When acute symptoms of poisoning result from the presence of iodine in the gastro-intestinal tract, the term iodism is less appropriate.

The usual mode of intoxication is through the continued use of some iodine compound like potassium or sodium iodide. Occasionally the internal or even local use of iodine itself has been the cause of the poisoning. As has been pointed out above, the decomposition of iodoform with consequent absorption of iodine sometimes occasions general as well as local symptoms.

The amount of iodine necessary to produce symptoms of poisoning varies in individual cases according to personal peculiarities, the pre-existence of certain diseases, and the manner of administration of the drug itself. By gradually increasing the dose of the drug, considerable quantities of an iodide or of iodine may be tolerated by normal persons, and the tolerance of syphilitics for this drug is so well known that many clinicians believe the therapeutic test of administering iodides to ascertain the patient's tolerance is of value in the diagnosis of a syphilitic taint. It is claimed by those who advocate the value of the therapeutic test that the tolerance of large doses without the development of symptoms of iodism is an evidence of syphilis; and, on the other hand, the development of symptoms is an evidence of freedom from that disease. There is no doubt but that those who have been infected with this disease often bear very large doses of iodide in most instances, but the value of the test is frequently exaggerated. It has decided limitations. The same tolerance seems to occur in persons affected with actinomycosis, against which disease iodine and the iodides appear to be almost specific. Sometimes it is noted that small doses of an iodide provoke symptoms of intoxication after the lapse of some days and that these milder symptoms subside when the drug is pushed and larger doses are given. The severer symptoms are rarely met with excepting after more prolonged use of the drug and its administration in comparatively large doses. In a case reported by Robinson the patient suffered with mild symptoms after six doses of one grain each of iodide of potassium, and a few days later, the same doses being continued, purpura developed. In another case reported by Fox, violent symptoms appeared after the administration of ten grains of potassium iodide. On the whole, however, the statement made above that severe symptoms rarely develop until larger amounts of the drug have been ingested is borne out by experience.

In acute poisoning by iodine, symptoms indicative of a violent toxic gastro-enteritis are met with. Among the peculiar accompanying symptoms are a metallic taste in the mouth and an increased flow of saliva, rapidity of the pulse out of proportion to the gastro-enteric disease, and partial or complete suppression of urine. In chronic poisoning or iodism there may be some of these symptoms in milder form. A peculiar metallic taste in the mouth, slight swelling and redness of the gums, and later a well-marked gingivitis, increased flow of saliva and disturbances of the stomach and bowels are met with. On examination of the mouth there may be found a brilliant red line on the gums at their junction with the teeth, or, in later stages, a necrotic or ulcerated appearance of the gums. The breath in these cases is apt to be heavy, though not nearly so offensive as in mercurialization. Slight swelling of the parotid gland and less frequently of the other salivary glands and of the submaxillary lymphatic glands may be met with. Coryza and irritation of the eyes are frequent early symptoms and an acneiform eruption of the skin is quite characteristic. This acne generally presents a more inflammatory appearance than ordinary acne and is in my experience apt to occur in a clustered form, several spots being closely grouped together. This arrangement, however, is by no means invariable. The eruption comes on gradually or, less frequently, abruptly. It may persist for some time without other symptoms of iodism, but as a rule soon ushers in more serious symptoms. Later, pharyngitis and bronchial irritation and various forms of eruptions on the skin occur. Among the last named, vesicles, bullæ, and purpuric spots are of most interest. In many cases reported in the literature a well-marked purpura hæmorrhagica occurred. Sometimes this developed after small doses of iodine; in most cases, however, the amount ingested was considerable. The petechiæ generally occur on the lower extremities first, but later involve all parts of the body; and hemorrhages from the mouth, nose, stomach, or other mucous membranes frequently accompany the eruption. The hemorrhagic eruption may consist of merely small petechiæ or may in other cases take the form of hemorrhagic vesicles or considerable suffusions. Sometimes the lesions are confined to the parts of the extremities near the joints and may, as in a case reported by myself, be attended with swelling of the joints, giving the whole case the appearance of the disease known as purpura rheumatica. In these cases pain in the extremities may occur, but as a rule the eruption of iodism is entirely painless and free from all other sensations.

Fig. 2951.—Iodic Purpura Simulating Purpura Rheumatica. (Stengel, in *Therapeutic Gazette*, 1902.)

In some instances there is a special tendency to this form of iodism, and cases have been reported of patients who repeatedly suffered symptoms of this kind on every attempt to renew the administration of iodides. Occasionally iodism is attended with fever; in most cases this symptom appears to be wanting.

Nervous and vascular symptoms sometimes predominate; thus headaches and neuralgic pains, tremor or twitchings of the muscles, and a state of profound asthenia may be met with. It is reported also that loss of vision and paralysis occur in some cases. A peculiar syndrome has been discussed by recent authors as being the occasional result of medication with iodine; it suggests the symptoms of exophthalmic goitre.

In these cases the patient has great rapidity of the heart's action with a sense of intense palpitation. There are muscular tremor, more or less pronounced dyspnœa, and a relaxed condition of the skin, and sometimes the clinical picture is completed by the development of exophthalmos. These cases are especially interesting from the fact that according to many, Graves' disease is due to excessive thyroidal secretion, and the latter is known to contain notable proportions of iodine.

In cases of iodism following the local use of iodoform, in addition to a dermatitis, there are marked rapidity and

weakness of the heart's action and great constitutional depression. The temperature is sometimes quite high. When the erythema or dermatitis is extensive, there may be difficulty in distinguishing the symptoms from those of scarlet fever, particularly if, as sometimes happens, vomiting and gastro-intestinal symptoms mark the beginning of the attack. In certain cases when the poisoning has developed slowly, the disease takes on a cachectic form and is marked by gradual wasting with loss of subcutaneous fat causing a wrinkled, withered appearance of the skin. Combined with this there are great muscular weakness and nervous depression, a tendency to dyspnœa, and rapidity of action of the heart. The appearance of the patients suggests a profound anæmia or cachexia.

Among late results of iodine intoxication, atrophy of the mammary glands and testicles has been noted.

Alfred Stengel.

IODOFORM.—Iodoform, chemically *triiodomethane*, or *methenyl iodide*, CHI_3, is official in the United States Pharmacopœa as *Iodoformum*, Iodoform. It is prepared in a variety of ways, in which the essential reaction is between alcohol and free iodine with the resulting formation of iodoform. Iodoform occurs in "small, lemon-yellow, lustrous crystals of the hexagonal system, having a peculiar, very penetrating, and persistent odor, somewhat resembling that of saffron and iodine, and an unpleasant, slightly sweetish, and iodine-like taste. Specific gravity, 2.000 at 15° C. (59° F.). Very slightly soluble in water, to which it, however, imparts its odor and taste. Soluble in about 52 parts of alcohol at 15° C. (59° F.), in about 12 parts of boiling alcohol, and in 5.2 parts of ether. Very soluble in chloroform, benzin, and fixed and volatile oils" (U. S. P.). Iodoform volatilizes somewhat even at ordinary temperatures, and on heating first melts to a brown liquid, and then gives off iodine vapors, with a residual carbonaceous mass, which finally is wholly dissipated. Iodoform should be kept in well-stoppered bottles in a cool place. The *odor* is peculiar not only in quality, but also in the fact that it is very penetrating and persistent, and that a very little of the substance will develop the smell in full strength. To many persons the odor is positively offensive, while to others it is quite unobjectionable. Concerning the solubilities of iodoform, it should be noted that a very common text-book error is the unqualified statement that the substance is "soluble in alcohol," leading to the inference that it is freely so, whereas, as a matter of fact, it is but sparingly soluble in cold, and only moderately soluble in boiling, alcohol (see above).

Locally, iodoform tends to benumb, to repress suppuration and other unhealthy action, and to promote healing. In tuberculous disease, as in cases of tuberculous abscess, the latter effect is marked. This healing virtue of iodoform probably results partly from absorption by the powder of the juices of the exposed part, and from mechanical protection, and partly from the action of free iodine liberated through decomposition of the iodoform. Such decomposition readily occurs when iodoform meets with alkaloidal or albuminous fluids. Formerly the virtues were thought to be due to a germicidal action, but it is now shown that iodoform as such has little or no direct power either to kill pathogenic micro-organisms or to hinder their development.

Iodoform can be absorbed into the system, not very readily from the stomach, but quite so from fresh wound surfaces, and in such cases a certain amount, at least, enters the blood unchanged. It is excreted mainly by the kidneys and in the form of iodides, but also is to be found in the saliva, the bronchial mucus, and the perspiration. Swallowed in quantities of from 0.30 to 0.40 gm. (gr. v. or vi.), it is harmless, but when extensively applied to absorbent wound surfaces it is capable of producing serious and even fatal constitutional poisoning (see *Iodoform.* [*Toxicological.*]).

Iodoform has been tried as an internal medicine in the place of the alkaline iodides, especially in syphilis, but without striking results. The dose is from 0.06 to 0.20 gm. (gr. i. to iij.) three times a day, preferably in pill, in order that the odor may be concealed. Externally, iodoform is a good anodyne application to painful surface affections of all kinds, and is specifically healing, especially in syphilitic lesions and in local tuberculous affections. Also it makes an excellent dressing for wound surfaces, and is accordingly extensively used by the operating surgeon. It may be applied dry (finely pulverized, so as to obviate the mechanical irritation by the edges of the crystals), by dusting from a dredger, and then covering the dressed surface with cheese-cloth, lint, or absorbent cotton; or an iodoformized gauze may be used. Such gauze may be prepared by rubbing powdered iodoform into the meshes of the material, or the latter may be soaked in an ethereal solution of iodoform which, by drying, leaves a fine powder of the drug evenly diffused through the texture of the fabric. Care should be taken not to risk poisoning by packing considerable quantities in tightly closed wound or abscess cavities. As a healing dressing, the official preparation may be used, entitled *Unguentum Iodoformi*, Iodoform Ointment, which consists of iodoform, ten per cent., thoroughly incorporated with benzoinated lard. In the local treatment of tuberculous abscesses a ten-per-cent. emulsion in sterilized oil or in glycerin has been much used. The abscess is first properly evacuated, then cleansed by a weak carbolic or boric-acid wash, and then injected with a few fluid-drachms of the iodoform emulsion, and the cavity closed. Such treatment may be repeated every few days. These same emulsions have also been injected into the substance of tuberculous glands which have not undergone suppuration. To mask the diffusive and persistent *smell* of iodoform, the addition of a great many substances has been proposed, of which substances some, such as the Tonka bean and the more powerfully odorous of the volatile oils, simply overwhelm the smell of iodoform with their own odor, and are hence unobjectionable. A bit of Tonka bean may be kept in the iodoform bottle, or one part of oil of bergamot, peppermint, spearmint, or gaultheria may be added to twenty parts of iodoform (Hager). Tannic acid and balsam of tolu, two substances suggested for the present purpose, act by chemical attack upon the iodoform, and hence are not to be recommended.

Because of the offensive smell of iodoform and the occasional poisoning by the medicine, many substitutes have been sought in related compounds. Of these the following deserve mention:

Iodol, tetraidopyrrol, C_4I_4NH. This compound forms by the action of iodine on pyrrol, and occurs as a yellowish-brown, crystalline powder, without taste or smell, insoluble in water, but soluble in alcohol and, though less readily, in ether, chloroform, and the fixed oils. It contains 88.9 per cent. of iodine.

Iodol, though insoluble in water, is capable of absorption by the living animal tissues, and so produces constitutional effects on administration by the mouth. In experiments on animals it has caused emaciation and albuminuria, with muscular weakness and lowering of temperature, and, finally, death from fatty degeneration of the kidneys and liver. Constitutional effects have followed also the local use of the compound in surgery, but, owing to the comparative slowness of absorption of iodol, it is less apt to produce untoward effects than is the case with iodoform.

Iodol is available for all the uses of iodoform. It may be applied locally in powder or in alcoholic solution. A collodion preparation of iodol may be made by dissolving one part of iodol and five of guncotton in ten parts of ether.

Iodol has been given internally in diabetes and in tertiary syphilis, in doses of from 0.13 to 0.19 gm. (gr. ij.–iij.). It is not official in the United States Pharmacopœia (1890).

Losophan, triiodometacresol, $C_6HI_3(OH)(CH_3)$. This substance, a compound of iodine and cresol, occurs in colorless needles, odorless, insoluble in water and nearly so in alcohol, but freely soluble in ether, chloroform, and

the fixed oils. The crystals contain 78.39 parts of iodine and melt at 121.5° C. (250.5° F.).

Unlike iodoform, losophan does not yield free iodine on contact with the animal tissues, and so cannot truly substitute iodoform in medical practice. It has been used as a local antiseptic, but with questionable advantage. It may be applied in a one- or two-per-cent. solution in alcohol and water (alcohol three parts, water one part), or in an ointment of from one- to ten-per-cent. strength, with basis of vaseline or a mixture of vaseline one part, and lanolin four parts.

Losophan is not official.

Nosophen, tetraiodophenolphthalein, $(C_6H_2I_2.OH)_2$. $C<^{C_6H_4CO}_{O}$. This compound, behaving as an acid, occurs as an impalpable, pale yellowish powder, odorless and tasteless, insoluble in water and difficultly so in alcohol, ether, and chloroform, but soluble in alkalies, with which substances it combines to form salts. Nosophen contains 61.7 per cent. of iodine.

Like losophan, nosophen does not yield iodine on contact with the animal tissues. It has been used, however, for the purposes of iodoform, and is unirritating and non-poisonous. It may be applied freely in its powder form.

The sodium salt of nosophen has been used in medicine under the name of *antinosine*. This salt occurs as a dark blue amorphous powder, and is freely soluble in both water and alcohol. It may be used for local antiseptic purposes in solutions varying in strength from one to three per cent., which solutions are without odor or taste.

The bismuth salt also has been used under the name of *eudoxine*. This substance is a reddish-yellow powder, tasteless and odorless, and insoluble in water. It is decomposed by alkalies with the formation of antinosine. It has been given internally, for gastro-intestinal derangements, in doses of from 0.03 to 0.50 gm. (gr. ss.–viij.), and is assumed to undergo conversion into antinosine by the action of the alkalies in the intestinal fluids.

Nosophen is not official.

For *europhen*, see article under its own title.

Edward Curtis.

IODOFORM. (TOXICOLOGICAL.)—In 1880 Mosetig von Moorhof introduced iodoform as a surgical dressing. Since that time it has been largely used by surgeons not only as a dressing, but also (in solution) for injection into chronic abscesses, tuberculous joints, etc. In many cases grave symptoms have supervened; sometimes followed by recovery, occasionally by death. Such cases have been steadily reported since 1882, but now there seems to be a lull, probably owing to the fact that iodoform is not in such general use as formerly.

Cases have been reported of which we may mention: (1) A series of four, all of which ended in recovery, described by Marcus Beck, of London (*Brit. Med. Journal*, 1882, i., p. 903). (2) Barois (*Archiv. de Méd. et de Pharm. Milit.*, 1890) has collected a series of forty-two fatal cases, and adds one of his own; the remarkable point in this series is that there is only one case of an American surgeon, viz., that of Dr. Sands, in 1881, in which about one and a half drachms were used in dressing after colotomy for cancer of the rectum. (3) Andry's series of four (*Lyon Médical*, 1890), one of which proved fatal. (4) Gerlach's series of four cases, all of which terminated in recovery (*Medical News*, Philadelphia, 1891, p. 273).

Iodoform is generally applied either (1) pure, as a powder, (2) combined with collodion, (3) dissolved in ether, (4) incorporated with gauze, or (5) as an emulsion in glycerin or oil. Of these the iodoform gauze is probably the safest. An alkali added to the iodoform is said to render it less toxic. When iodoform is used, mercurials and carbolic acid should be avoided. Iodoform is quickly absorbed and slowly eliminated; clean, granulating wounds, large surfaces, fatty tissues, burns, sinuses, fistulæ, and abscess cavities are particularly favorable for the absorption of iodoform.

Toxic Dose.—The smallest dose known to have produced *toxic* symptoms is less than one grain. This was a case reported by Dr. Tiffany, of Kansas City (*St. Louis Med. and Surg. Journ.*, xxxviii., 562), in which a fraction of a grain of iodoform was applied to the tympanum through the external auditory meatus. The patient, a woman, who had an idiosyncrasy to the drug, suffered from inflammation, swelling, and erysipelas; recovery followed on withdrawal of the drug. The smallest *fatal* dose is probably about forty-five grains. The case, which is reported by Barois (see above), was one of large cold abscess under the left pectoralis major; an injection of about fifty-five grams of a five-per-cent. ethereal solution was used; symptoms of ether narcosis immediately followed, then symptoms of iodoform poisoning, chiefly cerebral, and death in coma after nine days. Fatal results from doses of one drachm and upward have been reported. But, on the other hand, a case has been recorded in which a woman took two drachms of iodoform at a single dose, with no worse result than severe headache, griping pains in the abdomen, and purging; but the odor and taste of the drug remained for several days.

It must be borne in mind (1) that many toxic effects may have been due to impurities in the drug; (2) that some people are particularly susceptible to iodoform, and many cases of iodoform poisoning are due to idiosyncrasy; (3) that iodoform seems particularly dangerous in wounds and injuries of the breast, axillary space, and chest wall, and therefore great care should be taken in using the drug in these regions.

Symptoms.—The cause of the toxic symptoms is the iodine. Iodoform (CHI_3), which contains more than ninety-six and one-half per cent. of iodine, is decomposed by the tissues with which it comes in contact, and iodine is liberated. This free iodine promptly combines with the albumin of the tissues, and the result is an unstable albuminate of iodine, which passes into the circulation and thence to the various organs of the body.

Schede, of Hamburg, describes six classes of cases of poisoning by iodoform: "(1) High fever without other phenomena. (2) Fever, with mild gastro-intestinal irritation, depression of spirits, and rapid pulse; recovery almost invariable. (3) Very rapid, soft pulse, from 150 to 180; no fever; great danger. (4) Very rapid pulse with high fever; death almost invariable. (5) After severe operations, rapid collapse and death. (6) A form resembling meningitis, somnolence followed by stupor; contracted, motionless pupils; restlessness, temperature normal, and pulse exceedingly rapid; most characteristic and severe" (from H. C. Wood's "Therapeutics").

We prefer a simpler classification: 1. Local or cutaneous or eruptive. 2. General or constitutional: (*a*) with cerebral symptoms; (*b*) with coma.

1. *Local, Cutaneous, or Eruptive.*—This is the commonest form and generally follows the application of iodoform as a dressing. There is a dermatitis of an erythematous type, or an eczematous eruption. The part is swollen and is covered by many small thick-walled vesicles. These vesicles become confluent and are filled with a serous fluid which may later become tinged with blood. The epidermis is at first raised; later it peels off, and leaves an exposed area of very sensitive corium bathed in a serous exudate.

2. *General or Constitutional* (*a*) *with Cerebral Symptoms.*—This may occur some time after the application or injection of the iodoform, or almost immediately. The symptoms are the odor of iodoform in the breath; yellow discoloration of the skin and conjunctivæ; increase of temperature; pulse small, irregular, and rapid (up to 160 or 180); faintness, vertigo, severe headache, thirst, nausea, vomiting, gastro-intestinal irritation, muscular twitchings; the patient becomes melancholic and has delusions of persecution and possibly suicidal tendencies, hence must be carefully watched; there is maniacal excitement, which may subside on removal of the dressing. "There is nothing specific in iodoform mania; it may occur with the first dressing, or it may result from its prolonged use; it gives rise to restlessness, to sleeplessness, to irritability passing into mania, and the mania may rapidly give place to stupor or mental weakness" (Dr. Savage, in Allbutt's "System of Medicine," vol. viii., 315). Barois found in severe cases that the symptoms came on suddenly and early; first mental depression, then excitement.

(*b*) *With Coma.*—This is the most severe form. The pulse is rapid and feeble; there is rigidity of the neck, as in meningitis; great mental confusion with misplacing of words; there may be paralysis of the sphincters; the patient becomes emaciated, lethargic, and falls into a state of coma and dies.

Death occurs from paralysis of the heart. Age increases the susceptibility of most persons to the action of the drug. Tuberculous and cachectic patients are said to give worse results than others; but probably iodoform is more often administered to these patients than to others.

Pathology.—The post-mortem findings are fatty degeneration of the heart, liver, kidneys, and muscles; hyperæmia of the meninges and some atheromatous lesions of the arteries. Barois found occasionally a partial infiltration of the lungs, with degeneration of the alveolar epithelium.

Prognosis.—This is bad. It probably depends upon idiosyncrasy as well as dose.

Prophylaxis.—Get a pure preparation of the drug; use as small an amount as possible; remember idiosyncrasy; be particularly cautious in wounds of the breast, chest walls, and axillary space.

Treatment.—In every case stop the application of further iodoform; then keep up the patient's strength and remove as much as possible of the drug with water, a warm solution of starch, oil of eucalyptus, or ether and cotton; and give diuretics, diaphoretics, and a hot bath to hasten elimination. In a case reported by Dreesmann, of Bonn (*Beitr. zur klin. Chir.*, v., 9, p. 233), hypodermic injections of twenty-per-cent. solution of iodoform oil were repeatedly given for white swelling of the knee; neurotic symptoms followed, and on resection of the knee a mass of iodoform the size of a cherry was found just above the condyles; the neurosis ceased on the removal of this. Apply dressings of decinormal salt solution, snip off the top of any vesicles that may be present, so that the solution may reach the corium underneath; locally apply some non-irritating alkaline fluid to neutralize the nascent iodine, and thus prevent its entering into combination with the albumins. Give stimulants, and to increase the alkalinity of the blood administer potassium acetate, potassium bicarbonate, or potassium bromide; this latter is recommended, and may be administered in an initial dose of gr. xv. in ʒ ij. of water, followed by gr. x. every hour.

R. J. E. Scott.

IODOGALLICIN is an iodine compound of gallicin (see *Gallicin*), and is a gray amorphous powder which is insoluble in all ordinary media. It contains 38 per cent. of bismuth and 23.6 per cent. of iodine. It is antiseptic, locally anæsthetic, and desiccating, and may be applied in powder or in five-per-cent. lanolin ointment for wounds, ulcers, trachoma, and corneal ulcers.

W. A. Bastedo.

IODOL.—Tetra-iodo-pyrrol, C_4I_4NH. This compound of iodine may be prepared by dissolving pyrrol in alkaline water and mixing it with a solution of iodine in iodide of potassium. The precipitate is collected, dissolved in alcohol, and reprecipitated. It is also obtained by the reaction that takes place when alcoholic solutions of pyrrol and iodine are mixed for twenty-four hours. Iodol separates when the mixture is added to water.

It is a pale yellow, finely crystalline powder. It is without taste and does not possess any disagreeable odor. It is insoluble in water, and very slightly soluble in dilute alcohol. Strong alcohol dissolves one part in six; glycerin, one part in thirty-four. Iodol is very soluble in ether and chloroform. It contains about ninety per cent. of iodine. Heated to 140° or 150° C. it is decomposed with the evolution of violet iodine vapors.

Iodol was introduced in 1885 by Ciamician and Silber, as a substitute for iodoform, its freedom from any disagreeable odor being a decided advantage. Like iodoform it does not rank high as a germicide, but it has the same power of inhibiting the growth of bacteria and maintaining a surface clean and aseptic. To wounds, ulcers, and all suppurating surfaces it is applied in the same manner as iodoform, by dusting the powder on the part or making it into an ointment with lanolin or vaselin. It may also be used in solution of alcohol, ether, or collodion. Ether 5 parts, collodion 50 parts, iodol 1 part is a favorite combination for local application. For gynæcological purposes a solution of iodol, spirits, and glycerin, 1 to 16–34, may be used for saturating tampons, etc. Its local use has been highly recommended for ulcerations of the nose, pharynx, and larynx, particularly when due to a tuberculous or syphilitic cause.

Iodol has been employed internally with success in conditions of the stomach and intestines accompanied by putrefactive and fermentative changes. It has been used with success in gastro-intestinal catarrh and ulceration of the mucous membrane. When its action is directed to the stomach it should be given in the intervals between meals; when it is desired to act on the intestinal canal, the most favorable time for its administration is immediately at the close of the digestive process. As its constituent iodine is excreted in part by the pulmonary organs, it has been used in bronchitis, phthisis, and various diseases of this locality. In these conditions, in addition to its internal administration, inhalations and insufflations have been used. In syphilis it is also recommended, especially in tertiary forms of the disease in which it has given the best results. It is well borne by the system, having no effect on the temperature, circulation, or respiration; iodism is of very rare occurrence. It is also thought to be of benefit in diabetes. The dose is from one to three grains, two or three times a day; it should be given in wafers or pill form.

Beaumont Small.

IODOMUTH ($Bi_4C_7H_7I_2O_5$) is a bismuth iodine compound, used as a dusting powder for wounds, ulcers, etc. It has been given internally as an alterative in dose of gm. 0.06–0.6 (gr. $\frac{1}{10}$–i.).

W. A. Bastedo.

IODONAFTAN is a naphtha ointment base containing three per cent. of iodine. It is a very smooth, stable ointment of pleasant odor. It is blackish-brown in color, appearing dark green by transmitted light.

W. A. Bastedo.

IODONAPHTOL - BETA. — Naphtol-beta di-iodide. Also termed Naphtol-aristol. This derivative of iodine was introduced by Dr. Braille (*Répert. de Phar.*, November 10th, 1891) as a substitute for iodoform, aristol, and other iodine compounds. It is prepared by mixing a solution containing 24 gm. of iodine and 27 gm. of potassium iodide with another solution containing 110 gm. of naphtol-beta and 40 gm. of caustic soda. There is then added a little solution of the hypochlorite of sodium corresponding to ten times its volume of chlorine. Iodonaphtol is then precipitated. It is a greenish-yellow powder, inodorous, tasteless, insoluble in water, very slightly soluble in alcohol, but soluble in ether and chloroform.

It is recommended for the treatment of wounds, ulcers, and all conditions in which iodoform and other antiseptics are employed. It is applied as a powder dusted on the part affected.

Beaumont Small.

IODOPHENIN.—Iodophenacetin. This compound of iodine and phenacetin was described by Dr. Scholvein, in 1891, at a meeting of the Berlin Pharmaceutical Society. It contains fifty per cent. of iodine and forms in steel-blue crystals, with an odor of iodine, and a burning taste; it colors the skin yellow. It is insoluble in water, soluble in alcohol and glacial acetic acid. Heated, or even when mixed with water, it is decomposed and iodine is set free.

It is recommended as a useful antiseptic, and experi-