISEASES OF THE PITUITARY, Vol. I.

Actinomycosis 1168

An infectious disease communicated by cattle to man, due to the ray-fungus, a yellowish granule 1 to 2 millimeters in diameter, with radiating club-shaped projections. The nodules containing them form dense masses which break down, forming abscesses.

Treatment: The ray-fungus succumbs readily under the action of the blood's auto-antitoxin when ade-

quately sensitized; hence *potassium iodide* in large doses to stimulate the adrenal system and increase the blood's auto-antitoxin and thyroiodase (opsonin). *Thyroid gland* simultaneously, if the case is rebellious. Free use of *water* as beverage to facilitate the elimination of detritus. Alcohol counteracts the beneficial action of these agents by deoxidizing the blood.

Acute Anterior Poliomyelitis.

An acute febrile disease which occurs in children towards the third year, characterized by a sudden onset, fever, headache, pains in the back, limbs and joints, delirium and sometimes stupor or convulsions. After a couple of days these symptoms subside and paralysis of various muscles in one or more limbs appears suddenly, the muscles involved wasting rapidly though sensation and sphincter action remain normal. It is probably an infection, the brunt of which occurs in the gray substance of the anterior horn, usually localized in the cervical or lumbar enlargement, in which the inflammatory process, at first a marked intrinsic congestion of all nervous elements, including the ganglion cells, tends to atrophy and finally to become sclerosed.

Treatment: The fever having for its purpose to destroy the pathogenic cause, the chances of paralysis are increased when the febrile process is antagonized. To increase its efficiency *calomel* in small frequently repeated doses until the stools become greenish, followed by a dose of *castor oil*. To prevent development of paralysis warm (106° F.) *saline solution* enemata and if possible subcutaneous injections (to increase the fluidity of the blood and insure the free circulation of the auto-antitoxin-laden plasma in the spinal neuroglia, its cells, and the exposed ganglion cells).

During the first month, and to a certain extent during the first few months, there is a tendency to spontaneous resolution: continuation of *saline solution* for the same purposes as above, and *atropine* or *tincture of belladonna*, alternating with *strychnine*, to increase the propulsive activity of the arterioles, including those of the cord, nerves and muscles exposed to degeneration. *Massage*—invariably rubbing centripetally to enhance the nervous circulation—simultaneously; *faradism* of the exposed muscle and out-of-door life are important adjuvants.

Acute Ascending Paralysis (Landry's Paralysis).

Characterized by rapidly progressing paralysis beginning with the lower extremities and extending upward (sparing sensibility, and the functions of the bladder and rectum) and finally involving the organs of respiration and circulation, heart, etc. It proves fatal in most instances in from a few days to a month, but recoveries have occurred.

Due to paresis of the sympathetic center (probably from shock, concussion, etc.) as shown by the tingling of the extremities, absence of muscular wasting, hyperæsthesia, muscular tenderness, sweating, œdema and splenic enlargement,—all the result of an excessive influx of blood through the dilated arterioles.

Treatment: *Biniodide of mercury* solution intravenously to stimulate powerfully and at once the adrenal system and increase the nutrition of the exposed sympathetic system. After a few days, *atropine* subcutaneously, in addition, to stimulate the sympathetic center and increase the propulsive activity of the arterioles, thus sustaining the nutrition of the muscles. *Morphine* with the atropine if the hyperæsthesia is increased, to reduce the caliber of the arterioles. *Sodium salicylate* — which has the properties of atropine and morphine, though less active—may be used to alternate with these agents. Free use of *Vichy* water to preserve the osmotic properties of the blood circulating in the exposed nervous elements.

Acute Delirium (Bell's Mania).

Characterized by violent delirium with fever, incessant incoherent talking, hallucinations, ceaseless activity, jactication and incessant tendency to violence.

Due to auto-intoxication and excessive excitation, by the toxics, of the vasomotor center and its normal result: intense constriction of all arteries followed by congestion of all organs, including the cerebral cortex, engorgement of all veins, lymph spaces, etc., the acute delirium being due mainly to the cortical hyperæmia. Has generally proved fatal.

Treatment: At once: *Croton oil* to clear the intestine of imperfectly digested materials. Bleeding, immediately followed by intravenous injections of hot (110° F.) *saline solution* to dilute the blood, arrest the irritation of the vasomotor center, and facilitate elimination of the toxic wastes. As temporary measure: *potassium bromide* and *chloral hydrate* to depress the vasomotor center and deplete the cerebro-spinal of the excess of blood it contains, and, if inadequate to arrest the delirium, *antipyrin* besides, to reduce the caliber of the arterioles and the volume of blood admitted into the brain. *Milk diet* with addition of common salt to limit the wastes formed and facilitate the elimination of those that are formed.

Contraindicated. — Morphine, the preliminary effect of which is to increase the cerebral hyperæmia; chloroform, which acts by raising the blood-pressure; ergot, which does likewise; cold-baths, which increase the toxic wastes; a generous diet, which does likewise.

Treatment subsequent to the acute attack: that indicated for epilepsy, and frequent saline purgation.

Acute Yellow Atrophy of the Liver.

A rare disease characterized by rapid destruction of the liver, which is found yellow and shrunken post-mortem. Besides headache, gastric disturbances, colic, drowsiness and other commonplace symptoms, there is marked jaundice, a tendency to hæmorrhage: epistaxis, hæmaturia, hæmatemesis, etc., a very high specific gravity of the urine (which contains leucin spheres and tyrosin needles) and moderate fever, followed by rapid diminution of the liver dullness. Has generally proved fatal.

Due to autolysis, principally of the liver and arteries, owing to the presence of a marked excess of auto-antitoxin and thyroiodase (opsonin) in the blood, and caused by toxics such as alcohol, a great excess of wastes, as during pregnancy (the fœtal plus maternal wastes), of the toxins and endotoxins, of infectious diseases, etc., which violently excite the test-organ, and through it the adreno-thyroid center.

Treatment: As the febrile process is not marked (rarely above 102° F.), the hæmolysis is mainly due to the presence of an excess of thyroiodase (opsonin) and to supranormal sensitization of the liver and endothelial lining of the arteries, the latter being the cause of the hæmorrhages. Hence *arsenic* to counteract the excessive activity of the thyroid apparatus and *saline solution* intravenously to dilute the blood as rapidly as possible, and facilitate the elimination of the pathogenic poisons. *Saline purgatives* to prevent auto-intoxication of intestinal origin and *milk diet* during the acute stage.

Addison's Disease.....77, 1017

Characterized by pigmentation of the skin from yellow to dark-brown or "bronze" or a glossy black, emaciation, asthenia, hypothermia, deficient urea excretion, dyspnœa, and more or less gastro-intestinal disorder.

Due to a sufficiently advanced functional or organic disorder (especially tuberculosis and cancer) of the adrenals or its nerve-paths in the semilunar ganglia, the splanchnic, the upper dorsal sympathetic ganglia, the upper cord, bulb, tegmentum, tuber cinereum or pituitary body, to reduce to a very marked degree the adrenal secretion produced, and therefore the adrenoxidase supplied to all tissues. Hence the foregoing symptoms, which are all the result of hypometabolism.

Treatment: The only remedy of value is *adrenal gland* orally to supply the blood with the adrenal principle it lacks to carry on its functions, beginning with 3 grains twice daily until the temperature is raised to normal; then adjust dose to keep it at 99° F. Fresh *mutton* or *beef gland* may be given twice daily in 5- to 10-grain doses if above not obtainable. Adrenalin injections contraindicated as they expose the patient to sudden death. *Creosote carbonate* 5 grains t.i.d., if case due to adrenal tuberculosis. *Rest* to avoid the excess of toxic wastes which physical exertion provokes; *foods poor in nucleins* for the same reason. See also DISEASES OF THE ADRENALS, Vol. I.

Contraindicated: Thyroid gland, which serves only to excite the diseased structures; arsenic, which further depresses the already deficient adrenal functions; alcohol, which deprives the blood of some of its oxygen, and stimulants in general which hasten the morbid process.

Adiposis Dolorosa (Dercum's Disease).

Characterized by the presence of roughly symmetrical masses of subcutaneous fat in the limbs and trunk of middle-aged women, which masses are the seat of pain and disorders of sensation. Due to inadequate functional activity of the adrenal system and the resulting hypocatabolism of carbohydrates, the pain and paræsthesia being the result of traction and pressure upon the sensory nerves of the adipose masses.

Treatment: *Thyroid gland* to enhance catabolism, supplemented at intervals by a course of mercurials to actively stimulate the test-organ and through it the adrenal system. *Saline solution*, subcutaneously or intravenously or the free use of *alkaline mineral waters* to facilitate the elimination of catabolic wastes. See also DISEASES OF THE PITUITARY, Vol. I.

Alcoholism, Chronic. 1231, 1240, 1258

A debilitated condition of the adrenal system caused by the immoderate use of alcohol as a beverage. It may either be inherited from alcoholic parents, when it is termed *dipsomania*, or acquired. Hence the predisposition of the offspring of alcoholics to disorders of nutrition, gout, rheumatism, etc., and their vulnerability to infections; hence also the fatality of infectious diseases among all victims of chronic alcoholism: their adrenal system being depraved, the auto-antitoxin and thyroiodase (opsonin) it is able to produce is inadequate to protect them.

Due to the continuous oxidation of alcohol in the blood at the expense of its adrenoxidase, and deficient nutrition of all organs, including those of the adrenal system: both lobes of the pituitary body and their centers, the thyroid apparatus and the adrenals. The craving for drink is, aside from the gratification of the sense of taste, the expression of a physiological need of some agent capable of counteracting the morbid effects of metabolism of the inefficient adrenal system.

Treatment: The use of active stimulants of the test-organ to restore through it the functional activity of the adrenal system, avoiding, however, agents of this class which expose the patient to a drug habit. *Thyroid gland* in small doses to stimulate the adrenal system and sensitize all organs, particularly the great nerve-centers. After two weeks *mercury biniodide* in addition to act directly upon the test-organ and through it further excite the adrenal system, watching carefully for any evidence of salivation, when the dose should be reduced slightly. A month usually suffices to produce considerable benefit, provided the abstention from alcohol be absolute, since it counteracts the beneficial effects by deoxidizing the blood. At this time the blood is rich in auto-antitoxin and the vessel walls have resumed their normal tone. The mercury is now replaced by *atropine* ($\frac{1}{120}$ grain t.i.d.) to enhance the propulsive activity of the arterioles and thus increase general nutrition—inhibition of which had previously inspired the craving.

To prevent recurrence, the above treatment should be followed by the continuous use—one or two years—of *strychnine* or *gold chloride*, another active stimulant, with *nutritious food*, including *coffee* to sustain the activity of the test-organ and vasomotor center until all organs, including those of the adrenal system, have, through active intracellular metabolism and the resulting nutrition, resumed their normal tone and resistance.

Contraindicated: Cocaine, owing to the danger of initiating cocainism; morphine, which constricts the arterioles and inhibits nutrition; all hypnotics, chloral, bromides, trional, sulphonal, etc., which act similarly by depressing the vasomotor center, and in large doses, the adrenal system besides.

If when the alcohol is withdrawn there is excitement and insomnia *hydrobromate of hyoscin*, which depresses but slightly the blood and constricts the arterioles, thus reducing the blood admitted into the cerebro-spinal system (as well as in other organs), may be used, but only as long as absolutely required.

Amblyopia, Alcoholic 1231

Amnesia 1258

Amyloid Liver (Waxy Liver).

A condition in which a substance resembling starch, lard or wax is found more or less disseminated throughout the liver, characterized during life by enlargement of this organ, which under palpation is hard, smooth and painless. It is often associated with amyloid spleen and kidney, and is not accompanied by jaundice or ascites, except in far advanced cases.

Due to the accumulation in the liver of cellular, especially leucocytic, detritus, glycogen and other carbohydrates, etc., owing to two main morbid factors: (1) a deficiency of auto-antitoxin in the blood to break down detritus and convert it into eliminable products, the result in turn of the functional inefficiency of the adrenal system to which the causative diseases (and sources of detritus) such as rickets, tuberculosis, syphilis, etc., are primarily due; (2) a sufficiently great deficiency of mineral salts in the blood and lymph to interfere with the osmotic properties of these fluids and prevent free drainage of such organs as the liver, spleen, the lymphatics, etc., in which large accumulations of cells and detritus occur.

Treatment: Before any drug is used: pure, *un*sterilized sea-water, beginning with tablespoonful doses t.i.d. and increasing gradually until, if possible, one-half tumblerful is taken or equivalent saline beverages. In addition, a quart of hot (110° F.) *saline solution* per rectum three times a week on retiring. *Subcutaneous* or *intravenous injections* of alkaline solutions are not indicated at first owing to the obstruction of the hepatic vessels, but may be used when the liver begins to recede. After two or three weeks of the above treatment, *thyroid gland* to stimulate the adrenal system and increase the proportion of auto-antitoxin and thyroiodase (opsonin) in the blood to break down the detritus which may now be reached adequately owing to the improved osmotic properties of all body fluids. The *iodides*, if thyroid extract is not available, or *biniodides of mercury* intravenously.

The diet should include vegetables to increase the body's asset in alkaline salts.

Amyloid Spleen or Kidney.

Due to conditions similar to those that prevail in amyloid liver and subject to a similar line of treatment, avoiding, however, the subcutaneous and intravenous use of saline solution if there is any reason to believe that the kidney is obstructed to any marked degree.

Anæmia, treated in full..... 1771

Anæmia, Pernicious, treated in full 1778

Anæmia, Splenic.

Characterized by symptoms of marked anæmia, with a yellowish tinge of the skin and mucous membranes, emaciation, weakness, dyspnœa, palpitations, fever, a tendency to hæmorrhages, œdema in advanced cases, and mental torpor, with the physical signs of enlarged spleen. Due to overactivity of the spleen and the production of an excessive amount of its internal secretion (nucleo-proteid), which combines with the pancreatic internal secretion in the splenic vein. The excess of phosphorus-laden nucleo-proteid, by combining with the adrenoxidase of the blood, enhances the proteolytic activity of the latter excessively and hæmolysis occurs, as in pernicious anæmia, the red corpuscles being sometimes reduced to 1,000,000.

Treatment: Same as in pernicious anæmia (q.v.) with intravenous injections of warm *saline solution* to increase the fluidity and osmotic properties of the blood as soon as possible, followed by the free use of water.

Angina Pectoris, treated in full. 1565

Angioneurotic Œdema.

Characterized by the sudden appearance around the eyes, on the face, hands or other regions, of soft œdematous swellings which sometimes are the seat of redness, heat and itching. When the larynx is thus affected, death may occur from œdema of the glottis. Due to sudden dilation of the arterioles of the affected areas, owing to a temporary paresis of the corresponding neurons in the sympathetic center.

Treatment: *Antipyrin or acetanilid* to arrest the attack by exciting the sympathetic center, or *morphine*

hypodermically in urgent cases. *Strychnine* to increase the functional activity of the adrenal center and increase general nutrition, including that of the debilitated neurons.

Anorexia Nervosa.

Characterized by loss of appetite and an extreme aversion for food, adynamia, dyspnœa, vertigo and occasionally vomiting. Sometimes proves fatal through inanition.

Due to functional torpor of the adrenal system followed by imperfect nutrition of the body at large, including the pituitary body and its centers, and the vasomotor center. All vessels being dilated, the blood recedes from the capillaries, including those of the gastric mucosa, and appetite is not awakened by the latter, just as dyspnœa is caused by the deficiency of blood which circulates in the alveolar capillaries, the vertigo by the cerebral ischæmia, etc.

Treatment: *Strychnine* hypodermically to excite the test-organ and through it the adrenal system, followed, after two or three days, by *atropine* hypodermically to enhance the propulsive activity of the arterioles, including those of the stomach. *Forced feeding* with the stomach tube or per *rectum*.

Anosmia 169

Absence of the sense of smell, due to imperfect lubrication, catarrhal inflammation, or ischæmia, of the olfactory area, the nervous elements in the latter case being insufficiently supplied with blood to take cognizance of olfactory impressions. The central transmission of the latter may also be due to any lesion of the olfactory tract.

Treatment of the causative disorder. All cases that are not due to a destructive lesion are benefited by *strychnine*, which increases metabolic activity and raises the blood-pressure in the olfactory area as elsewhere, and the frequent use of a coarse, lukewarm spray of *saline solution* in the nasal cavities to lubricate them.

Anthrax.

An infectious disease transmitted to man by the flesh, fluids, and hair or wool of infected animals, especially cattle and sheep. The anthrax bacillus, which may be ingested or inhaled from contaminated animals, or infect an abraded surface, multiplies rapidly in the body fluids. In internal anthrax, the toxin (anthracin) provokes a more or less violent defensive reaction of the adrenal system, including high fever; but, in malignant cases, the centers are soon paralyzed by the poison, the sympathetic center being the first to yield. The arterioles being relaxed, cutaneous hyperæmia, œdema (*malignant anthrax œdema*) and even gangrene may occur. Infection through the alimentary canal (*intestinal anthrax*) is ushered in by nausea, vomiting, abdominal pain and bloody diarrhœa, in addition to the febrile manifestation. Infection through the lungs (wool-sorter's disease) adds an acute bronchitis to the symptoms of general infection, death ensuing very rapidly.

In the form most frequently met with: inoculation through an abrasion from infected rags, wool or hides (*malignant pustule*), there is at first a local burning pain and itching; a red papule appears which soon becomes a vesicle containing bloody serum. This papule ruptures and forms a dark scab surrounded by miliary vesicles and œdema. This constitutes the form of general infection.

Treatment: *Excision* of the pustule, or at least *vigorous cauterization* after opening it freely, is necessary. *Chloroform* anæsthesia can only prove beneficial by causing a high vascular pressure, crowding blood into the diseased area and promoting hæmorrhage therefrom. It should be employed, therefore, to do the surgical work thoroughly.

To offset the toxæmia in both external and internal anthrax, *biniodide of mercury* intravenously to increase the blood's auto-antitoxin at once, with *thyroid gland* to increase its thyroiodase (opsonin). Or, *calomel* in small doses frequently repeated until the stools become greenish, and *quinine* in full doses, to drive auto-antitoxin-laden blood into the peripheral capillaries or those of the internal organs affected—in order to promote active phagocytosis and bacteriolysis therein, the patient's only salvation.

Apoplexy. See Cerebral Hæmorrhage.

Appendicitis 1377

An inflammation of the vermiform appendix which may be catarrhal or ulcerative, and entail, in the latter case, gangrene or perforation of the organ, with infection of the peritoneum.

Due to any condition which lowers the secretory efficiency of the lymphoid follicles of the appendix, or which, to any marked degree, inhibits the bacteriolytic activity of the auto-antitoxin their secretion contains. Concretions, foreign bodies, intestinal entozoa, etc., are predisposing factors, but the most important agencies of this kind are: (1) General adynamia, neurasthenia, debilitating agencies such as fatigue, influenza, etc., which involve depression of the functional activity of the adrenal system; (2) blows or contusions in the appendicular region, which lower the vitality of all its cellular elements, and—probably the most frequent exciting cause of acute attacks—(3) more or less sudden chilling of the abdomen, especially when it is warm and moist, in the appendicular area, the lowered temperature to which the bacteriolytic constituent of the appendical auto-antitoxin (the ferment trypsin) is exposed, inhibiting its activity, and thus giving free sway to the micro-organisms the organ contains, viz., the ubiquitous bacillus coli communis, the streptococcus pyogenes, the staphylococcus pyogenes aureus, the proteus vulgaris, etc., and any specific germ that may be present.

Treatment: Whether medical or surgical, this must be based upon the fact that the vermiform appendix is *not*, as now taught in text-books, a functionless structure of low vitality, but that the rôle of its lymphoid tissue is to secrete a relatively large quantity of succus entericus containing auto-antitoxin which has for its purpose (aided by phagocytes) to insure asepsis of the cavity of the appendix itself; and of the cæcal cavity—which is particularly exposed to the accumulation of putrefactive materials—into which the appendix secretes it. The aim should be, therefore, to increase rapidly the blood's asset in auto-antitoxin and thyroiodase, and, thereby, the bacteriolytic and antitoxic efficiency of the appendical secretion, and also the amount of the latter.

Calomel, in $\frac{1}{10}$-grain doses every fifteen minutes, and *thyroid gland*, 2 grains every three hours, most effectually accomplish this object. The spread of the infection will be restricted, the likelihood of hæmorrhage diminished by the increase of fibrin-ferment (adrenoxidase) in the blood, while the chances of recovery should surgical measures prove necessary (if distinct improvement does not occur within forty-eight hours) are greatly increased. *Rest in bed* is imperative, with *hot applications* (hot-water bag, poultices, etc.) over the painful area to increase the proteolytic efficiency of its auto-antitoxin and relieve pain. A *milk diet* assists materially the curative process, *sodium chloride* being added as freely as the taste of the patient will allow. *Milk and Vichy*, equal parts, form a palatable drink which tends further to preserve the osmotic properties of the blood. To deprive the patient of fluids, as advised by some, is a mistake, since they—at least milk and water—are absorbed long before the cæcum is reached. The bowels should be emptied daily with warm *saline solution* enemata, adding two teaspoonfuls of *glycerine* to the pint of solution if free action is not obtained.

Arteriosclerosis, treated in full. 1548

Arthritis Deformans.

A disease distinct from rheumatism and gout, characterized by degenerative changes in the synovial membrane, cartilages and bones of the joints, and leading to deformity of the latter. In the *acute polyarticular* form, which occurs usually in young women as a result of pregnancy, the joint is painful and red and there is fever, and subsequently mental depression. In the *chronic polyarticular* form, there is pain, impaired mobility and nodules in many joints, especially those of the hands, with paræsthesias, sometimes slight fever, and muscular atrophy. In the *monoarticular* form, often observed in aged subjects, large joints such as the hip (morbus coxæ), shoulder or knee, are the seats of predilection and subluxations are frequent. *Haberden's nodes* occur in the distal finger-joints, which at times become tender or actually painful with cutaneous redness and tumefaction, and are usually observed in

middle-aged women, usually causing pain, but only on motion.

Due to deficient nutrition of the joints, or muscles affected owing to deficient propulsive activity of the arterioles, a result, in turn, of paresis of their sympathetic nerve-supply. The *polyarticular* forms are due to impairment of the functions of the sympathetic center—the main one of *sensorium commune;* hence the fact that shock, worry, grief, uterine disorders, etc., are prominent etiological factors of the disease. The *monoarticular* forms are mainly the result of traumatism, freezing, etc., which paralyze temporarily the vessel walls of the exposed parts; and in aged subjects, to senile degeneration of their sympathetic fibers.

Treatment: This should aim to increase nutrition of the body at large and therefore of the sympathetic center. *Biniodide of mercury* to excite the test-organ and through it the adrenal system, alternating with the *iodides* in full doses and given in large dilution. Painting of the diseased joints with tincture of *iodine* to provoke irritation and increase the local blood-supply. After a month or so, *atropine* or *tincture of belladonna* to excite the sympathetic center and restore the propulsive activity of the peripheral arterioles. *Dry hot air* to the joints to enhance the proteolytic activity of their auto-antitoxin and promote the destruction of abnormal formations, and at least one quart of some *alkaline mineral water* such as Ballardvale, or Londonderry Lithia, to insure a free elimination of detritus.

Ascites.

An accumulation of fluid in the abdomen through engorgement of the vessels that drain the peritoneum, the most frequent cause of which is obstruction of the portal circulation by hepatic diseases, cirrhosis, for example; tumors in the liver, or external to it, *i.e.*, in the peritoneum, spleen, etc.; obstruction to the lymphatic circulation; chronic inflammation or disease of the peritoneum (tuberculosis, syphilis, etc.) and various disorders of the heart and lungs.

Treatment: Tapping and treatment of the causative disease, several of which, tuberculosis, cancer, etc., are amenable through the intermediary of the adrenal system.

Beri-beri.

An endemic multiple neuritis observed especially among seamen, characterized by paræsthesias, anæsthesia, anæmia, more or less œdema beginning in the legs, rapid and weak heart action, dyspnœa, fever, loss of tendon reflexes and muscular atrophy.

Due to any poison such as fish ptomains, toxin, etc., which depresses the functional activity of the vasomotor center, the blood being caused to recede in the deeper vessels, owing to the general relaxation of the arteries. The latter condition is the cause also of the œdema which begins in the most dependent portion of the body, while recession of the blood from the peripheral capillaries accounts for the anæsthesia and other paræsthesias, and for the muscular atrophy.

Treatment: *Ergot* and the other agents of the oxytocic group are direct antagonists of this condition, but their action can only be ephemeral—even though the causative conditions be removed—until the organs of the adrenal system (the pituitary and thyroid being also hypoactive because of ischæmia) are made to resume their normal activity: *thyroid gland* in 2-grain doses, t.i.d., and *biniodide of mercury,* by jointly stimulating the adrenal center, not only produce this effect, but tend to cause constriction of the arteries by increasing nutrition of their muscular coat. *Ergot* may then be used to excite the vasomotor center, the effect being sustained subsequently with *strychnine.*

Bronchiectasis.

Bronchial dilation due to weakness of the bronchial walls as a result of the unusual strain imposed upon them during coughing in the course of chronic bronchial disorders, bronchitis, tuberculosis, broncho-pneumonia, pertussis, etc. It may also follow bronchial obstruction by a foreign body, accumulated secretions, compression by a tumor, an aneurism, etc., traction through fibroid induration and may occur as a congenital defect. It gives rise to persistent, paroxysmal, morning cough, accompanied by the expectoration of large quantities of yellow-green muco-pus which divides into three layers: the upper, thin and frothy, the middle mucoid, and the third of pus containing detritus, fat and hæmatoïdin crystals, red corpuscles, etc. It does not *per se* cause fever.

Treatment: That of the accompanying disease. The diminution of the bronchial muco-pus is greatly facilitated by *saline solution* used subcutaneously to enhance the fluidity of the blood, while *thyroid gland* in small doses (1 grain t.i.d.) with *creosote carbonate,* given in capsules in increasing doses not only increases the proportion of auto-antitoxin and thyroiodase in the blood by stimulating the adrenal system, but also the volume of blood admitted into the diseased tissues, thus promoting resolution.

A chronic inflammation of the bronchial mucosa, usually bilateral, attended by stubborn nocturnal and morning cough and accumulation of muco-purulent material in the respiratory tract. There may be slight fever, but as a rule, the general health remains good until the expectoration becomes excessive, when emaciation may occur. The quantity voided sometimes reaches two quarts in the twenty-four hours: *bronchorrhœa,* while conversely it may be very limited, tenacious and viscid: *dry* bronchitis. The secretions may also remain sufficiently long in the air-passages to become putrid and very offensive: the *fœtid* or *putrid* form which may be accompanied by emaciation, anæmia, adynamia and fever.

Due to any condition of internal or external origin which causes undue and prolonged irritation of the bronchial mucosa. This may be caused by repeated colds, *i.e.*, through recurring irritation of the mucosa by intermediate products of metabolism from the region exposed to cold and damp which are eliminated by all channels, even vicariously through the secreting elements of the bronchi—a complication also of Bright's disease; or through a similar process carried on by toxins in influenza, measles, pneumonia, etc.; the local irritation attending the morbid process in tuberculosis, and other local disorders—all aggravated by the rise of blood-pressure which occurs in the course of many of these disorders, and which provokes marked hyperæmia of the bronchial capillaries.

Treatment: As in all cases of chronic bronchitis of endogenous origin that are at all severe, the mucosa remains "inflamed" owing to the pathogenic substances in the blood; the treatment should aim to rid the body of their presence: *Saline solution* hypodermically or subcutaneously to promote osmosis, to facilitate the circulation of the plasma through the ultimate bronchial capillaries and to enhance the elimination of detritus by the kidneys and the bronchial mucosa. This is materially aided by a few days' *reduced* or *milk diet.* Then *thyroid gland* in 2-grain doses after each meal, reduced to 1 grain the second week, but giving in addition *creosote carbonate* in capsules in 10-grain doses, increasing by 5 grains weekly until 30 grains are taken three times daily. The thyroid gland increases the auto-antitoxin and thyroiodase of the blood, while the creosote enhances this action, and by exciting the propulsive action of the pulmonary arterioles, floods the diseased area with curative blood. The *iodides* may be used instead of the thyroid, but are less active. To sustain the beneficial effects after recovery, *strychnine, digitalis* and *coca* are the most efficient remedies. The patient should drink at least one quart of *Vichy mineral water* daily to sustain the osmotic properties of his blood and lymph.

Caisson Disease.

Occurs in workers in caissons, diving bells, etc., as a result of the supranormal atmospheric pressure to which they are submitted therein, and is characterized within twenty or thirty minutes after returning to normal air-pressure by vertigo, paræsthesias, muscular hyperæsthesia, pain in the head, ears, joints and epigastrium, vomiting and, in severe cases, coma and death. Paralysis, especially paraplegia, is a characteristic complication which comes on suddenly.

Due to excessive compression of the capillaries in the superficial and *soft* tissues, and forceful projection of their blood into the deeper vessels and into those capillaries which, such as those in the deeper organs or cerebrospinal system, are protected from the pressure through their situation or bony covering—the vertebral column and skull in the latter case. The blood-plasma in the nervous elements, neuroglia, cell-bodies, dendrites, etc., through the centrifugal pressure thus exercised, become abnormally dilated—a condition which, repeated, finally impairs their functional integrity—the source of the paralytic phenomena. This applies as well to the capillaries of other tissues, their dilation, followed by sudden hyperæmia, when exposure to normal atmospheric pressure is resumed, accounting for the pain, muscular hyperæsthesia, etc., observed.

Treatment: The aim should be to place the worker's vascular system in a condition such as to avoid the pathogenic capillary congestion. He should avoid coffee, tea, alcohol and much red meat, to prevent a high blood-pressure. Almost absolute protection could be afforded—if practicable—by the use, twenty minutes before entering the caisson, of *sodium bromide*—repeating the dose as necessary—to depress the vasomotor center, and thus cause dilation of the large blood-channels of the splanchnic area, and ischæmia of the peripheral capillaries. The effect of excessive pressure would thus be annulled at least to a material degree.

The treatment of developed symptoms should be on similar lines, the bromides, *chloral, veratrum viride* and kindred drugs being used to sustain for a time the ischæmia of the nervous elements, thus enabling them gradually to resume their normal caliber. *Massage* (light) and *electricity* to the muscles are not only of material aid to the tissues excited, but also to central nerve-cells through reflex action.

Cerebral Thrombosis and Embolism.

Characterized by plugging of an artery or vein by (1) a blood-clot formed *in situ* (thrombosis) in the course of vascular disorders, weak heart, blood disorders, ligation of the carotid, etc., the middle-cerebral and basilar arteries being those most frequently affected; or (2) by a mass of valvular vegetation, a calcareous or atheromatous fragment, a fraction of embolus, etc., carried to the left middle-cerebral or vertebral branches of the carotid, by the blood-stream (embolism). Either condition may give rise to headache, delirium, stupor, convulsions, muscular rigidity and coma, especially in the cases that occur during the cachectic periods of cancer, phthisis, etc., complicated with symptoms of sepsis, in cases due to infectious fevers, aural abscesses, mastoiditis, etc.

Due to a great extent, in cases that occur during febrile and cachectic disorders especially, to a deficiency of alkaline salts and water in the blood. The relative proportion of fibrin-ferment (adrenoxidase) being excessive, clots are readily formed. Again, when the osmotic properties and fluidity of the blood are inadequate, its proteolytic activity and the protective activity of the phagocytes are correspondingly impaired and destruction of detritus, including particles of vegetations from the heart, atheromatous vessels, etc., fails to be accomplished and emboli are formed.

Treatment: The preventive measures are self-evident: the use of *saline solution* in the course of all febrile processes, including cachexias, as advocated in this work.

The treatment of the conditions themselves requires considerable circumspection. To administer the iodides, digitalis, strophanthus, quinine, etc., as advocated in text-books is dangerous practice, since it is likely to increase the chances of death by adding fibrin-ferment to the blood. If thrombosis or embolism occur during cachexias or infections *saline solution* subcutaneously in small doses frequently repeated, or if impracticable, per rectum. After a couple of weeks, if required at all, the *iodides* may be used in gradually increased doses to remove what detritus continues to provoke vascular obstruction, by increasing the proteolytic activity of the blood and of the phagocytes.

Cholangitis, Catarrhal (Acute Jaundice).

Characterized by jaundice of one to six weeks' duration, slight hepatic tenderness with increase of the dullness area, and pruritus; and, in severe cases, marked weakness, fever and gastro-duodenal disorders.

Due to *incomplete* obstruction of the duct through local irritation by poisons contained in the bile, viz., toxic wastes due to inhibited metabolism, as after emotions, exposure, cold, or retained owing to renal disease; the toxins of typhoid fever, pneumonia and other infectious diseases, imperfectly digested materials (acute indigestion), etc., and also to concurrent abnormal viscidity of the bile.

Treatment: In ordinary cases (independent of infections) a *milk and bread diet,* to reduce to a minimum the wastes formed, and *sodium chloride* in the milk ingested to increase the osmotic properties of the hepatic blood, with two quarts of some *alkaline mineral water,* preferably Vichy, daily. *Vegetables* should constitute the main food after a few days of milk diet, to supply the blood with alkaline salts. Drugs should be avoided.

Cholangitis, Obstructive.

Due to *incomplete* obstruction of the common duct by gall-stones, the pressure of a cancer, a stricture, external pressure, etc., and characterized by "intermittent hepatic fever," due to stimulation of the adrenal system by periodical accumulations of poisonous constituents of the bile in the blood, in which jaundice, chills, fever, sweating and sometimes pain, recur intermittently for weeks. When the obstruction is *complete,* there are: marked jaundice of the skin and sclerotic, clay-colored stools devoid of bile, yellowish-brown urine, a slow pulse, anorexia, foul breath, nausea, gastro-intestinal hæmorrhages, albuminuria, irritability, headache, fever, and in some cases delirium, convulsions and coma—all due to the toxæmia which, unless successfully antagonized by the overactivity of the adrenal system it engenders, is followed by excessive excitation of the vascular centers with the morbid phenomena (except fever) recited as result.

Treatment: That of the condition to which the obstruction is due, but supplemented by the use of *saline solution* and other measures indicated under the preceding heading.

Cholecystitis, Acute Infectious.

An inflammation of the gall-bladder caused by bacteria or their toxins—the typhoid, colon and pneumonia germs especially—and favored by the presence of gall-stones, inflammatory adhesions, etc. The organ is distended with mucus, muco-pus or pus, which conditions sometimes lead to perforation, hæmorrhage and gangrene, which may prove lethal. The symptoms, aside from local pain and tenderness and distension of the organ, are those of a general infection: chills, fever and sweats, and often vomiting and, infrequently, jaundice.

Treatment: Surgical intervention is often necessary to save life. *Morphine* to relieve pain, facilitates normal evacuation of the cystic contents by causing ischæmia and relaxations of its tissues, through the contraction of the arterioles it produces. *Coun-*