TREATISE ON ORGANOTHERAPY

AUTHOR

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Treatise on

ORGANOTHERAPY

AND

PLURIGLANDULAR THERAPY

By

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THE SCIENCE OF THE FUTURE

PHYSICIANS understand, though imperfectly, that all pathological conditions may be effectually resisted by the organism itself, which fights and defends itself energetically against its enemies. This organism we little understand in spite of all our microscopes, and the weapons with which it guards itself are not well defined or known, but they are nevertheless real and effective. Their action is evidenced, if we merely recall the innumerable spontaneous cures that are noted in tuberculosis.

In the human organism we discover the true panacea, for, as nature creates our enemies, it also creates the opposing substances in order that we may maintain our organic equilibrium.

Our scientific works on therapeutics will undergo a radical transformation. That of the old that is efficacious will remain, and the greater needs of the future will be met with the series of active glandular elements, or the true regulators of health, which modern science is beginning to know, although our knowledge is still amidst the greatest obscurity and confusion, but it is genuine.

INTRODUCTION

THE organs, tissues and secretions of animals were extensively employed as remedial agents in ancient times and many of them were official in the pharmacopeias of the last century. Organotherapy is undoubtedly the oldest form of therapeutics.

The use of glandular products, as remedies in pathological conditions, was recently revived by Brown-Séquard in 1889. According to the theory promulgated by them, all glands, in addition to their ordinary secretions, put forth certain materials of unknown chemical composition, which pass into the blood and perform their definite functions of some kind. We now know this to be a proven fact and further that these glands of internal secretion exert influence, heretofore unsuspected, over distant parts of the organism.

I call your attention to the effect of the entire removal of either the thyroid, parathyroid, pancreas or adrenal glands. The effect is at once to produce symptoms of characteristic and fatal disorders; but if a portion of either of these glands is left, or a portion of the gland engrafted, these toxic symptoms do not develop.

It is evident that these disorders, so produced, are of auto-toxic origin, the result of chemical

poison in the blood, that is either eliminated, destroyed or neutralized, when the gland or glands are intact, performing their proper functions.

It has been demonstrated that the giving of a properly prepared preparation of the dead gland or a combination of glands, whichever is required, will dispel the toxic phenomena, which fact goes to prove that the active principle is a chemical substance, existing in the gland itself, and is not due to the action of living cells, other than to produce these active agents (hormones). The transfusion of blood from a healthy to an unhealthy individual is only the supplying of a normal stream of blood charged, as it were, with its full quota of chemical substance (the correct amount of hormones). The results obtained, if done sufficiently early, are generally flattering, at least for a time, or until the normal amount of hormones begin to lessen, provided nature is not able to assist the patient to react and obtain his normal balance. This is one of the demonstrations in favor of the pluriglandular theory.

The initial dose of MANY animal extracts should be very small and increased as conditions may require. This is done to avoid the possible systemic disturbance that has been noted in some cases. However, the fact must not be lost sight of that the patient **must** receive sufficient dosage and it must be remembered that the giving of these

products should be over an extended period (for months) to obtain the best results.

With certain exceptions animal products are not toxic. The following preparations, however, must be used with care. Thyroid product must be started with a small dose and its reaction watched. The extract of prostate is highly toxic; therefore the initial dose must be small and the reaction carefully noted. The extracts of adrenal and pituitary glands require judicious dosage, as harm might be done by prescribing them in a haphazard manner and over a too prolonged period. Care must be taken in the giving of extracts of pancreas and liver in diabetic cases, as extract of pancreas should not be given in diabetes of hepatic origin and vice versa. The other glandular extracts can be given with comparative safety.

It has been proven that the endocrine glands control metabolism, nutrition, development and sympathetic functions. They work physiologically, they are our regulators. The common expression that a chain is no stronger than its weakest link has no more fitting analogy than that we are no stronger than our weakest endocrine gland secretion.

It will be noted from the brief survey of hormone-therapy that its uses are many and its application is logical. It is obvious that at the present time we are only on the fringe of the possibilities

of such treatment and that the near future will develop great results. However, it must be remembered that organic diseases are not amenable to organotherapy in the degree that functional disorders respond to the treatment, though much will be accomplished by the proper application of organotherapy.

In the therapeutic application of glandular extracts singly we have those products that are specific in action and produce a definite physiological effect.

First. Products that produce an effect which is not due to any change in the normal hormone production, as is noted in the action on the unstriped muscles, by the giving of an extract of the posterior lobe of the pituitary. Especially is this marked on the uterine muscles.

Second. Products that effect the normal hormone production. The extract of a gland, when given internally, tends to augment the action of the same gland and possibly will restore the gland, partially, or in whole, to normal health, as the giving of ovarian extracts in ovarian troubles and thyroid extract in hypothyroidism.

Third. Products used without a definite specific or scientific basis in which the beneficial results have been noted, as the giving of parathyroid in paralysis agitans and pituitary in functional ovarian troubles.

Fourth. Products that supply the required hormones of those glands that have been removed, destroyed or do not function, as the supplying of thyroid in cases of myxedema. As the time passes and a more extensive clinical knowledge is obtained of the endocrine glands, their use will become one of a more specific application to pathological conditions.

Fifth. The pluriglandular therapy has proven itself to be worthy of our profound thought and investigation, as it will prove one of our greatest weapons in combating pathological conditions. There never was a uniglandular endocrine disorder that could exist for any length of time singly, as, at once, it will involve other endocrine glands, therefore becoming pluriglandular, and the best possible manner to meet these pathological conditions is to employ a pluriglandular product that is therapeutically and synergistically indicated to meet the conditions.

The use of drugs should be employed in connection with organotherapy, or vice versa. The proper body and mental conditions of the patient must be looked after, as well as the hygiene and dietetics.

With these introductory remarks, we will pass on to the discussion of the endocrine glands and from there to the pluriglandular therapeutics.

Treatise on Organotherapy

ADRENAL GLANDS

Source and Parts Used. The adrenal or suprarenal glands of various animals are used, chiefly those of cattle and sheep. There are three preparations, namely, the whole gland, the central or medulla and the peripheral or cortex. One part of the adrenal powder represents about six parts of the fresh gland. There is a synthetic preparation made that is identical or closely allied chemically.

Anatomy and Physiology. The suprarenal glands, each weighing from sixty to one hundred and twenty grains, are two flattened bodies more or less globular in shape, of a yellowish color, situated behind the peritoneum and in front of the upper part of each kidney. The adrenal glands, through their hormones, supply the tonicity of the involuntary muscles. Upon adrenal action on the cardiac and circulatory system, blood pressure greatly depends. Adrenal insufficiency is not an uncommon condition and has been shown to be stimulated by emotional strains (as worry, pain or fear). Infectious or toxic diseases are conditions of acute adrenal depletion. This same condition,

no doubt, exists in long standing infections, as tuberculosis and malnutrition. The active principle secreted is adrenalin.

Central Portion or Medulla is formed of stout connective tissue, with highly vascular cells, embodied in a venous plexus, and is very closely allied to the nervous system. In reality, it is said to be a part of it.

Cortex or Peripheral has quite a different histological structure and physiological action is quite different than the medullary part of these glands, as the apparent action of this part of the gland is to neutralize poison liberated during muscular energy. The adrenal glands control development of the gonads.

Therapeutic Indication—Total Gland. Muscular fatigue, atony and run down conditions, cardiac and circulatory insufficiency, cold extremities, malnutrition, asthenia, tuberculosis, cachexia, Addison's disease, toxic conditions, bronchial asthma, cholera, collapse, shock and vomiting of pregnancy.

Principal Indications Adrenal Total. Muscular atony, low vitality, fatigue, cardiac insufficiency, bronchial asthma, vomiting of pregnancy and hypotension. The giving of this product requires great care and is not suitable for prolonged administration. NOT to be GIVEN in high blood pressure or arterio-sclerosis.

Therapeutic Indication—Central Portion or

Medulla. Is limited to local use and used in the usual chloride solution of 1 to 1,000, as in local congestions and hemorrhages, conjunctivitis, coryza, hay fever, hemorrhage from nose, iritis, keratitis, laryngitis, rhinitis or in cases where a vaso-constrictor is required. Internally of benefit in bronchial asthma, shock, heart failure, or in cases where vasomotor equilibrium is to be controlled.

Principal Indications Adrenal Medulla. Generally limited to local use in surgery, as a vaso-constrictor. Also used locally in coryza, nose bleed, hay fever, and local congestions. Used internally in asthma, bronchial spasms and severe infectious diseases.

Therapeutic Indication Cortex. This product is not often used alone, but has been given to hasten osseous development and union of fractures. May be used in conditions due to defective ovarian or testicular development.

Principal Indications Adrenal Cortex. Defective development of gonads. Assists absorption and retention of lime; therefore helpful in growth of osseous tissue and union of fractures. Has antitoxic properties.

Counter-indicated. Diabetes Mellitus, vascular diseases with hypertension, aneurysm, high blood pressure, pulmonary hemorrhage.

Synergistics. Animal extracts that exert muscular tone and increase blood pressure. The

suprarenal capsule, total gland, is frequently combined with ovary, testicle, thyroid and pituitary.

Dose. Adrenal total gland, one-half to two grains. Tablets of one-half grain. Adrenal medulla is given according to the acute or chronic conditions from one-tenth to two grains and larger doses. The 1 to 1,000 chloride solution, two to ten minims. Tablets of 1/10 grain. Adrenal cortex, two to five grains. Tablets of two grains. These preparations are to be given three to four times daily.

APPENDIX

Source and Parts Used. The mucous membrane of the appendix of hogs is the part used. This part is desiccated and powdered. One part of the powdered substance represents about twelve parts of the fresh membrane.

Anatomy and Physiology. The appendix, which varies from 4 to 6 inches in length, is attached to the cecum and is rudimentary in human beings. It is said that this organ produces a substance which stimulates peristalsis.

Therapeutic Indication. Digestive disorders, intestinal stasis, constipation.

Dose. Has been used experimentally and is not yet well established.

BLOOD

Source and Parts Used. Hemoglobin, which represents the largest portion of the colored corpuscles, is obtained from the red blood cells of cattle, is desiccated and put into powder form.

Normal Serum. This product is obtained from the healthy horse and can be obtained in ampules or syringes for immediate use.

Antithyroid Serum. This serum is taken from the horse five or six weeks after the thyroid gland has been removed. This product is rarely used.

Leucocyte Extract. This product is obtained by the injection of irritating substances into the pleural cavity of the horse or of other animals. The exudate is aspirated, the cellular element is separated, incubated and is available in ampules.

Anatomy and Physiology. The blood is the fluid medium through which all tissues of the body are directly or indirectly nourished and represents about one-twelfth to one-fourteenth of the weight of the body. It has slightly alkaline reaction. The fluid part of the blood is called plasma, a colorless fluid, and suspended therein are the white and red corpuscles.

Hemoglobin. This product represents organic iron and about 90 per cent of the red blood corpuscles. The red blood corpuscles are the oxygen-carrying element of the blood.

Normal Serum. The serum contains formations of other products that are required to maintain the normal health balance. Normal serum is given in cases of infection and hemorrhagic diseases.

Antithyroid Serum. It is presumed that by the removal of the thyroid the blood becomes charged with elements normally held in check by the secretions of the thyroid. Therefore the antithyroid serum is thought to neutralize the toxic product of thyroid activity.

Leucocyte Extract. This product produces a decided artificial immunity in infectious diseases and relieves overworked leucocytes, thereby protecting the higher cells, so that their function is not deranged by excessive toxic conditions.

Therapeutic Indication. Hemoglobin (organic iron) is indicated in anemia, chlorosis, malnutrition, pernicious anemia and in cases where a general systemic tonic is required.

Synergistics. Thyroid extract in anemia showing hypothyroidism. This product may also be given in combination with spleen extract.

Dose. Two to five grains, three times per day, at meals. Tablets of two grains.

Normal Serum. Hemorrhages due to defective clotting and used as immune serum in septic conditions, as found in pneumonia, typhoid fever and kindred conditions.

Administration and Dose. May be applied locally or injected by methods provided.

Antithyroid Serum. Indicated in excessive secretion of the thyroid gland, Grave's disease.

Synergistics. Desiccated pancreas, adrenal, pituitary.

Dose. Five grains of powder, two to three times per day, given over an extended period of time.

Leucocyte Extract. Severe infections, septicemia, pyemia, cerebro-spinal meningitis.

Synergistics. Nuclein and hemoglobin may be given with this product, where there is marked anemia, in cases of prolonged systemic infection. This product is given hypodermically.

BONE

Source and Parts Used. The long bone of various animals, from which the organic matter has been extracted, desiccated and put in powdered form, is used.

Anatomy and Physiology. The mineral salts obtained from bone are said to be easily assimilated and produce influence on nutrition and mineral metabolism.

Therapeutic Indication. Indicated in those cases in which there is lack of mineral salts, as in malnu-

trition, rickets, tuberculosis, and other forms of metabolic dyscrasia. Indicated mineral salts can be used with as much benefit as that of bone.

Dose. Five to ten grains or more, with meals. Tablets of five grains.

BONE MEDULLA

Source and Parts Used. The medullary part of the long bones of young animals is the part used. Available in powder.

Anatomy and Physiology. The extract of bone marrow is stimulating and increases both the white and red blood corpuscles.

Therapeutic Indication. This product is indicated in anemia, pernicious anemia, malnutrition, chlorosis, tuberculosis, albuminuria and in cases where there is a necessity for an increase in the production of the red and white corpuscles.

Synergistics. Hemoglobin, spleen substance, also indicated with restorative drug medications.

Dose. Five to ten grains of extract four times per day after meals. Tablets of five grains.

BRAIN AND SPINAL CORD

Source and Parts Used. The brain, cord and nervous tissue from the sheep are the parts used.

With the fat removed, one part of the desiccated substance represents about five of the fresh gland.

Anatomy and Physiology. There are two divisions of the nervous system, the cerebro-spinal and the sympathetic. The former is composed of the brain, spinal cord, cranial and spinal nerves. The latter consists of a series of ganglia with intervening bands, forming two cords, one on either side of the spinal column. There are three plexuses, one in the thorax, one in the abdomen and one in the pelvis. There are also many small ganglia connected with the sympathetic system, supplying the viscera, vessels and all other parts of the body. Nerve fibres of communication unite the sympathetic and cerebro-spinal nerves. Nervous tissue is divided into two classes, white and gray.

Therapeutic Indication. The brain and nerve substance contains four elements, chief among which are lecithin and cholesterin, as well as other stimulating properties that act upon nutrition of the nervous system. There is an emulsion made from the white substance of the brain of cattle (Thromboplastin), that is used locally as a hemostatic in hemorrhages from the nose, throat or after removal of tonsils or adenoids, gastric ulcers, hemorrhages from hemorrhoids and other local hemorrhages. Lecithin is rich in assimilable form of organic phosphorus and is therefore a preparation of reconstructive merit and is useful as a

cerebro-spinal tonic in depraved conditions. It is indicated in neurasthenia, debility, malnutrition and in cases where phosphorus is indicated, mental and nervous disorders, functional impotence, premature senility, hysteria and epilepsy.

Principal Indications. Loss of nerve energy, malnutrition, mental and nervous disorders, functional impotence, premature senility, neurasthenia, locomotor ataxia, chlorosis and profound anemia.

Counter-indicated. Hemorrhage arterial.

Synergistics. Hemoglobin, adrenal, spermin and nuclein.

Dose. The desiccated powder, one to three grains, three to four times per day. Lecithin contains 5 per cent of organic phosphorus and is given in doses of from one-half to three grains, three times per day. This is one of the most useful forms of assimilable phosphorus. Tablets of brain and spinal cord, one grain.

CAROTID GLAND

The carotid gland has been considered part of the nervous system, vascular, and now a portion of the adrenal system. All do not agree that this gland has an internal secretion. From experiments with this gland conclusions are formed for and against. Further investigation is necessary to de-

termine the merits of this gland for use in organotherapy.

DUODENUM—(Secretin)

Source and Parts Used. About eighteen or twenty inches of the upper portion of the mucous membrane of the small intestine of pigs is part used. Secretin is extracted by means of hydrochloric acid from the scrapings of this portion of the small intestine. One part of the desiccated extract represents about twelve parts of the fresh scrapings.

Anatomy and Physiology. This part of the small intestine begins at the pyloric end of the stomach and is about twelve inches long. About two or two and one-half inches from the pyloric end of the stomach open the pancreatic and hepatic ducts. The duodenum is composed of the same coats as the stomach. The mucous membrane consists of a series of folds and is covered with columnar epithelium, containing the villi of the intestines and glands. Secretin is described as the alimentary hormone and has a stimulative effect upon the alimentary glands, increasing the action of the digestive fluids and their enzymes. It has a decided influence upon peristalsis and stimulates flow of bile.

Therapeutic Indications. Secretin is indicated

in intestinal indigestion, where either the pancreas or liver, or both, are at fault, clay colored stools. It is indicated in cases where food undergoes putrefaction in the intestinal tract, autotoxemia, hepatic cirrhosis, jaundice, diarrhea of children and constipation. This product has also been recommended in diabetes, but only for its effect on digestion. It should be a very useful product in acute and chronic conditions, where digestion and nutrition might be involved. Secretin may be called the key which unlocks the alimentary glands.

Counter-indicated. Ulcer of the small intestine and inflammation of the pancreas and liver.

Synergistics. Pancreatin, papain and other products influencing digestion.

Dose. Secretin, two to four grains given while or after eating. Duodenum extract tablets of two grains.

KIDNEYS—(Nephritin)

Source and Parts Used. Glomerular substance of the kidneys of hogs, sheep and cattle is used. One part of the dried powder equals about eight parts of the fresh gland (Nephritin).

Anatomy and Physiology. The kidneys, two in number, are situated on either side of the vertebral column. They reach from the twelfth dorsal to the third lumbar vertebra, the right kidney being

a little lower than the left. Each weighs from four to six ounces. The kidneys, consisting of the cortical substance, the medullary and the pelvis, are enveloped in a strong capsule. They exert a specific and neutralizing effect in toxemia and have an influence upon irritating substances of the blood that effect the secreting part of the kidneys. They are also diuretic.

Therapeutic Indication. Extract of the kidneys is indicated in renal insufficiency, uremia, albuminuria (Bright's disease) and in cases of ascites and dropsy that are caused by renal insufficiency and lack of nitrogenous metabolism. This product, in combination with remedial agents, where dropsy or ascites may be due to heart or liver lesion, will be found of much service. It has also been known to increase elimination of urea.

Synergistics. Desiccated liver and pancreas substance. This product is also used with other animal extracts.

Dose. Nephritin, three grains of desiccated kidney substance, three times per day after meals. To be increased as conditions demand. Tablets of three grains.

LIVER AND BILE

Source and Parts Used. The parenchyma of the liver of cattle and hogs is used. One part of

the desiccated liver substance represents about six parts of the fresh gland.

Anatomy and Physiology. The liver, the largest gland in the body, weighing about four pounds, occupies the right hypochondrium region. It is composed of lobules from one-tenth to one-twentieth of an inch in diameter, bound together by loose areolar tissue. Each lobule consists of nucleated hepatic cells, which form the secreting part of the liver. The amount of bile secreted by the hepatic cells is influenced by the amount of its blood supply. The secretion is increased during digestion and retarded between meals. During digestion the bile is secreted and carried by the main hepatic duct directly into the duodenum and after digestion is completed, the bile regurgitates from the common bile duct, through the cystic duct, into the gall bladder, where it accumulates for the next digestive period. The hepatic cells are concerned in the regulation of the sugar contents of the blood.

Therapeutic Indication. Desiccated liver substance has been used with success in the treatment of functional hepatic disorders, as well as conditions of an organic nature, as atrophy, cirrhosis and alcoholic derangement.

It is also used in the treatment of diabetes that is attributed to disturbance of the liver function. This form of diabetes is not as prevalent as pancreatic diabetes. Desiccated liver substance given

in diabetes of a pancreatic origin aggravates the difficulty. Liver substance has been found of value in the treatment of rheumatism and gout and is also known as an anti-hemorrhagic.

Counter-indicated. Pancreatic diabetes.

Synergistics. Spleen substance, bile salts and possibly thyroid extract.

Dose. Five to fifteen grains, three to four times per day. Increased as desired. Tablets of five grains.

Therapeutic Indication—Bile. Bile is the most efficient cholagogue. In intestinal digestion it assists in emulsifying the fats of the food and renders it capable of lacteal absorption. It lubricates the mucous membrane of the intestinal tract, is an antiseptic, prevents the decomposition of food through the intestines and acts as a natural purgative by stimulating the muscular and mucous coats of the intestinal tract. Bile salts are indicated in hepatic insufficiency, indigestion, constipation and formation of gas in the intestinal tract, due to biliary insufficiency, and in cases where there is a lack of digestion of the fats, as found in children. Dehydrated bile represents about forty parts of the fresh fluid.

Counter-indicated. Obstructive jaundice and pancreatic diabetes.

Synergistics. Hepatic substance. Also pancreatin is very often used with this product.

Dose. Two to five grains of the desiccated product, to be increased as indicated. Tablets of two grains.

LUNGS

Source and Parts Used. Lung tissues from animals, preferably lambs, is used. Is desiccated and powdered.

Anatomy and Physiology. The lungs are the two organs of respiration, occupying the major portion of the thoracic cavity, weighing, the right twenty-two ounces and the left twenty ounces. The right has three lobes and the left two. They are of a spongy, elastic texture. The pulmonary parenchyma is formed of lobules composed of a terminal bronchial tube, air cells, blood vessels, nerves and lymphatics, with a small amount of areolar tissue. The small air cells measure one-hundredth of an inch in diameter.

Therapeutic Indication. The active principle of the lung extract exerts a tonic action upon the respiratory tract, especially on the mucous membrane of the bronchi and pulmonary alveoli. Lung extract has been recommended in chronic diseases of the lung and pleura, especially those of a purulent character, and has been used with benefit in cases of chronic bronchitis, diseases of the pulmonary tissue, purulent pleurisy, pulmonary tuber-

culosis, pulmonary abscess and emphysema, and is said to be of benefit in cases of pulmonary hemorrhages.

Dose. Five to twenty grains, four to five times daily for an extended period. Tablets of five grains.

LYMPHATIC GLANDS

Source and Parts Used. Lymphatics of cattle are parts used. One part of the desiccated substance represents about five parts of the fresh gland. This product is very hygroscopic.

Anatomy and Physiology. The lymphatics are transparent vessels, having the same three coats as the arteries and veins and are to be found everywhere in the body with the exception of the nails, cuticle, hair and cartilage. They are supplied with numerous valves, which give them a beadlike appearance. Lymphatics of the mesentery and small intestine carry the chyle during digestion and the lymph at other times. The lymphatic glands are small, solid, round or oval bodies situated along the absorbent vessels. The glands break up into several afferent vessels and form plexuses within and emerge efferent vessels, which soon unite in a single trunk. The lymphoid tissue is filled with lymph-cells. These glands are to be found in the mesentery and along great vessels in the axilla, neck and

groins through which the lymph passes in its course, before being discharged into the blood vessels. It might be said that they act as filters. Materials of food not taken directly into the blood vessels of the alimentary canal are received by the lymphatic absorbents, taken and emptied into the lymphatic duct. The lymphatic duct is about eighteen inches long and empties into the junction of the left internal jugular and subclavian veins, where the lymph and chyle are carried and injected into the circulation. The right lymphatic duct is very small and empties into the junction of the right internal jugular and subclavian veins.

Therapeutic Indication. This product has been found of benefit in cases of poorly nourished children, enlarged glands, adenoids and cases that are subject to hemorrhages. Also recommended for individuals where reconstructive treatment is required and might be found of benefit in tubercular conditions.

Synergistics. Thyroid, spleen, spermin and orchic substance, calcium salts and drug medication as indicated.

Dose. One-half to one grain of desiccated glandular substance, three times per day, to be increased as required. Tablets of one-half grain.

MAMMARY GLANDS

Source and Parts Used. The parenchymatous portion of the mammary gland of udders of goats, ewes and cows is part used. One part of desiccated gland represents about four to five parts of fresh parenchyma.

Anatomy and Physiology. The mammary gland, which varies in size and weight, is composed of lobes, which are subdivided into lobules, bound together with connective tissues. The lobules form a number of rounded vesicles in groups into which their ducts open and by their union form about fifteen or twenty excretory ducts. Internal secretion of the mammary gland antagonizes that of corpus luteum, and as a result inhibits activity of the ovaries. The active principle stimulates the mammary activity and development. It reduces congestion of the uterus and favors uterine involution after childbirth.

Therapeutic Indication. Found of benefit in uterine hemorrhages due to cancer, fibroids, menorrhagia and metrorrhagia, metritis and endometritis. This product is said to be of benefit also in deficient lactation and given with the view of overcoming complications of the menopause.

Counter-indicated. Where there is deficient ovarian activity and amenorrhea.

Synergistics. Total pituitary, placental extract

and products which exert similar galactogenic action. Possibly thymus extract could be used with benefit. Mammary extract has been known to produce slight gastric irritability. In this case it should be discontinued for the time being.

Dose. Two to ten grains, two to three times per day, after meals. Tablets of two grains.

MELANINE

There exists a coloring matter known as melanine, that is found in all colored tissues of the body, and also forms the principal coloring matter of the hair. Melanine appears to contain most of the iron derived from destructive assimilation of the blood globules. When this product is isolated, it is found to be of a dark blackish-brown color and may produce all the varying grades of hue to nearly absolute black. This product is deposited in the substance of the cells in the form of minute granules. Further research may develop something along these lines.

OVARIES

Source and Parts Used. The whole ovary from cows and sows is used. One part of the ovary,

desiccated (powdered), represents about six and one-half of the fresh ovary. The corpus luteum for a time practically supplanted the extract of the ovary. One part of the desiccated corpus luteum represented about five parts of the fresh gland.

Anatomy and Physiology. The ovaries, which weigh from sixty to one hundred and twenty grains, are two flattened oval bodies situated in the cavity of the pelvis, one on each side, and are adherent to the posterior surface of the broad ligament by their anterior border. They are composed of fibrous stroma and connective tissue in which are embedded Graafian follicles. The corpus luteum, an irregular spot in the ovary, is the site of a ruptured Graafian follicle. Both the ovaries and the corpus luteum produce very active internal hormones or secretions which, no doubt, have to do with the control of menstruation and pregnancy. They regulate both metabolism and oxidation processes of the body and their administration stimulates the secretory activity of the ovaries.

Therapeutic Indication. The removal of the ovaries will arrest development, but the transplanting of the ovarian tissue, under the skin, at once remedies these defects, showing that the hormone is chemical and not reflex in its action. If the ovaries are destroyed by disease or otherwise, administration of the ovarian extract overcomes the nervous mental and circulatory disturbances, with

which every physician is familiar. Ovarian extract will be found of much therapeutic efficiency when administered in functional and organic ovarian disturbances, such as amenorrhea, dysmenorrhea, neurosis and reflex conditions, as dizziness, insomnia, palpitation, intermittent pulse and mental conditions associated with these troubles. The relation between the ovarian secretion and osteomalacia has been subject to much speculation, but it is likely that the ovaries more than any other endocrine gland, as the thyroid and thymus, are the most concerned in the production of the disease. The mental disturbance at the climacteric is relieved by ovarian extract.

Counter-indicated. Pregnancy, cases of hypersecretion of the ovary, extreme pelvic congestion.

Synergistics. Thyroid extract can be given with ovarian extract, but not where there is hyperthyroidism. Total pituitary gland is used.

Dose. Two to four grains, three times per day, between meals, to be increased as indicated. This treatment should be given over an extended period in order to obtain necessary results. Tablets of two grains.

Corpus Luteum. The therapeutic possibilities of ovarian extract are numerous. There exists an intimate relation between the thyroid and pituitary glands and the ovaries. Ovarian extract is frequently indicated in disorders of the pituitary, more

especially when the symptoms point to excessive osseous growth in imperfect development. Nearly all these patients are inclined to take on flesh, whether the deficiency arises in the pituitary, thyroid or ovaries. If there be thyroid insufficiency, the patient will have a harsh and rough skin and the blood pressure will usually be normal (125 mm. Hg.) or a little above. If there be pituitary insufficiency, the skin will be soft and smooth and the blood pressure will be considerably below normal.

The secretions of the ovaries are not confined entirely to the corpus luteum. We do know, however, that corpus luteum is intimately associated with nutrition, menstruation, ovulation and lactation. The female, during the child-bearing period, under normal health, is constantly absorbing corpus luteum and, as soon as the corpus luteum of one menstrual period has been absorbed, another appears to take its place during the next period. During the first ten to twelve weeks of pregnancy corpus luteum ceases to be absorbed, though it increases much in size and from this time on is gradually taken up by the body. If you note, the nausea of pregnancy begins during this period and disappears as absorption begins to take place. It is evident that the nausea of pregnancy may depend much upon this condition.

Corpus luteum extract has remedial action only in the female and acts more efficiently during the

child-bearing period or during this period of absorption. The giving of corpus luteum causes a retention of nitrogen, a tendency toward the obese and a development of the mammary glands. Corpus luteum is also a marked vasodilator. The giving of an extract of the ovary, where all the Graafian follicles have been removed, has quite an opposite therapeutic action to that of corpus luteum. Corpora Lutea are not found in the fetus, girls before puberty or women who have ceased to menstruate. It is therefore evident that corpus luteum is a true puberty body.

The chemical or active principle of corpus luteum has not been determined.

Counterindicated. Low blood pressure and frequent menstruation.

Synergistics. Thyroid and pituitary.

Therapeutic Indication. Functional amenorrhea of girls and young women, dysmenorrhea, abrupt menopause, neurasthenia associated with menstrual disorders and irregular menstruation accompanied with overweight. For relief of persistent headaches at cyclic periods, this is to be given several days before the menstruation.

Dose. One-half to three grains four times a day.

PANCREAS

Source and Parts Used. The pancreatic gland is obtained from cattle and hogs. The desiccated acinus portion is used. One part of the desiccated gland represents about five parts of the fresh. This preparation is hygroscopic.

Anatomy and Physiology. The pancreas, a compound racemose gland, is pyramidal in shape, about six inches long, one-half inch wide and one inch thick and weighs from two to four ounces. It lies behind the stomach and in front of the first lumbar vertebra. Its chief function is facilitating the metabolism of carbohydrates. At the splenic or tail end of the gland are found from 80 to 90 per cent of the islands of Langerhan. Pancreatin, a combination of enzymes and well known digestive ferments, acts only in an alkaline medium. The pancreas produces three well known digestive ferments, trypsin, steapsin and amylopsin. These ferments take part in the digestion of proteids, fats and carbohydrates. Pancreatic digestion takes place in the small intestines. It is quite well established that the internal secretion of the pancreas facilitates the burning of the sugar in the muscles and reduces blood pressure. The removal of the whole pancreas is followed in a short time by fatal diabetes, whereas if pancreatic substance is grafted into the animal, glycosuria is prevented. The dia-

betic possesses little phagocytic resistance, is subject to infection and is a bad subject for operation. He has also little power of resisting tubercle bacillus.

Therapeutic Indication. The use of pancreatin in intestinal indigestion and for peptonizing milk has been well established. One of the principal uses of the pancreas substance is to antagonize hyperfunction of the adrenal gland in high blood pressure and is of benefit in infection of the adrenal gland by bacterial and other toxic conditions. It is also indicated in pancreatic diseases, where there is a lack of the functioning of the gland. Owing to its sedative action, it would perhaps be found of benefit in Grave's disease. Trypsin has been used as a diphtheritic solvent. Pancreas may be found of benefit in **diabetes mellitus** of **pancreatic origin.** It is useful in lowered vitality to prevent infections and is recommended in tuberculosis. The dropping of a solution of adrenalin in the eye of an animal from which the pancreas has been removed causes dilatation of the pupil, which action does not occur in a normal animal. This test is used at times to diagnose pancreatic diabetes from liver diabetes.

Counter-indicated. In diabetes of hepatic origin.

Synergistics. Digestive ferments, papain, small doses of thyroid in hypertension, adrenal substance and posterior pituitary.

Dose. Two to eight grains, three to four times per day. Tablets of two grains.

PARATHYROID GLANDS

Source and Parts Used. The parathyroid glands are obtained from cattle and horses. The glands are desiccated and powdered. One part of the powdered substance represents six parts of the fresh gland.

Anatomy and Physiology. These glands are situated in the throat and are four in number, two pairs, situated in close proximity to the lateral lobes of the thyroid gland. The structure bears some resemblance to the thyroid gland. The glands are formed of columns of granular epithelium cells and show very vascular connective tissue between them. Upon the removal of the thyroid gland, these glands undergo marked hypertrophy. Parathyroid glands control the destruction of toxic substance and are intimately concerned in the maintaining of calcium metabolism, therefore having a special effect on the nervous system. The total removal of these glands is followed by tetany and a serious loss of calcium salts, rapidly causing death.

Therapeutic Indication. With the loss of parathyroid secretion there is a marked nervous irritability, bordering on tetany. Therefore the administration of this product in nervous, irritable conditions is received with favor. This product has also proven of benefit in the controlling of con-

vulsions, paralysis agitans and has been found of benefit in the treatment of chorea, epileptic convulsions and exophthalmic goiter.

Synergistics. Bile salts, testicular, ovary and hepatic substance. Also to be considered are the brain, spinal cord and calcium salts.

Dose. 1/20 to 1/10 grain two to three times a day between meals. Tablets of 1/20 grain.

PINEAL GLAND

Source and Parts Used. The pineal body is obtained from young cattle. The total gland is used. This gland is exceedingly small, requiring approximately five thousand to make one pound of the extract. The gland is desiccated and triturated.

Anatomy and Physiology. The pineal gland is a small, reddish body situated beneath and back of the corpus callosum and rests on the corpora quadrigemina. The central substance consists of white and gray matter. The blood vessels are small and form a delicate capillary plexus. The function of this gland has not been well established and is really in the experimental stage. The gland is known, however, to have a definite physiological action in youth. Disordered function in this gland produces a marked change in metabolism and maturity.

Therapeutic Indication. This gland has been used clinically in the treatment of mentally deficient children and in cases where there is evidence of defective mentality. In early life this gland seems to have an influence over nutrition and development of the genital organs. It seems, also, to have some effect on the development of the nervous system. Extract of this gland may act favorably in chronic functional brain diseases, lack of cerebral nutrition, chronic softening, mania and dementia.

Counter-indicated. This product is apparently non-toxic and seems to be of little use when given to children over twelve years of age.

Dose. 1/10 grain, three times a day, between meals. To be persisted in for some five or six months. Tablets of 1/10 grain.

PITUITARY BODY

Source and Parts Used. This gland is obtained from cattle. The parts used are the whole gland, posterior lobe and anterior lobe. One part of the whole gland and the posterior lobe each represents about four and one-half parts of the fresh substance. One part of the anterior represents about five parts of the fresh gland.

Anatomy and Physiology. The pituitary body, consisting of two lobes and weighing from five to

ten grains, is a small, reddish-gray body, occupying the stella turcica of the sphenoid bone. The smaller or posterior lobe consists of nervous tissue, and the anterior lobe, the larger of the two, resembles the structure of the thyroid. The vesicles are enclosed by a connective tissue rich in capillaries. These two distinct parts apparently have separate actions, as the posterior lobe can be removed without much effect, while the opposite is true of the anterior. The posterior lobe contains an extremely active substance, which stimulates the un-striped muscular fibers. This is very marked on the pregnant uterus. It also stimulates mammary activity and renal secretion and favors carbohydrate metabolism.

Therapeutic Indication—Posterior Lobe. This product is given to hasten labor after the second stage has commenced. The using of this product in these cases should be done with great care, as much damage might result, if precaution is not taken. Owing to its action on the heart muscle, it might be useful in shock, cardiac weakness and heart failure. It also increases blood pressure, when given for some time. It is a marked diuretic and has been used in uremia and dropsy, although great care should be exercised in giving this product in uremia. Owing to the action of this product on the intestinal tract, it is found useful in meteorism, especially following laparotomy. It is useful

in acute intestinal stoppage and is also important in hyperthyroidism, where it is necessary to support the heart. This product is useful in uterine involution and controlling hemorrhages. It has been used with success in threatened mammary abscess and in bronchial asthma when used in conjunction with adrenalin. Enuresis of children has been benefited by this product.

Principal Indications Pituitary Posterior. General stimulant upon the un-striped muscular fibres, especially marked on the pregnant uterus and is USED with CARE in the second stage of labor.

Counter-indicated. This product should never be given in early stage of labor, as its action might cause rupture of the uterus. Neither should it be used in hypertension or in severe acute nephritis.

Synergistics. Adrenalin.

Dose. One-quarter to one grain, three to four times per day. Tablets of one-quarter grain.

PITUITARY BODY ANTERIOR LOBE

Therapeutic Indication. Delayed mental development in children, amenorrhea of girls and young women, asexual individuals, infantilism and bronchial asthma.

Principal Indications Pituitary Anterior. Infantilism, delayed mental development in children, amenorrhea, especially in the obese.

Synergistics. Thyroid gonads.

Dose. One to four grains, three to four times per day, between meals. Tablets of one grain.

PITUITARY BODY WHOLE GLAND

Therapeutic Indication. To control definite symptoms of pituitary diseases, neuralgic pain, lethargy and infantilism. It is said to be of some benefit in Addison's disease. It is used, combined with adrenalin, in cases having low blood pressure, as found in tuberculosis, malnutrition and typhoid fever. It is of benefit in relieving tachycardia. This product also stimulates digestion and alimentary peristalsis and is of service in so-called "general rundown condition." This product is said to be of benefit in the treatment of cancerous conditions.

Principal Indications Pituitary Whole. Lack of systemic tone, atony, gastrointestinal atony, low blood pressure, malnutrition and hypopituitarism. Is a stimulant to heart and blood vessels where they lack power and stimulant to the un-striped muscular fibers.

Synergistics. Thyroid, gonads, thymus.

Dose. One-half to one grain, between meals and at bedtime. Tablets of one-half grain.

PLACENTAL SUBSTANCE

Source and Parts Used. The placenta of sheep and cows is that chiefly used. One part of the desiccated parenchyma of the placenta represents about six parts of the fresh gland.

Anatomy and Physiology. The mucous membrane of the uterus, in the region where the placenta is attached, becomes hollowed out by sinuses, which connect on the one hand with arteries and on the other with the veins of the uterus. There is no direct communication between the blood vessels of the mother and that of the fetus, but layers of membrane intervene between, making a free interchange of matter between them by diffusion and osmosis. The normal placenta weighs approximately four pounds. It has been quite well established that the placenta has an internal hormone secretion that favors lactation, uterine involution and re-establishes normal conditions after childbirth.

Therapeutic Indication. Extract of the parenchyma of the placenta is used to cause an increase in the production of milk. This product has given satisfaction in the treatment of fibroma and carcinoma of uterus, menorrhagia, dysmenorrhea, enlarged and sensitive uterus. It is recommended to prevent atrophy of the generative organs after ovariotomy, chronic metritis and infections after labor.

Synergistics. Mammary gland, pituitary total.

Dose. Three to nine grains, four times per day, between meals. Tablets of three grains.

PROSTATE GLAND

Source and Parts Used. These glands are obtained from cattle and horses. One part of the desiccated gland represents about six parts of the parenchyma of the prostate gland.

Anatomy and Physiology. The prostatic gland, weighing between four and five drams, is situated at the neck of the urinary bladder and encloses the commencement of the urethra. It is somewhat the shape of a chestnut and is about one and one-half inches wide, one and one-quarter inches long and one-half inch thick. It is composed of compound tubular glands, embedded in muscular and connective tissue.

Therapeutic Indication. This extract has been used in prostatic hypertrophy, prostatorrhea, retention of urine and neurasthenia of prostatic origin. It has been used in the treatment of specific and non-specific infection. The extract of the prostate gland is not in general use.

Synergistics. Used in combination with testicular extracts, lymphatic glands and thyroid.

Dose. Three to six grains, three times a day,

between meals. Increased as desired. Tablets of three grains.

SALIVARY GLANDS

Source and Parts Used. These glands are obtained from cattle. One part of the desiccated gland represents about fifteen to twenty per cent of the fresh gland.

Anatomy and Physiology. There are three pairs of glands, namely, the parotid, submaxillary and sublingual. These glands are compound tubular and made up of lobules with ducts that empty into the main duct of the gland. The lobules are connected by connective tissue. They secrete a mucus of alkaline reaction and convert starchy materials into sugar. These glands evidently are glands of internal secretion, as evidenced from the effect displayed in cases of orchitis, ovaritis and pancreatitis following mumps.

Therapeutic Indication. Parotid extract has been used in the treatment of mumps and pelvic disorders of women, as dysmenorrhea, ovaritis and ovarian neuralgia, enlarged and tender ovaries, chronic endometritis and subinvolution. It has also been used successfully in irregular and painful menstruation. These products are very little used, as there are others that are more efficient in their action.

Synergistics. Parotid, ovary and mammary substance.

Dose. Two to eight grains, four times a day, between meals. Tablets of two grains.

SPLEEN

Source and Parts Used. The spleen is obtained from calves, pigs and sheep. The total extract of the parenchyma of the spleen is part used. One part of the desiccated gland represents about five parts of the fresh gland.

Anatomy and Physiology. The spleen, the largest of the so-called vascular glands, weighs approximately eight ounces and has no excretory duct. It is of a deep reddish brown color and varies in shape and also in size, becoming smaller in old age. It is situated to the left of the stomach and below the diaphragm. The vessels enter and leave the gland at the hilus. This organ seems to be concerned in the manufacture of the blood corpuscles and is said to act as a filter for the removal, from the blood stream, of deteriorated white and red corpuscles. It is quite possible that the spleen has an influence upon digestion. One feature of the chemical composition of the spleen is the presence of a special proteid of the nature of alkali-albumin, containing organic iron. The salts of the spleen

consist chiefly of sodium phosphate. The spleen is also the source of an active peristaltic hormone. This product is apparently only stored in the spleen, having been produced in the stomach and duodenum.

Therapeutic Indication. The total extract of the spleen is used in cases of malnutrition, tuberculosis, anemia and chlorosis and in those cases where there appears to be a deficiency in the iron, phosphorus and sodium. It is used, also, in tuberculosis of the bone and lymphatic glands, malarial toxemia, spleen cirrhosis, inactivity or partial paralysis of the intestinal tract and chronic constipation.

Counter-indicated. In shock and vasomotor instability.

Synergistics. Thyroid, liver, hemoglobin.

Dose. Five to fifteen grains, three to four times a day, after meals. Tablets of five grains.

STOMACH

Source and Parts Used. The mucous membrane of the hog's stomach, that has been excited to digestive action, is the part used. The normal digestive elements are pepsin and hydrochloric acid. Gastrin is obtained by scraping the mucus from the pyloric part of the hog's stomach.

Anatomy and Physiology. The stomach is a pear-shaped dilation of the alimentary canal, connecting the esophagus and duodenum and lying transversely across the upper part of the abdomen and below the diaphragm. It consists of four coats, serous, muscular, submucous and mucous, weighs from four to five ounces and has a capacity of from five to eight pints. Normal gastric juice converts proteids into peptones. The average amount of gastric juice secreted every twenty-four hours is from ten to twenty pints. The amount of hydrochloric acid varies from two to two-tenths per cent. The chief power of digestion of the gastric juices depends on the pepsin and hydrochloric acid. The general effect of stomach digestion is the conversion of food into chyme.

Therapeutic Indication. Principal indications are gastric indigestion, dyspepsia and acute conditions, where there is a disturbance of gastric digestion, requiring the assistance of digestive ferments. These products are also frequently given with indicated medication in gastric conditions.

Synergistics. Hydrochloric acid, papain and stomachic.

Dose. Two to five grains after meals. Best given in solution with hydrochloric acid.

TESTICLES

Source and Parts Used. Testicles of rams and bulls are most suitable for producing the active therapeutic properties. One part of the desiccated substance represents about seven of the fresh gland, depending on the age of the animal.

Anatomy and Physiology. The gland weighs from six to eight drachms. Orchic extract, prepared from this gland, contains at least four active principles—viz. phosphorized albumin, lecithin (phosphorized fats), spermin and nuclein. The first two are of value as nerve constructives, the third is said to increase the oxygen-carrying power of the corpuscles and the fourth possesses bactericidal properties. The chief chemical elements are associated with nutrition, oxidation and cell activity in general. The cells of Leydig are supposed to be the seat of the formation of the internal secretion of the testes. At puberty there is a great development of these cells and a marked atrophy of same cells at old age.

Therapeutic Indication. Principal indications of orchic substance are infantilism, congenital malformation, sterility, premature senility, impotence and testicular insufficiency and debility, melancholia, neurasthenia, defective oxidation, defective growth and mentality. Good results have been obtained by the use of this product in amenorrhea

and treatment of the menopause. This product has been used with benefit in diabetes and tuberculosis.

Synergistics. Small doses of thyroid, prostate, lymphatic glands, adrenal glands and the usual drug medication.

Dose. Two to ten grains, four times per day. Dose to be increased, as required, over an extended period of time. Tablets of two grains.

THYMUS GLAND

Source and Parts Used. The thymus gland is obtained from cattle and sheep, preferably the fetal animal. The total gland is used. One part of the desiccated gland represents about six parts of the fresh gland.

Anatomy and Physiology. This gland, consisting of two lobes, is situated in front of the trachea and over the top of the sternum and weighs, normally, about 75 grains. Development of this gland takes place in the fetus and early childhood and reaches its height of development about the age of two years. It then gradually diminishes in size until, in adult life, but a small vestige remains. The thymus gland has a decided influence upon the metabolism of mineral salts, especially lime, and

also regulates the phosphorus. It appears, also, to regulate the growth and activities of the sexual organs in childhood and seems to have an influence upon the ossification of the bones.

Therapeutic Indication. The extract of this gland has been used in a variety of diseases, as cretinism, deficient development, exophthalmic goiter, chlorosis, rickets, delayed union of fractures, arthritis, malnutrition and deficient growth. It has also proven of benefit in anemia, pernicious anemia, lymphatic disorders and Grave's disease. The thymus extract has exceeded all other therapeutic preparations. It is especially rich in nuclein, which possesses a large proportion of organic phosphorus.

Nuclein is a proteid substance possessing phosphorus in the form of Nucleinic Acid. Nucleins, the chief chemical constituents of cell nuclei, are found in both animal and vegetable tissues. Wherever there is a nucleus there is found nuclein. Nuclein is generally insoluble in dilute acids, but soluble in dilute alkalies and resists peptic digestion. It has four principal functions, to serve as a natural antiseptic, to destroy toxic products which accumulate through faulty elimination, to act as a natural bactericide and to resist microbe invasion. This product is obtained from yeast cells and from a number of the endocrine glands and animal tissues, as the thymus, thyroid, liver and spleen. The giving of nuclein causes no functional disturbance,

but does cause a marked increase of the leucocytes in both healthy and unhealthy subjects. Nuclein has been therapeutically employed in the treatment of infectious diseases such as pneumonia, typhoid fever, tuberculosis, rickets, erysipelas and kindred troubles. This product has been found of benefit, also, in the treatment of dementia perecox and general paresis. Nuclein medication is prompt and permanent.

Dose. One-half to two grains, to be increased, if required.

Principal Indications. Delayed development in children and cases where there is disturbance of the mineral metabolism, malnutrition, exophthalmic goiter, acute and chronic infectious diseases, especially the chronic of an asthenic type, as tuberculosis and anemia.

Counter-indicated. Thymus product should be given with care in uric acid diathesis, rheumatic and gouty conditions.

Synergistics. Calcium salts in tubercular or lymphatic diseases. Anterior pituitary gland in Grave's disease, thyroid and gonads.

Dose. Three to six grains of desiccated gland four to five times per day, about one hour after meals. To be increased as indicated. Tablets of three grains.

THYROID GLAND

Source and Parts Used. The animals from which the thyroid glands are obtained are, principally, lambs and sheep. The glands, freed of their connective tissue and all fat, are desiccated, powdered and standardized to contain approximately .2 per cent of actual iodine. One part of the dried substance represents about six parts of the fresh gland.

Anatomy and Physiology. The thyroid gland, weighing from one to two ounces, is the most important of the ductless glands and its therapeutic efficiency has been thoroughly proven. It is situated in the neck at the upper portion and in front of the trachea and consists of two lobes, situated one on each side of the trachea and connected by a band called the isthmus. The gland, which is surrounded by a capsule, is composed of vesicles lined with cylindrical cells, embedded in fat and connective tissue. The vesicles contain a viscid yellowish fluid, the chemical constituents of thyroid extract, and include iodothyrin, which is its active principle. Iodothyrin contains organic iodine, nitrogen, sulphur and phosphorus. This gland is larger in the female than in the male. It is known to become enlarged during excitement or emotional strain and is one of the chief detoxicating agents of the body. Upon removal of the thyroid

tetany sets in and the animal dies of cachexia. It is found that the thyroid gland is concerned with calcium metabolism. With a lack of thyroid secretion, there is a lack of the calcium. With excess thyroid secretion, there is an increase of the calcium leaving the body. Human beings who have a deficient thyroid secretion are susceptible to cold and suffer increased discomfort during the winter. The opposite is true of individuals with the hypersecretion of the thyroid, as in Grave's disease, where they do not suffer inconvenience from cold weather, but feel the heat of summer very perceptibly. It is a well-known fact that these individuals suffer very much from nervousness and restlessness and are subject to rapid loss of flesh, which in some cases reaches actual emaciation.

Therapeutic Indication. The history of thyroid therapy is fairly well established, as it has been successfully used in the treatment of parenchymatous goiter showing deficient thyroid secretion of the proper hormones. In congenital absence or pathological destruction of the thyroid gland, there are defective secretive conditions. These conditions are very pronounced in myxedema, cretinism, infantilism, certain mental disorders and forms of insanity, obesity and anemia. This product is recommended in certain symptoms of insanity, including hysteria, melancholia, dementia and other peculiarities associated with thyroid disorders that

very often accompany the menopause. This product is often found of benefit in the treatment of rheumatic conditions, arthritis, migraine, arterio-sclerosis, defective oxidation, malnutrition and defective circulatory conditions. Thyroid extract has been used with success in irregular hemorrhages of the menopause, uterine fibroids, rickets, progressive muscular atrophy and insomnia. This product is recommended in the treatment of dysmenorrhea, amenorrhea and chlorosis. Acromegaly has yielded to the combined treatment of thyroid extract and pituitary gland substance. Tetany, torticollis and epilepsy are found to be benefited by this combination.

Principal Indication. Temperature, tendency to subnormal, 97 to 98 degrees Fahrenheit, patient feels cold. Headaches, usually frontal or occipital, tendency to rhinitis. Teeth easily become carious, soft, subject to pyorrhea. Tonsils usually enlarged and subject to slight and severe attacks. Patient subject to colds, in winter to bronchitis. Poor circulation, pulse rather slow, about 60 to 65. Patient's appetite not large, many times craves sweets, subject to gaseous eructations after meals. There is a relaxation of ligaments, crackling noise on motion of small joints. Sudden increase of weight without obvious reasons, one might suspect thyroid disturbance, showing poor oxidation. Skin is dry, rough, eczematous condition, sometimes intense

itching. Hair usually coarse and dry, lacks luster, tendency to come out, scarcity of hair in eyebrows. Constipation is nearly always present. These subjects are prone to fatigue and may present the appearance of senility. Small doses of thyroid, given at intervals in elderly persons, may be found of benefit to help keep the arteries soft in those cases where poor oxidation is in evidence.

Thyroid product is found of benefit in hypothyroidism, myxedema, cretinism, obesity, arteriosclerosis with low blood pressure, malnutrition, rheumatism and arthritis.

You will note hyperthyroidism presents the opposite line of symptoms, in which case thyroid extract should not be given.

Counter-indicated. Thyroid extract is counter-indicated in the majority of cases involving hyperthyroidism, Grave's disease, excessive circulatory disturbance, palpitation and shortness of breath. The symptoms underlying these troubles are caused by an excess of thyroid secretion and the giving of thyroid extract would increase the severity of the trouble.

Synergistics. Thyroid extract in small doses has proven to be of much therapeutic value in combination with other glandular extracts. Iodides frequently enhance its therapeutic efficiency.

Dose. It has been proven that this product has been given in too large doses. Overdoses will be

followed by more or less irritability of the nervous and circulatory system producing tachycardia, insomnia, headache, dizziness and pains in the back and limbs. When these symptoms occur this product should be withdrawn. One quarter of a grain is quite sufficient to start with. Dose to be increased, if conditions permit and it is required. Tablets of one-fourth grain.

TONSIL

Source and Parts Used. Tonsils of calves and other young animals are used. Total extract of the gland. No preparation of this product is on the market.

Anatomy and Physiology. The tonsils, two in number, consisting of glandular tissue, are situated between the anterior and posterior arches of the soft palate. Each has from fifteen to twenty openings. The tonsil is bound by a fibrous capsule. There is a mucous secretion from the tonsil which serves to lubricate and moisten the throat.

Therapeutic Indication. It has been said that the tonsils are the most active of the organic extracts. The desiccated powder of this gland is said to increase both red and white corpuscles and reduce blood pressure. Said to be of service in treatment of diabetes and anemia. The extract

of this gland has not been demonstrated, as to its true clinical therapeutics.

Dose. This depends upon age of animal. Clinical work has not as yet established the dose for this extract.

UTERINE EXTRACT

An extract made from the substance of the uterus has been employed in disorders and conditions which follow as a consequence of the removal of the uterus and its appendages. There is not sufficient data to enable any conclusion to be formed as to the efficiency of this extract, therefore more knowledge must be acquired before we shall be able to give the true therapeutics.

ADRENAL OVARIAN PANCREAS COMPOUND

Adrenal (Total) .....gr. ½
Pituitary (Total) .....gr. ½
Ovarian Substance .....gr. 1½
Pancreas (Total) .....gr. 3

Indicated. Nervousness and irritable conditions due to hypersecretion of the thyroid. Disturbed and irritable condition of the circulatory organs. Irregular heart, rapid and weak pulse. This product will be found of benefit in overcoming disturbed conditions due to ovarian troubles. It acts as a sedative to the sympathetic system.

Dose. One tablet four times a day, one to two hours before meals. Would suggest the giving of spermin extract, from ½ to 1 grain, in combination with this formula for men, when indicated as stated above.

ADRENAL PITUITARY COMPOUND

Adrenal (Total) .....gr. ½
Pituitary (Anterior Lobe)....gr. 1½
Sodium, Calcium, Potassium
Compound .....gr. 3

Indicated. Bronchial asthma and spasmodic conditions of the pulmonary tract. In conjunction

with the giving of the above product antispasmodics, no doubt, will be in order for immediate relief, afterward continuing the above formula for some time.

Dose. One tablet four to five times a day, as indicated.

ADRENAL AND SECRETIN COMPOUND

Adrenal Substance (Total)....gr. ¼
Secretin (Duodenal) .....gr. 2
Bile Salts .....gr. 2
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. Chronic indigestion, associated with pancreatic and biliary inactivity, constipation, clay-colored stools, hypochlorhydria, fermentation of food in intestinal tract and toxemia. This combination stimulates the digestive secretions and assists assimilation.

Dose. One to two tablets two hours after eating, to be increased as conditions require and to be given, in chronic cases, over an extended period.

ADRENAL THYROID SPERMIN COMPOUND

Adrenal Substance (Total)....gr. ¼
Thyroid Gland .....gr. 1/10
Spermin Extract .....gr. 1
Lecithin .....gr. 1
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. In a general run down condition, as follows acute infectious diseases, chronic asthenic conditions, fatigue, low blood pressure and lowered vitality. This product should be given over an extended period.

Dose. One tablet four times a day. Increased blood pressure is a guide to the giving of this tablet.

ADRENAL THYROID SPLEEN COMPOUND

Adrenal Gland (Total).....gr. ¼
Spermin .....gr. 2
Thyroid .....gr. 1/20
Spleen Substance .....gr. 3

Indicated. In tuberculosis and as a tonic where nutrition has been greatly interfered with, as evidenced by loss of flesh and muscular energy. This condition is found in cases of tuberculosis, malaria and other wasting diseases.

Dose. One tablet after meals and at bedtime.

HEMOGLOBIN, NUCLEIN COMPOUND

Hemoglobin .....gr. 3½
Spleen (Total) .....gr. 1½
Nuclein .....gr. ½
Sodium, Calcium, Potassium
Compound .....gr. ½

Indicated. Anemia, pernicious anemia, cachexia and in other conditions, where a ferruginous tonic is indicated. Hemoglobin (organic iron) is the most easily assimilable of any iron combination and is not constipating.

Dose. One tablet after meals and at bedtime. More often if required.

HEPATIC AND BILE SALTS COMPOUND

Hepatic Substance .....gr. 2½
Bile Salts .....gr. 3½

Indicated. Chronic hepatic troubles, as cirrhosis and hypertrophy. Stimulates flow of bile, promotes intestinal digestion, relieves intestinal fermentation and constipation. This combination will be found of benefit in functional hepatic troubles and gall stones.

Dose. One tablet before meals and at bedtime. If constipation is pronounced, increasing doses should be given, until results are obtained. Then lessen doses and give over an extended period.

HEPATIC, BILE AND PANCREATIN COMPOUND

Hepatic Substance .....gr. 2½
Bile Salts .....gr. 2
Pancreatin .....gr. 1½

Indicated. Intestinal indigestion with liver inactivity, toxemia and alimentary stasis.

Dose. One to two tablets two hours after meals, as required.

HEPATIC, SPLEEN AND ADRENAL COMPOUND

Hepatic Parenchyma .....gr. 2
Spleen Substance .....gr. 2
Bile Salts .....gr. ¾
Adrenal Substance (Total)....gr. ¼

Indicated. Hepatic and intestinal inactivity, which in the majority of cases depend upon the sluggish condition of the liver and malnutrition following the toxic conditions from liver inactivity.

Dose. One tablet four times a day, as required, and over an extended period in chronic conditions.

KIDNEY, PANCREAS COMPOUND

Kidney Desiccated
(Nephritin) .....gr. 3
Pancreas (Total) .....gr. 2

Indicated. In deficient renal activity, acute or chronic nephritis (Bright's disease), uremia, eclampsia and albuminuria of pregnancy. By the giving of this product in edema and ascites due to, or partly due to, nephritis, there should be a reduction of these conditions, as I believe this product has diuretic properties, owing to its action on the tubules of the kidney. There is also a lessening of the albumin passing and an increase of chlorides. Kidney substance given in these troubles lowers the nitrogen—that has been retained in the blood—and will be found of benefit in rheumatic conditions, due to this cause. Pancreas tends to neutralize adrenal irritability and will be found of benefit in this product.

Dose. One tablet to be given four times a day, between meals. Increased as required. Strict attention should be given to the diet, bowels and skin. Hygiene also must be regarded. Proper rest and other conditions, as high blood pressure and arterio-sclerosis, must be considered by the physician. Treatment with this product should be given as soon as nephritis is discerned. Would suggest the giving of thyroid extracts, grs. 1/8 to 1/4, in con-

junction with this formula, where high blood pressure or hyperthyroidism is not a complication.

LECITHIN, NUCLEIN, HEMOGLOBIN COMPOUND

Lecithin (90 to 95%).....gr. 2
Nuclein .....gr. 1
Hemoglobin .....gr. 2
Sodium, Calcium, Potassium
Compound .....gr. 2

Indicated. As a reconstructive tonic to the nervous system, especially in chronic nervous disorders and malnutrition. The organic phosphorus and iron as contained in this formula are easily assimilable.

Dose. One tablet four times a day, after meals.

LYMPHATIC, SPLEEN AND THYROID COMPOUND

Lymphatic Glands .....gr. 2
Spleen Substance .....gr. 2
Thyroid Gland .....gr. 1/20
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. Lymphatic enlargement, lack of thyroid secretion (hypothyroidism), anemia in

children and adults and in cases having a tendency to hemorrhage.

Dose. One to two tablets three to four times a day, with food.

MAMMARY AND PITUITARY COMPOUND

Mammary Substance .....gr. 3
Pituitary (Total) .....gr. 1/3
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. In functional or organic menstrual disorders, menorrhagia, metrorrhagia, excessive or prolonged menstrual flow, excessive climacteric hemorrhages and uterine hemorrhages due to fibroid or cancerous condition.

Dose. One tablet every three to four hours. Ergotin should be given with this formula, as indicated, and discontinued when not required, still continuing the above formula, as is needed.

MAMMARY, PITUITARY AND PLACENTAL COMPOUND

Mammary Substance .....gr. 1½
Pituitary (Total) .....gr. ½
Placenta Desiccated .....gr. 2
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. Galactagogue, mammary stimulant, increasing the supply and nourishing quality of milk in nursing mothers. Favors uterine involution.

Dose. One to two tablets after meals and at bedtime, to be increased as required.

NUCLEIN, SPERMIN, HEMOGLOBIN COMPOUND

Nuclein	gr. ½
Lecithin (95%)	gr. 1
Spermin	gr. 1
Hemoglobin	gr. 2½

Indicated. Organic iron and phosphorus in combination that is easily assimilated and does not constipate the patient. This product will be found of benefit in cases of anemia, malnutrition and where there is a need to increase both the white and red blood corpuscles, giving the patient a better stability of health.

Dose. One to two tablets one hour after meals and at bedtime, as indicated.

PANCREAS, THYROID, GONADS COMPOUND

Pancreas (Total) .....gr. 2
Thyroid Gland .....gr. 1/16
Gonads .....A. A. gr. 1½
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. In high blood pressure of male or female, the cause not being entirely due to renal or circulatory troubles. There is a stimulating effect of oxidation and cell activity.

Dose. One tablet after meals and at bedtime.

PANCREAS, TRYPSIN COMPOUND (DIABETES)

Pancreas .....gr. 2½
Trypsin .....gr. 2
Amylopsin .....gr. ½

Indicated. In defective carbohydrate metabolism, glycosuria, diabetes mellitus of **pancreas origin.** Medicinal products may be given as indicated. Care should be used in giving preparations of arsenic, where the condition is complicated with albuminuria. However, these products will be found of much value, when indicated. Before treatment is begun the system must be thoroughly alkalized to obtain results, as the acid conditions,

that are found in diabetic cases, must be overcome. Would recommend the giving of tablets, sodium, lime and potassium compound, one to two tablets with water, one hour before meals and at bedtime. Should constipation become annoying, use saline laxatives. When the urine and feces show they are alkaline the above treatment should be begun and the alkalies should be given along gradually to keep the acids from predominating. Have the patient follow the strict diet and hygiene, as this must be done to obtain results. It has been stated that the dropping of a solution of adrenalin in the eye of an animal from which the pancreas has been removed causes dilation of the pupil, which action does not occur in a normal animal. This test has been used to diagnose pancreatic diabetes from liver diabetes.

Dose. Two to six tablets, two hours after meals and at bedtime. This treatment is to be given over an extended period.

PARATHYROID, SPERMIN, BILE COMPOUND

Parathyroid Gland .....gr. 1/20
Spermin Extract .....gr. 1
Bile Salts .....gr. 2
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. When parathyroid glands require stimulation and an added muscular tone, as in paralysis, chorea, paralysis agitans, senility and deficient oxidation.

Dose. One tablet four times a day. Increase dose, as required.

PITUITARY, ADRENAL, LYMPHATIC COMPOUND

Pituitary (Anterior Lobe)....gr. ¼
Adrenal (Cortex) .....gr. ⅛
Lymphatic Glands .....gr. 1
Lecithin .....gr. 1
Spermin .....gr. 1
Thyroid .....gr. 1/10

Indicated. Lowered vitality of the functional organs, senility, neurasthenia.

Dose. One tablet three to four times a day.

PITUITARY ANTERIOR AND TOTAL COMPOUND

Pituitary (Anterior Lobe).....gr. 1
Pituitary (Total) .....gr. 1
Sodium, Calcium, Potassium
Compound .....gr. 3

Indicated. Lack of development of the gonads, infantilism and cases requiring increased cellular activity. Stimulates metabolism.

Dose. One tablet four times a day.

PITUITARY THYMUS, THYROID COMPOUND

Pituitary (Anterior Lobe)....gr. 1
Thymus Gland .....gr. 1
Thyroid Gland .....gr. 1/16
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. In children with defective mentality and growth, backward children, those subject to chorea, epilepsy, cretinism, anemia, lymphatic disorders and blood dyscrasia.

Dose. One tablet two to three times a day, as indicated, for a few months.

PROSTATE, SPERMIN, LYMPHATIC COMPOUND

Prostate .....gr. 1½
Spermin .....gr. 1½
Lymphatic .....gr. 1½
Nuclein .....gr. ⅛
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. Prostatic diseases, as enlarged prostate, prostatic irritation, neurasthenic conditions depending on prostatic troubles, lack of gonad activity, senility, defective nutrition, impotency, neurasthenic conditions and mental diseases. This product will be found of benefit in the treatment of women who are of a neurasthenic tendency.

Dose. One tablet three to four times a day. This product should be given for some time. Indicated medication may be used in conjunction, if desired.

SODIUM, CALCIUM, POTASSIUM COMPOUND (ALKALINE TABLET)

Sodium Phosphate	pts. 2
Calcium Phosphate	pts. 4
Calcium Glycerophosphate	pts. 2
Magnesium Phosphate	pts. 1
Potassium Bicarbonate	pts. 16
Sodium Bicarbonate	pts. 25

Indicated. As an antacid which aids in neutralizing the excessive tendency of the body to acid, (acidosis), which tendency is most common in cases associated with endocrine insufficiencies. This product is useful in toxic conditions that are due to

alkaline deficiency. There should be a thorough alkaline condition of the body established, in conjunction with glandular extract treatment, as this formula represents approximately, with the exception of sodium chloride, the proportions of mineral salts present in the blood under normal conditions. It is therefore indicated to overcome this acid condition that has been due to poor oxidation and to re-establish these alkaline mineral requirements of the blood and tissues. Acids are the weapons of death, while the alkalies are the foes of death.

Dose. One to two tablets dissolved in plenty of water, one to two hours before meals and at bedtime. This treatment should be continued for a few weeks, to overcome the acid condition.

SPERMIN, THYROID COMPOUND

Spermin .....gr. 2½
Thyroid .....gr. 1/20
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. Impotency, enlarged prostate, senility, a general asthenic condition of the gonads.

Dose. One tablet four times a day, to be increased if required and given over an extended period.

THYMUS, LYMPHATIC, PITUITARY COMPOUND

Thymus Gland .....gr. 1
Lymphatic Glands .....gr. 2½
Pituitary (Anterior Lobe)....gr. ½
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. In slow development of children, especially those troubled with recurrent adenoids and hypertrophied tonsils. This product assists in reconstruction by supplying the needed hormones of the endocrine glands. Alterative.

Dose. One tablet four times a day, as required.

THYMUS, THYROID, ADRENAL COMPOUND

Thymus Gland .....gr. 1
Thyroid Gland .....gr. 1/10
Adrenal Gland (Total).....gr. ¼
Pituitary Gland (Anterior
Lobe) .....gr. ½
Prostate Gland .....gr. 1½
Orchic Substance .....gr. 2
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6½

Indicated. Infantilism and endocrinous disorders of the adult, treatment of children showing

backward development, asthenia, hypochondriasis, melancholia, functional and endocrine impotency, sexual neurasthenia and sterility.

Dose. One tablet four times a day, to be increased, as required and given over an extended period. Indicated medications may be given, as indications present themselves.

THYMUS, THYROID, PITUITARY COMPOUND

Thymus Gland .....gr. 3
Thyroid Desiccated .....gr. ⅛
Pituitary (Total) .....gr. 1/20
Ovary .....gr. 1
Testes .....gr. 1
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. In chronic rheumatism, arthritis deformans and pains in joints. This product will be found of service in myalgia, when there is poor metabolism and elimination.

Dose. One tablet four times a day, to be given for several weeks. Then treatment discontinued for a time, to be begun again and given for some time. Diet and hygiene must be observed. When cases are complicated with low blood pressure, the giving of the adrenal gland with the above formula in doses of ⅛ to ¼ grain will be of benefit.

THYROID AND GONADS COMPOUND

Thyroid Desiccated .....gr. ⅛
Ovary .....gr. 1
Testes .....gr. 1
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. Neurasthenia, premature debility of old age and asthenic conditions, menstrual disorders and climacteric disturbances, suboxidation, insomnia and the headaches that are associated with high blood pressure. Debilitated conditions, as noted when patient lacks vigor, has a general run-down condition and chronic cardiac disturbances, with high blood pressure.

Dose. One to two tablets, three to four times a day, one hour before meals, over an extended period.

THYROID, NUCLEIN COMPOUND

Thyroid Gland .....gr. ¼
Nuclein .....gr. ¼
Ferri Iodide Sacch.....gr. ½
Sodium, Calcium, Potassium
Compound .....gr. 5

Indicated. Goiter or enlargement of the thyroid gland, due to a lack of thyroid secretion, as is noted

in young girls at the age of puberty and women during ovarian changes. These cases rarely present the symptoms of anemia or malnutrition.

Dose. One tablet, three to four times a day, between meals.

THYROID, OVARIAN AND MAMMARY COMPOUND

Thyroid (Total) .....gr. 1/10
Ovarian Substance .....gr. 1
Mammary Substance .....gr. 2½
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. Too frequent and prolonged menstruation, dysmenorrhea, ovarian and pelvic congestion, tender and irritable ovaries, menorrhagia, metrorrhagia. Will be found of service at the climacteric.

Dose. One tablet, three to four times a day, beginning a week before menstruation and continuing during the flow.

THYROID, PITUITARY AND GONADS COMPOUND

Thyroid Desiccated .....gr. ⅛
Pituitary (Total Gland).....gr. 1/20
Ovary . . ..gr. 1
Testes . . ..gr. 1
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. Neurasthenia, premature debility of old age and asthenic conditions, menstrual disorders and climacteric disturbances, suboxidation, insomnia and the headaches that are associated with low blood pressure. Debilitated conditions, as noted when patient lacks vigor, has a general run-down condition and chronic cardiac disturbances, with low blood pressure.

Dose. One to two tablets, three to four times a day, one hour before meals, over an extended period. Suggest the giving of adrenal gland, grain ⅛ to ¼, when the patient has low blood pressure.

THYROID, PITUITARY, PANCREAS COMPOUND

Desiccated Thyroid (Whole Body) . . . . . gr. 1/25
Pituitary (Whole Body) . . . . . gr. 1/50
Spleen Substance . . . . . gr. 1
Pancreas . . . . . gr. 1½
Hepatic . . . . . gr. 1
Sodium, Calcium, Potassium Compound . . . . . q. s. gr. 5

Indicated. To assist metabolism in wasting diseases and conditions of malnutrition. This combination will be found of benefit in cases where it is found necessary to increase weight, as in tuberculosis and lowered vitality, as it tends to raise body resistance to infection and aids normal digestion. The giving of this combination can be recommended for undernourished children. Would recommend the indicated medicinal tonics, where required.

Dose. Two to four tablets, before eating and at bedtime, as required.

THYROID, PLACENTA COMPOUND

Thyroid Gland .....gr. 1/20
Placenta (Desiccated) .....gr. 4
Sodium, Calcium, Potassium
Compound .....q. s. gr. 6

Indicated. In vomiting and nausea of pregnancy.

Dose. One to two tablets, taken four to five times a day, with as hot water as can be taken.

THYROID, SODIUM, CALCIUM, POTASSIUM COMPOUND

Thyroid .....gr. 1/8
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5
Thyroid .....gr. 1/4
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5
Thyroid .....gr. 1/2
Sodium, Calcium, Potassium
Compound .....q. s. gr. 5

Indicated. Thyroid insufficiency, hypothyroidism, myxedema and cretinism. These patients generally run a subnormal temperature, have poor circulation and slow pulse. The skin is dry and rough, and may be eczematous, the nails are brittle

and the teeth soft and subject to decay and the hair turns prematurely gray. These patients are nearly always constipated, require abundance of sleep, are inclined to obesity and very prone to fatigue and circulatory disturbances. They are subject to migraine, asthmatic attacks, chronic rheumatism, gout and mental symptoms. Thyroid extract is given with the view of increasing the cell chemistry and replacing the depleted alkaline salts.

Dose. The patient should always be started with a small dose, to be increased as conditions warrant and can be tolerated. One tablet before meals and at bedtime.

TRYPSIN, PANCREATIN AND PAPAIN COMPOUND

Trypsin	gr. ½
Pancreatin	gr. 2
Papain	gr. 1
Berberine Muriate	gr. 1/10
Jamaica Ginger	gr. 1

Indicated. Gastro-intestinal indigestion, flatulence and fermentation. Aids digestion of proteid and starch.

Dose. One to two tablets, one hour and a half after meals.

INDEX