

bi tend to spread centripetally into the larger vessels. Thus, with the few exceptions due to pressure, thrombosis of the portal vein and the inferior vena cava is brought about by extension from the mesenteric and iliac veins. Local thrombosis in such large vessels as the portal vein and inferior vena cava is as a rule due to the pressure of enlarged glands or new growths. Two cases of this kind, occurring in my series, were due, the one to a secondary retroperitoneal carcinoma, the other to a new growth in the diaphragm compressing the vessel just outside the heart. One interesting case of local portal thrombophlebitis was due to the presence of an abscess at the hilus of the liver originating in a septic cholecystitis. It is by no means unknown, however, for a thrombus to propagate itself in a peripheral direction in opposition to the blood stream. An example of this was seen in one of my series where a thrombophlebitis of the mesenteric and portal veins extended into the splenic. In view of this fact it is not always easy to determine the exact spot at which a thrombus originated. Careful study of the appearance of the thrombus will, however, in some cases reveal the truth. Thus, the autochthonous portion of the thrombus is firmer, often granular, and adherent, of grayish or grayish-red color, while the propagated thrombus is soft, red, and somewhat loosely attached. A curious fact also is that an occluding thrombus may cause such disturbance of the blood stream that multiple discontinuous coagula are found in the neighborhood of the original one, or these may be connected by red or mixed thrombi. In some few cases also, as shown by my series, multiple primary thrombi may be produced in parts of the venous system utterly remote one from the other, and having no anatomical or functional relationship. In such cases we must assume that there is a systemic disturbance at the back of the condition.

Common sites for primary venous thrombi are in the mesenteric, crural, prostatic, and ovarian veins.

Thrombosis of the mesenteric veins is practically always due to some inflammatory lesion of the intestines, such as appendicitis or colitis and is really a thrombophlebitis. In some few cases it has been due to cachexia or marasmus, and without lesion of the intestine. Curiously enough it is distinctly rare in typhoid fever, which seems to have a predilection for the crural veins, although it has occasionally been met with.

The majority of cases are associated with perforative appendicitis, and here it is the superior mesenteric vessel that is first and chiefly affected, a fact that is readily explained by the position of this vessel which leads directly from the ileo-caecal angle. The complication is important as it frequently leads to necroses and abscesses in the liver. In such cases the portal vein, although not invariably, is thrombosed as well. The converse has occasionally been observed, viz., that a portal thrombosis has extended into the mesenteric vessels.

Thrombosis of the crural veins, involving not infrequently the iliacs as well, is encountered in tuberculosis, carcinoma, the various cachexias, but more especially in phlebitis of the puerperium, chlorosis, typhoid, and other infective diseases. Many of the cases are associated with marasmus, but it is hard to exclude a local infective cause. The affection is more common on the left side, owing, as has been supposed, to the greater length and obliquity of the left common iliac vein and its passage under the right common iliac artery. As is well known, the condition is not uncommon in typhoid fever during the later stages. There has come under my notice a curious instance where a man had suffered from an attack of typhoid some fifteen or twenty years previously, and had experienced, during this attack, a swelling of the left leg. He contracted a second attack of fever, from which he died, and in this attack, there was again evidence of thrombosis in the same limb. At autopsy there was found a canalized fibrous cord in the crural vein representing the former lesion, while the vessel was completely obstructed by a recent clot which had formed just above the old thrombus.

Portal thrombosis is commonly secondary to thrombosis of the mesenteric or splenic veins. When primary, it is usually due to pressure, as from cirrhosis, syphilis, tumors of the liver, enlarged glands, gall stones, abscesses, chronic peritonitis, or disease of the vessel walls.

Thrombosis of the splenic vein may be brought about by infarcts or abscesses within the organ or by the extension of morbid processes from the pancreas. It is one of the rarest complications of typhoid fever (Köster).

Thrombosis of the inferior vena cava is occasionally met with. When autochthonous it is commonly due to the pressure of a new growth. Three instances have come under my notice at autopsy. In two it was to be attributed to the pressure of a secondary retroperitoneal carcinoma, and in one of these it was propagated from the iliacs. In the third there was a tumor, the size of an orange, in the diaphragm that led to occlusion of the vessel just before it entered the heart.

Thrombosis of the renal veins is rather common in children with cerebral disease or marasmus, but is also met with in adults in chronic nephritis and in malignant growths of the kidney.

Thrombosis of the superior vena cava has been observed a number of times. It is nearly always due to the pressure of mediastinal tumors, aneurisms, or enlarged glands.

Thrombosis of the innominate, subclavian, and jugular veins is usually due to pressure, to cardiac disease, and rarely to infection, empyema, acute rheumatism, tuberculosis, traumatism, and marasmus.

Thrombophlebitis of the veins of the broad ligaments is common in septic endometritis. It must in many cases be a rather mild affection and often recovered from, at least if the presence of phleboliths in this situation is any proof.

Thrombosis of the pulmonary veins is secondary to some affection of the lung, such as tuberculosis, abscess, gangrene, tumors, infarction, and pneumonia. It may on occasion lead to embolism in the arterial system.

A rare form of thrombosis, and one chiefly of pathological interest, is that occurring in the adrenal vein, as in a case recently recorded by Woolley from the Montreal General Hospital (*Jour. Med. Res.*, March, 1902, p. 231). It was found in a child of eleven months that had suffered from measles, and led to infarction of the organ.

THE RESULTS OF THROMBOSIS.—The morbid changes and symptoms produced by thrombosis are attributable, in the first place, to the obstruction of the circulation due to the clot, and, secondly, to the special character of that clot and the condition of the vessel wall. Much depends upon the position of the occluding plug, the rapidity and extent of the obstruction, the formation and the effectiveness of the collateral circulation, the nature of the thrombus, and the local and systemic peculiarities. Obstruction of arteries, particularly when of the terminal variety, is more likely to be followed by marked results than is obstruction of veins, where the anastomoses are as a rule much more abundant. If the collateral circulation be quickly established, no pathological or clinical effects are produced and *restitutio ad integrum* may be complete. When the condition sets in gradually, the symptoms are slow in developing, but frequently increase in intensity. In parts unfavorably constituted the symptoms are acute and the results serious. Obstruction of arteries leads often to necrosis and softening; that of veins to congestion and oedema, followed also, it may be, by gangrene or necrosis. Should infective micro-organisms be present, a local abscess, or even systemic infection, may occur.

With regard to the clinical signs, everything depends on the localization of the thrombus. Should it occur in some vital organ, like the heart, death may occur immediately or very soon. Should it affect important districts, like the cerebral cortex or internal capsule, peripheral palsies result that direct the attention to the position of the lesion. Or, again, localized oedema or the dilatation of superficial vessels will suggest its presence. While it is true that many thromboses occur in what

may be called "blind" regions, those of important vessels, such as the cerebral arteries and sinuses, the crural veins, the portal vein, and the inferior vena cava give rise to fairly characteristic signs which render them amenable to ordinary methods of diagnosis. The effects differ considerably according to the part of the circulatory system involved.

The presence of intracardiac thrombi may at times perhaps be suspected, but can rarely if ever be diagnosed with certainty. Except for providing emboli, the globular thrombi can hardly produce any definite symptoms. The presence of thrombi in or near the various ostia of the heart may occasion murmurs and thrills identical with those resulting from valvular disease. Unless, however, the orifices are encroached upon, few or no symptoms are produced that will suggest the presence of thrombi. Even in the case of "ball thrombi" the signs are indistinguishable from those of mitral stenosis, and sudden death is rare, contrary to what one would expect.

The clinical manifestations of arterial thrombosis are in many cases indistinguishable from those of embolism. Where the circulation is cut off slowly a collateral anastomosis may be established, even in the cases of the main trunks like the femorals, iliacs, and aorta, and the results may be trivial. Should, however, the occlusion be brought about suddenly, as not infrequently happens, particularly in the case of organs like the brain, spleen, and kidneys, where many of the arteries are "terminal" or end arteries, the consequences may be serious. Furthermore, the possibility of a collateral circulation being established depends largely upon the condition of the vessel walls and the vigor of the systemic circulation. The differential diagnosis between arterial thrombosis and embolism is beset with difficulties. The most important points are the sudden onset in embolism and some condition of the heart or vessels which could give rise to embolism. Mistakes, however, readily occur.

In the case of thrombosis of the arteries of an extremity, as for instance the leg, the first symptom is pain, which is often agonizing and paroxysmal. The limb becomes pale, cold, mottled with livid patches, numb, and paretic. Tactile sensibility is lost, although there may be increased susceptibility to painful impressions. The limb becomes oedematous and the skin moist. Should the collateral circulation not be established gangrene sets in, usually of the dry variety, unless the veins also become blocked or the limb become infected. This form is often due to arteriosclerosis and is met with in diabetics.

Charcot's syndrome, "intermittent claudication," has been observed in cases of thrombosis of the femoral and iliac arteries, and the abdominal aorta. It is more common, however, in simple arteriosclerosis. In this condition the lower extremities during rest receive enough blood for their needs, but not during active exercise. Consequently after exercise some muscular weakness and numbness of the limb may be observed, and in the severer cases the symptoms are very pronounced, with the addition of pain and cramps in the leg, which becomes cold, pallid, and sometimes cyanosed. After a short rest the symptoms disappear, only to reappear on occasion.

Thrombosis of the pulmonary artery may be entirely latent, or again may cause rapid or immediate death. In some cases the affection is subacute or chronic, and is characterized by dyspnoea, cyanosis, incompetency of the heart, and hæmoptysis.

Thrombosis of the coronary arteries of the heart is not uncommon, and is a more frequent cause of infarction of the heart than is embolism. Sudden death may result, but, when the patient lives, symptoms practically identical with those of fibroid degeneration of the myocardium may be produced. These are a slow irregular pulse, dyspnoea, precordial distress, and anginal attacks.

Thrombosis of the cerebral arteries leads to ischaemic softening with all its consequences—loss of consciousness, hemiplegia, mental degradation, and the like.

Capillary thrombosis, owing to the free anastomotic

communications, does not give rise to symptoms unless large areas are involved. Necrosis is the common result, but it is probably more usual for this to be a cause of thrombosis than the reverse. The association of these thromboses with burns, frost-bite, ergotism, and various infections has been before referred to. Welch has observed the condition in the bases of gastric ulcers.

The most frequent examples of thrombosis are afforded by the venous system, for reasons that have already been sufficiently entered into. The venous anastomoses are, however, so abundant in most parts of the body that the most extensive vascular occlusion may occur without the production of serious consequences. Much depends on the localization of the clot and the rapidity of its formation. The varying and often apparently contradictory results produced by venous thrombosis are to be explained, however, not entirely on these grounds, but by a reference to other factors, such as anaemia, cachexia, and infection. Phlebosclerosis and phlebitis also play a part. As we meet it in, say, the extremities, the most constant and characteristic symptom of venous obstruction is oedema, sometimes (although by no means invariably) combined with hemorrhage. In the case of the cerebral, splenic, and mesenteric veins necrosis may occur. This event is excessively rare in the case of the extremities. In addition to the mechanical effects should be mentioned inflammation, which is often secondary to the thrombotic process, or indeed may be the cause of it, as in the case of phlebitis. This often leads to active hyperaemia, pain, and constitutional disturbance.

The most familiar example of venous thrombosis is that which occurs in the extremities, usually the lower. The affection may be unsuspected or give rise only to trifling signs, such as slight oedema of the limb. In other cases there may be pain as well, sometimes with a little fever (phlegmasia alba dolens), or again there may be chills and high fever with even evidences of septicopyaemia. Some observers (Mahler, Wyder, and Singer) have called attention to the increased rapidity of the pulse, which may even be present before actual thrombosis takes place, and may persist after the temperature has fallen. In a typical case the affected limb is swollen, there is more or less pain, usually more severe in the groin, the inside of the thigh, the popliteal space, and the calf. There may be sensations of numbness or tingling. The limb becomes swollen and firm, the skin is tense and white, often showing distended veins, and the tissues are hard and elastic. In other cases the skin is livid and congested. More or less phlebitis commonly results. The great danger of thrombosis of the veins of the lower extremities is in detachment of the clot and fatal pulmonary embolism. This is by no means an infrequent termination. It is perhaps more common in puerperal and septic cases. In cases that recover the limb may remain swollen for many months. Necrosis of the part only exceptionally occurs, and is due probably to some arterial complication. Pain and other nervous phenomena in some cases have led to the recognition of a neuralgic type of the affection (Graves, Trousseau, and Quenu). A mild peripheral neuritis has also been observed. Rare sequels of crural thrombosis are varicose veins, ulcers, elephantiasis, hypertrophy or atrophy of muscle, and club-foot.

Unless due to some continually acting cause, such as an intrathoracic tumor or aneurism, thrombosis of the arms is a less severe affection than that of the lower extremities.

Thrombosis of the inferior vena cava is an affection of some importance, and is in my experience frequently overlooked. It may occur without any special symptoms, but when present they are usually characteristic. In the cases that I have seen the thrombosis frequently began in one leg and was followed by thrombosis of the other. Later, there was more or less abdominal pain with extension of the oedema to the abdominal and lower thoracic wall. In one case the oedema was extreme, and curiously localized to that part of the body which is below the breasts, at which level the line of demarcation

was sharply defined. The most important sign, however, is the presence of distended veins in the abdominal and lower thoracic walls. The veins are sometimes tortuous and varicose, and may reach the size of the little finger. The anastomosis is performed by the superior and inferior superficial epigastric, the long thoracic, the superficial circumflex iliac, the external pudic, the lumbo-vertebral anastomotic trunk of Braune, and various other veins. There is also communication through the visceral veins and the azygos. When the anastomosis is chiefly through the deep vessels to the exclusion of the superficial ones, the diagnosis becomes much more difficult, if not indeed impossible. Should occlusion of the renal veins occur well, hæmaturia and albuminuria may be present, yet these are more often absent than present. The diagnosis is rendered still more probable when one is able to determine the presence of retroperitoneal new growths in the upper part of the abdomen or of tumors at the hilus of the liver. Schlesinger (*Deutsche med. Woch.*, S. 460, 1896) has pointed out that in a few cases the obstruction is in one leg only. This may be due to the existence of a collateral circulation on one side due to a former iliac thrombosis; to complete occlusion of the iliac on one side with a parietal thrombosis of the inferior cava; or to congenital duplication of the cava.

Thrombosis of the portal vein is perhaps more commonly of the septic variety (portal pylephlebitis). This is one of the common accompaniments of abscesses of the liver. The affection as a rule extends from the mesenteric vessels and is not uncommon in appendicitis. Simple portal thrombosis when it develops gradually is hardly to be diagnosed. When present the symptoms are those of portal obstruction, viz., ascites, hæmatemesis, enlargement of the spleen, dilatation of the superficial abdominal veins, and progressive emaciation. The symptoms may, however, be far from characteristic, or indeed may be absent. In general, however, the acute onset, the intensity of the portal obstruction, and particularly the quick return of the ascites after tapping are very suggestive. These points are of all the more importance when the signs develop in a hitherto healthy person or in the course of some affection not ordinarily associated with portal obstruction.

Thrombosis of the mesenteric veins is usually due to ulceration or other inflammatory lesion of the intestines. It is rather common in appendicitis. As a rule the superior mesenteric vein is first and chiefly affected. The condition is frequently a thrombophlebitis. There may be no symptoms, but generally there are intense abdominal pain, tympanites, vomiting, sometimes bloody, melenæ, and collapse.

Thrombosis of the renal veins is comparatively common, especially in children with marasmus. It may extend from the vena cava, but may be primary. Contrary to what one would expect, hæmaturia and albuminuria are rather more often absent than not.

Thrombosis of the splenic vein is rare. It is usually associated with abscess or infarction of the spleen, or disease of the pancreas. In some cases the process spreads in a retrograde manner from the mesenteric and portal veins, as in one of my cases. Welch has met it also in calcification of the splenic vein, and Köster in typhoid. Infarction and necrosis of the organ may result, as in a case arising from torsion of the pedicle, described by Osler.

Obliteration of the superior vena cava is excessively rare as an autochthonous condition. Generally it is due to the pressure of a mediastinal growth, enlarged glands, or an aneurism. The symptoms, when characteristic, are cyanosis and œdema of the face, arms, neck, and thorax, and dilatation of the veins over the anterior aspect of the thorax and upper part of the abdomen.

Thrombosis of the pulmonary veins is usually secondary to lesions of the lungs, such as gangrene, tumors, abscess, emphysema, pneumonia, and tuberculosis. It may rarely give rise to emboli in the general arterial system.

Thrombosis of the innominate, subclavian, and jugular veins is met with in connection with cardiac disease and

compression. Occasionally it is seen in acute rheumatism, tuberculosis, empyema, traumatism, marasmus, and infection. Thrombosis of the jugular frequently originates in thrombosis of the lateral sinus in cases of mastoid suppuration, and may give rise to general infection. The symptoms in the various forms are analogous to those already described.

TREATMENT.—Cases must be treated on their merits. Marasmus, enfeebled circulation, and infection being the important etiological factors, one should endeavor to promote nutrition, to strengthen the heart, and to prevent complicating infection. In the last event, should the focus of infection be accessible, it should be treated on surgical principles. We are, however, unable to control the process of thrombosis directly, so that our further efforts should be directed to assisting the establishment of collateral circulation, in order to minimize the effects of congestion and to prevent gangrene. These measures are, however, only applicable to the affection when it involves the extremities. In the case of venous thrombosis of the lower extremities the utmost care must be taken to avoid detaching the clot, on account of the imminent risk to life from pulmonary embolism. Here "masterly inactivity" is the watchword. Absolute rest must be enjoined, suitable diet prescribed, and the limb fixed in a proper position. In the case of the lower extremity the patient should lie on the back, with the limb on an inclined plane. The limb should be wrapped in cotton-wool. If pain be severe, applications of lead and opium should be employed or morphine be given internally. All manipulation and even palpation of the limb should be strictly avoided. Massage is absolutely contraindicated. I have known death to result from this irrational procedure. To insure fixation of the limb plaster of Paris may be applied to the hip. The patient should be confined to bed in an average case for at least six weeks. The danger can hardly be said to be past, however, for two weeks longer. During convalescence gentle bandaging should be adopted or a long stocking worn.

Should gangrene result, the case must be treated on ordinary surgical principles. *Albert George Nicholls.*

THRUSH. See *Mouth, Diseases of*, in THE APPENDIX.

THYMACETIN.—An analgesic, prepared and named by Hoffman, of Leipsic, and brought to the notice of the profession in 1892 at a meeting of the Berlin Association for Psychiatric and Nervous Diseases, by Prof. F. Jolly (*Cent. f. die gesam. Ther.*, February, 1892). It is closely allied to phenacetin, bearing the same relation to thymol that the older drug does to phenol. It occurs as a white crystalline powder, only slightly soluble in water. Professor Jolly described the results of a series of experiments upon animals, with this drug, and its use in a number of cases of nervous and mental diseases. He did not find that it had any antipyretic action, but its analgesic and hypnotic properties were undoubted. He found it of most service in headaches and pain of a purely nervous character, but when there was any organic disease it failed to produce any beneficial effects. He considered its action equal to that of phenacetin. As an hypnotic it was administered with success. The dose ranged from three and three-quarters to fifteen grains. No toxic action was noticed, but it produced an acceleration of the pulse and a complaint, in some cases, of a fullness, beating, and noises in the head. *Beaumont Small.*

THYME or GARDEN THYME.—(*Herba Thymi*, P. G.; *Thym*, Cod. Med.). The dried herb of *Thymus vulgaris* L. (fam. Labiata).

The common garden thyme is a low, slender, more or less hairy, much-branched shrub, a foot or less high, with brown, nearly cylindrical branches, minute, opposite, narrowly oval or lanceolate leaves, and blunt, interrupted, spike-like clusters of violet-colored flowers terminating the branches. Flowers small. Calyx and corolla both labiate. Stamens four, sometimes short and equal, at other times long, exerted, and in pairs. It

is a native of Southern Europe, but cultivated there and elsewhere for centuries.

Thyme has but little history as a medicine, being mostly used as a condiment and flavor for soups, etc. It has, however, far more important medicinal properties than others of its class. Since these are almost wholly due to the volatile oil and its contained thymol, they are considered below in connection with those substances.

It contains about two and a half per cent. of volatile oil, with a small amount of tannin and other unimportant constituents. The dose of thyme is 2-4 gm. (gr. xxx.-lx.).

Oil of Thyme (Oleum Thymi, U. S. P.) is thus described by the Pharmacopœia.

"A yellowish or yellowish-red liquid, having a strong odor of thyme, and an aromatic, pungent, afterward cooling taste. It becomes darker and thicker by age and exposure to the air."

"Specific gravity: 0.900 to 0.930 at 15° C. (59° F.)."

"It does not fulminate with iodine."

"The oil is soluble in half its volume of alcohol, forming a clear solution which is neutral or only very slightly acid to litmus paper. The oil is also soluble, in all proportions, in carbon disulphide, and in glacial acetic acid."

"With a drop of ferric chloride T.S. the oil yields a greenish-brownish color, which changes to reddish."

"If 1 c.c. of the oil be shaken with 10 c.c. of hot water, and, after cooling, the liquid be passed through a wet filter, the filtrate should not assume, with a drop of ferric chloride T.S., a bluish or violet color (absence of carbolic acid)."

The oil thus described is what is known commercially as the *brown or red oil*, besides which there is a *white oil*. The latter was formerly described by the Pharmacopœia, but is, as a matter of fact, medicinally inferior to the former, though it is preferred for those purposes in which absence of color is an object. The commercial oil varies most widely in its characteristics, even when genuine, and the official description should be carefully observed. Although oil of thyme is of complex composition, its properties are essentially those of its thymol, of which the amount should be from twenty to twenty-five per cent. Occasionally a larger or smaller part of this is naturally substituted by carvacrol. *Cymene* and *thymene* are also present. The dose of the oil is one to five, or even ten minims.

Thymol (C₁₀H₁₄O) is also official, and is defined as "a phenol occurring in the volatile oils of *Thymus vulgaris* L., *Monarda punctata* L., and *Carum Ajowan* (Roxb.) B. et H., and is thus described:

"Large, colorless, translucent crystals of the hexagonal system, having an aromatic, thyme-like odor, and a pungent, aromatic taste, with a very slight caustic effect upon the lips."

"Its specific gravity, as a solid, is 1.069 at 15° C. (59° F.), but when liquefied by fusion it is lighter than water. It melts at 50° to 51° C. (122° to 123.8° F.), remaining liquid at considerably lower temperatures. When triturated with about equal quantities of camphor, menthol, or chloral, it liquefies."

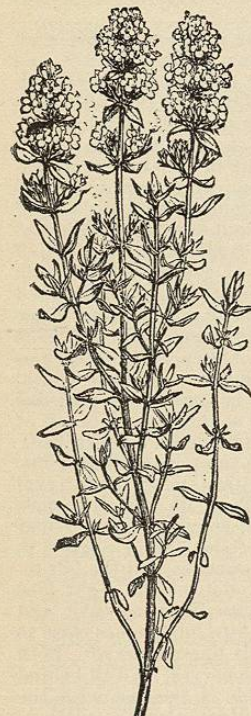


FIG. 4710.—*Thymus vulgaris*. Flowering branch, about half natural size. (Baillon.)

"Soluble in about 1,200 parts of water at 15° C. (59° F.), and in less than its own weight of alcohol, ether, or chloroform; also readily soluble in carbon disulphide, glacial acetic acid, and in fixed or volatile oils."

"Its alcoholic solution is optically inactive."

"If a very small crystal of thymol be dissolved in 1 c.c. of glacial acetic acid, and then six drops of sulphuric acid and one drop of nitric acid be added, the liquid will assume a deep bluish-green color."

"If 1 gm. of thymol be heated in a test tube, in a water-bath, with 5 c.c. of a ten-per-cent. solution of sodium hydrate, a clear, colorless, or very slightly reddish solution should be formed, which becomes darker on standing, but without the separation of oily drops (absence of *thymene*, or *levogyrate pinene*, C₁₀H₁₆). If to this solution a few drops of chloroform be added, and the mixture agitated, a violet color will be produced."

"When a crystal of thymol is heated in an open capsule, or in a watch-glass, on a water-bath, it should gradually volatilize, leaving no residue (absence of *paraffin*, *spermaceti*, etc.)."

Thymol, besides its important properties as a carminative and intestinal general stimulant, shared by the volatile oils of the *Labiatae* in general, is one of the most useful antiseptics which we possess. It is of the greatest service both for its application to the outer surface of the body and to all mucous surfaces, and especially in purulent and other septic catarrhal disorders, and as an intestinal disinfectant. Its value for the latter use depends upon the energy and permanence of its effects, it being superior in these respects to carbolic acid, yet possessed of but very slight poisonous properties, large doses being required for the production of poisonous effects. It is the principal active constituent of "listerine," with which the *Liquor Thymoli Compositus*, or *Antiseptic Solution*, is practically identical. The dose of thymol is one to five grains. An ointment of thymol, strength five per cent., is frequently of great value in relieving itching. *Henry H. Rusby.*

THYME, WILD, or *Serpyllum*, is the herb *Thymus Serpyllum* L., native of the Old World and sparingly naturalized in the United States. The stems are much more slender even than those of garden thyme, partly prostrate, and usually reddish and pubescent. The leaves are shortly petioled, opposite, scarcely one-fourth of an inch in length, and about half as broad, ovate, the flowers small, pale, and darker-spotted. Its odor and taste are similar to those of garden thyme, and it contains a volatile oil practically identical with that of oil of thyme, with which its properties agree. *Henry H. Rusby.*

THYMOFORM is a yellowish, tasteless powder composed of formaldehyde and thymol and smelling feebly of the latter. It is insoluble in water, mineral oils, or glycerin, but dissolves in alcohol, ether, chloroform, and olive oil. It is an antiseptic dusting powder. *W. A. Bastedo.*

THYMOL CARBONATE AND THYMOL-URETHANE. See *Thymotal*.

THYMOL CHLOR-METHYL-SALICYLATE is a white crystalline powder which is insoluble in water, but is soluble in alcohol, ether, acetic ether, and in dilute solutions of the alkalis. It is used as an antiseptic. *W. A. Bastedo.*

THYMOTAL.—Tyrotol, thymol carbonate—is prepared by passing phosgene gas (COCl₂) through a twenty-per-cent. solution of sodium hydroxide in which thymol is dissolved. It is a white, nearly tasteless crystalline body with a faint thymol odor. It passes through the stomach unchanged, but probably splits up in the intestine. It is employed as an anthelmintic in dose of 0.5-1 gm. (gr. viij.-xv.) for children, and 2 gm. (gr. xxx.) for adults.