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CHAP. XXV.

LINIMENTA, UNGUENTA ET CERATA.—LINIMENTS, OINT-MENTS, AND CERATES.

THESE are compositions of a soft consistence, having some unctuous substance for their basis, such as oil, lard, spermaceti or wax. When the consistence is so soft as to be thick, but nearly fluid, it is termed a Liniment; when it is more firm, it is an Ointment; and when still harder, it forms a Cerate. It is evident that these different degrees of consistence depend on the proportions of the ingredients. Where the oil is in large quantity, a liniment is formed, and the addition to this of a larger proportion of wax forms an ointment or cerate. The following general directions are given in the Edinburgh Pharmacopæia for their preparation. "In making these compositions, fatty and resinous substances are to be melted with a gentle heat, stirring them constantly, sprinkling in at the same time the dry ingredients, if there are any, reduced to a very fine powder, until the mixture, by cooling, become firm." In general, it is better to melt them by the heat of a water bath, than by the direct application of fire to the vessel.

Formerly ointments were numerous and complicated in their composition, and surgeons adapted, with much formality, different ointments to answer different indications. The practice is now more simple; the principal intention in these applications is to keep the parts soft and easy, and to exclude the atmospheric air, and therefore the simplest composition that is of a proper consistence and tenacity answers the purpose. It is only in a few cases that certain substances are added to these simple compositions, with the view of obtaining peculiar effects from their stimulant, or sometimes their specific operation, or from their chemical action. The consistence of a cerate is usually the most convenient, at least for continued application, that of an ointment being rather too thin, especially when it is rendered thinner by the heat of the part applied.

LINIMENTUM AQUÆ CALCIS, sive Oleum Lini cum Calce. Liniment of Lime Water, or Oil of Lintseed with Lime. (Linimentum Calcis, Ph. Dub.)

"Take of Oil of Lintseed, Lime Water, of each equal parts. Mix them."

This is a saponaceous compound, formed by the mutual chemical action of the lime-water and oil. It is a thick bland fluid of a white colour, and is sometimes used as a soothing application to inflamed parts; more particularly to burns, being spread over the surface with a feather. It requires to be extemporaneously prepared, as after a little time the soapy matter separates from the water.

LINIMENTUM SIMPLEX. Simple Liniment.

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" Take of Olive Oil, four parts; White Wax, one part."

UNGUENTUM SIMPLEX. Simple Ointment.

"Take of Olive Oil, five parts; White Wax, twe

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CERATUM SIMPLEX. Simple Cerate.

"Take of Olive Oil, six parts; White Wax, three parts; Spermaceti, one part."

These compositions differ merely in consistence. They are applied, spread on linen, as usual dressings to slight wounds and excoriations. The cerate affords the composition, which, from consistence, is best adapted to this. The following compositions, in the London and Dublin Pharmacopæias, are nearly the same, and are designed for the same purposes.

UNGUENTUM CETACEI, Ph. Lond.

UNGUENTUM SPERMATIS CETI, Ph. Dub. Spermaceti Ointment.

The former consists of Spermaceti, six drachms; White Wax, two drachms; Olive Oil, three fluidounces: the latter, of White Wax, half a pound; Spermaceti, one pound; Prepared Lard, three pounds.

CERATUM CETACEI, Spermaceti Cerate, Ph. Lond.—
is composed of half an ounce of Spermaceti; two ounces
of White Wax; and four fluidounces of Olive Oil; and
hence differs merely in consistence.

CERATUM. Cerate. Ph. Lond.—This consists of four sunces of Yellow Wax; and four fluidounces of Olive Oil.

UNGUENTUM CERÆ FLAVÆ, Ointment of Yellow Wax, Ph. Dub.—is formed from one pound of Purified Yellow Wax; and four pounds of Prepared Lard.

UNGUENTUM CERÆ ALBÆ, Ointment of White Wax, Ph. Dub.—is the same composition with the substitution of White for Yellow Wax.

UNGUENTUM RESINOSUM. Resinous Ointment. (Unguentum Resinæ Albæ, Ph. Dub.—Ceratum Resinæ, Ph. Lond.)

"Take of Hogs Lard, eight parts; White Resin, five parts; Yellow Wax, two parts." In the London Pharmacopocia, a pound of resin and a pound of wax are melted with a pint of olive oil.

The addition of the resin renders this considerably more stimulating than the preceding ointments. Hence it is used as a dressing where the object is to promote suppuration.

UNGUENTUM PULYERIS MELOES VESICATORII, olim Unguentum Epispasticum fortius. Ointment of the Powder of Cantharides. (Unguentum Cantharidis, Ph. Dub.—Geratum Lyttæ, Ph. Lond.)

"Take of Resinous Ointment, seven parts; Powder of Cantharides, one part."

This is the ointment commonly employed to establish a purulent discharge, or form a superficial issue in the part to which a blister has been applied; this it does from the acrid and stimulating quality of the cantharides, which quickly changes the serous discharge from the blister into one of a purulent nature, and by continuing the application, this may be kept up for any length of time. In preparing it, the cantharides ought to be reduced to a very fine powder.

Unguentum infusi meloes vesicatorii, olim Unguentum Epispasticum mitius. Ointment of Infusion of Cantharides.

"Take of Cantharides, White Resin, Yellow Wax, of each one part; Venice Turpentine, Hogs Lard, of each two parts; Boiling Water, four parts. Macerate the cantharides in the water for a night, and strain the liquor, pressing it strongly; having added the lard, boil it until the water is evaporated; then add the wax and resin. These being melted and removed from the fire, add the turpentine."

The ointment with the powder of cantharides sometimes occasions too much pain and irritation. The composition obtained by this process is designed as a milder application, adapted in such cases to answer the same indication. The water, by infusion on the cantharides, extracts the acrid matter, but this, from being in a state of solution, is, after the subsequent evaporation, diffused through the unctuous matter in a state of finer division

than the powder can be. It is also from the proportions ordered, in smaller quantity, but its stimulating quality is aided by the turpentine, and it is still sufficiently so to keep up the purulent discharge.

UNGUENTUM SUB-ACETITIS CUPRI, olim Unguentum Æruginis. Ointment of Sub-Acetite of Copper, or Verdigris. (Unguentum Æruginis, Ph. Dub.)

"Take of Resinous Ointment, fifteen parts; Sub-Acetite of Copper, one part."

This ointment is used as a stimulant and escharotic, applied to foul ulcers. It is rather too active, and in general requires to be mixed with an additional proportion of resinous or simple ointment; nor is it used but as an occasional dressing.

Unguentum Hydrargyri, vulgo Unguentum Cæruleum.
Ointment of Quicksilver.

"Take of Quicksilver, Mutton Suet, of each one part; Hogs Lard, three parts. Rub the quicksilver thoroughly in a mortar with a little of the lard, until the globules disappear; then add the remaining fats. It may be made also with a double or triple proportion of quicksilver."

Unguentum Hydrargyri Fortius. Stronger Ointment of Quicksilver. Ph. Lond.—(Unguentum Hydrargyri, Ph. Dub.)

" Take of Purified Quicksilver, two pounds; Prepa-

red Hogs Lard, twenty-three ounces; Prepared Tallow, one ounce. Rub first the quicksilver with the tallow and a little lard, until the globules disappear; then add the remaining lard, and mix them." In the Dublin Pharmacopæia, equal weights of quicksilver and lard are directed to be rubbed together, until the globules are no longer visible."

UNGUENTUM HYDRARGYRI MITIUS. Milder Ointment of Quicksilver. Ph. Lond. Dub.

"Take of the Stronger Ointment of Quicksilver, one part; Prepared Hogs Lard, two parts. Mix them." The ointment under the same name in the Dublin Pharmacopæia is ordered to be prepared in the same manner as the stronger ointment, using a proportion of lard, double that of the quicksilver.

Of these ointments, the one always employed for mercurial friction is that formed from equal weights of quicksilver and lard. The only use of the lard is to facilitate the extinction, as it is called, of the quicksilver, and the introduction of it through the cuticle: these purposes are perfectly attained from this proportion, and any larger quantity of unctuous matter merely weakens it, and renders it necessary to continue the friction longer. The proportion of one part of quicksilver to four of unctuous matter, ordered in the Edinburgh Pharmacopoxia, gives an ointment weaker than any that is ever used or kept in the shops. The ointments of the strength ordered in the other Pharmacopoxias are those in common use.

This, like other mercurial preparations obtained by trituration, was at one time regarded as deriving its efficacy from the mere mechanical division of the metal. The reasons have been already stated for believing, that in all these preparations the mercury is oxidated, and that their action on the living system depends on this oxide. There are even additional grounds for admitting this conclusion with regard to mercurial ointment. Unctuous matter appears in general to promote the oxidation of metals by the action of the air, as is exemplified in the green crust which copper speedily acquires when coated thinly with grease: quicksilver being in a fluid state, and the surface being extended and renewed by the trituration, these circumstances are still more favourable to the same change being effected more speedily. The improvement of the ointment from keeping, affords a similar presumptive proof. The ointment is, when newly prepared, of a light bluish grey colour, but when kept for some time it becomes of a much darker colour, probably from the oxidation of the metal becoming more complete; and it has accordingly been found, that from ointment long prepared, less metallic quicksilver subsides, when it is kept liquid by the heat of a water bath, than from ointment newly prepared. Even from the latter, only part of the quicksilver subsides in globules; the remaining quantity is in the state of a grey powder, which there is every reason to conclude, is the grey oxide of the metal.

It has even been supposed, that the quicksilver in the preparation may suffer a farther change. Unctuous matter, and more especially that of animal origin, is known to become rancid from the action of the air, and this rancidity appears to be connected with the formation of an acid, probably the acid produced from fat, the Sebacic. This change may take place to a certain extent during the trituration, and still more when the ointment is long kept, and may promote the oxidation of the mercury, while any acid that is formed may combine with the oxide. According to this view, mercurial ointment will consist of unctuous matter, in which is diffused oxide and sebate of mercury, with a portion generally of metallic mercury, its activity, of course, depending on the former.

The extinction of the mercurial globules by trituration being rather a laborious process, several expedients have been contrived to facilitate it. Several of these are inadmissible, such as the use of sulphur or turpentine. In the ointment prepared with the former, the mercury is probably not in an active state; it is known by its deep black colour, and by the smell of sulphur exhaled when paper covered with it is kindled. Turpentine renders the ointment too acrid, so that when applied by friction it produces irritation on the skin or inflammation; it also can be detected by the odour exhaled in burning. Rancid fat, it has been found, extinguishes the quicksilver better than recent fat, and may be allowed, as by the action of the metal the rancidity of the fat appears to be corrected. The trituration should always be made at first with a little tallow, as lard does not oppose sufficient resistance to afford all the assistance that may be derived from

the interposed matter, in facilitating the mechanical divi-

Mercurial ointment is the form under which mercury is introduced into the system by external friction. It is a mode employed with advantage in cases where the preparations administered internally are liable to be too much determined to the intestines, so as to occasion griping or purging, or when it is necessary to introduce a large quantity of mercury speedily into the system; the general mercurial action being thus soon induced. It is likewise sometimes employed in some local affections, particularly bubo. One drachm of the strong ointment (that containing equal parts of mercury and lard) is introduced by friction on the skin in the evening, and frequently also in the morning, until the system is affected, the part on which the ointment is rubbed being occasionally changed to avoid irritation or inflammation. The weaker ointments ought not to be employed, as they merely give unnecessary trouble, by the necessity of rubbing in so much lard.

UNGUENTUM OXIDI HYDRARGYRI CINEREI. Ointment of Grey Oxide of Quicksilver.

"Take of Grey Oxide of Quicksilver, one part; Hogs Lard, three parts."

This is designed as a substitute for the mercurial ointment, and, as the quicksilver is fully oxidated, it has been supposed that it will prove more active and certain. It probably would have this advantage; but it has been said, that it is not easily introduced by friction, the unctuous matter passing through the cuticle without the whole of the oxide,—a difference which, if it do exist, must depend on the combination being less intimate.

UNGUENTUM OXIDI HYDRARGYRI RUBRI. Ointment of Red Oxide of Quicksilver. (Unguentum Hydrargyri Nitrico-oxydi, Ph. Lond.—Unguentum Sub-nitratis Hydrargyri, Ph. Dub.)

"Take of Red Oxide of Quicksilver by Nitric Acid, one part; Hogs Lard, eight parts."

This is applied as a mild escharotic to remove the diseased surface of ulcers, and as a stimulant to promote suppuration; and in cases of languid ulceration and chronic inflammation is often used with much advantage. Care ought to be taken in its preparation, that the mercurial preparation is reduced to a very fine powder. It ought also to be prepared only when it is to be used, or at least ought not to be long kept, as the mercurial oxide or rather sub-nitrate soon undergoes decomposition, which is indicated by the colour changing from a bright red to a grey.

Unguentum Citrinum. Stronger Ointment of Nitrate of Quicksilver. (Unguentum Hydrargyri Nitratis, Ph. Lond.—Unguentum Super-nitratis Hydrargyri, Ph. Dub.)

" Take of Purified Quicksilver, one part; Nitrous

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Acid, two parts; Olive Oil, nine parts; Hogs Lard, three parts. Dissolve the quicksilver in the acid; then beat up the solution strongly with the lard and oil previously melted together, and beginning to cool, in a glass mortar, so as to form an ointment."

In this ointment the nitrate of quicksilver is combined with the lard; and as there is also an excess of nitric acid, it acts chemically on the fat, and, notwithstanding the quantity of oil used, gives to the composition a firm consistence. It forms a very excellent application in various forms of chronic inflammation, such, for example, as psorophthalmia, and in different kinds of cutaneous eruption, herpetic, or connected with superficial inflammation or ulceration. It is either rubbed gently on the part affected, or where this would produce irritation, it is applied, softened by heat, by a hair pencil.

Unguentum nitratis hydrargyri mitius. Milder Ointment of Nitrate of Quicksilver.

"This is made in the same manner as the preceding, with a triple proportion of lard and oil."

This is designed to afford an application milder than the former, and also of a softer consistence; but, to obtain the latter convenience, it is better to reduce the strong ointment with the requisite proportion of lard, when it is to be used, as, from the operation of the acid, the milder ointment, even with the increased proportion of unctuous matter, is nearly equally firm as the stronger ointment. Unguentum Acidi Nitrosi, Ph. Dub.)

"Take of Hogs Lard, one pound; Nitrous Acid, six drachms. Mix the acid gradually with the melted lard, and beat the mixture thoroughly while it cools."

In this preparation part of the acid is decomposed, and part of it is combined with the lard. It is designed as an application in cutaneous affections, and has been said to be similar in its effects to the preceding ointment. It appears, however, considerably inferior in efficacy, and since its first introduction it has been little used.

UNGUENTUM OXIDI PLUMBI ALBI. Ointment of White Oxide of Lead. (Unguentum Cerussæ sive Sub-acetatis Plumbi, Ph. Dub.)

"Take of Simple Ointment, five parts; White Oxide of Lead, one part."

This has been used principally as an application to burns and superficial inflammation.

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UNGUENTUM ACETITIS PLUMBI, vulgo Unguentum Saturninum. Ointment of Acetite of Lead. (Ceratum Plumbi Super-acetatis, Ph. Lond.—Unguentum Acetatis Plumbi, Ph. Dub.)

"Take of Simple Ointment, twenty parts; Acetite of Lead, one part."

The preparations of lead have been supposed to possess a specific power in abating inflammation by local application. They are usually applied under the form of solution; but where that of ointment is preferred, this composition has been considered as preferable to any other, as containing the most active preparation of lead. It is accordingly often used as a dressing to inflamed parts.

CERATUM PLUMBI COMPOSITUM. Compound Cerate of Lead. Ph. Lond.

"Take of Solution of Acetate of Lead, two fluidounces and a half; Yellow Wax, four ounces; Olive Oil, nine ounces; Camphor, half a drachm. Mix the wax melted, with eight fluidounces of the oil, then remove the mixture from the fire, and as soon as it begins to become thick, add gradually the solution of acetate of lead, and stir them constantly with a wooden spathula. Lastly, mix with these the camphor dissolved in the remaining oil."

A composition similar to this was introduced by Goulard, as a form of applying lead in ointment. It has been known by the name of Goulard's Cerate, and has been supposed preferable to the preceding ointment. It may derive some slight advantage as a soothing application to inflamed parts, from its soft consistence, and from the acetate of lead being diffused through it in a dissolved state.

CERATUM CARBONATIS ZINCI IMPURI, olim Ceratum Lapidis Calaminaris. Cerate of Impure Carbonate of Zinc. (Ceratum Calaminæ, Ph. Lond.—Unguentum Calaminaris, Ph. Dub.)

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"Take of Simple Cerate, five parts; Prepared Impure Carbonate of Zinc, one part."

This is the common healing cerate, Turner's Cerate as it has been named, which has long been used as a dressing to slight wounds, excoriations, and ulcers. It appears to act simply by excluding the air and keeping the surface to which it is applied soft; but it is preferable to the composition of wax and oil alone, from the levigated calamine giving a degree of consistence, which is not altered by the heat of the body.

Unguentum oxidi zinci impuri, olim Unguentum Tutiæ.
Tutia Ointment. (Unguentum Tutiæ, Ph. Dub.)

Take of Simple Liniment, five parts; Prepared Impure Oxide of Zinc, one part."

This has been used principally as an application in chronic ophthalmia, but it appears to have no particular virtue.

Unguentum Oxidi zinci. Ointment of Oxide of Zinc. (Unguentum Zinci, Ph. Lond.—Unguentum Oxidi Zinci, Ph. Dub.)

"Take of Simple Liniment, six parts; Oxide of Zinc, one part."

This was introduced as a substitute for the calamine cerate, oxide of zinc being supposed a purer substance than the calamine stone. Calamine, however, acts merely mechanically in the composition, and there is no advantage in the substitution of the more expensive oxide; hence this ointment is seldom used. Sometimes it has been applied in ophthalmia.

Unguentum Picis. Ointment of Tar. (Unguentum Picis Liquidæ, Ph. Lond. Dub.)

"Take of Tar, five parts; Yellow Wax, two parts." In the London and Dublin Pharmacopæias, the composition is equal weights of Tar and Tallow melted together.

This stimulating ointment is sometimes applied to foul ulcers, and has been used with advantage in tinea capitis.

UNGUENTUM PICIS ARIDÆ. Pitch Ointment. Ph. Lond.

"Take of Pitch, Yellow Wax, Yellow Resin, of each nine ounces; Olive Oil, a pint. Melt them together, and strain through linen."

This is applied to the same purposes as the preceding ointment, from which it differs a little in consistence, and in its smell being less strong.

Unguentum sulphuris. Ointment of Sulphur. (Unguentum Sulphuris, Ph. Lond. Dub.)

"Take of Hogs Lard, four parts; Sublimed Sulphur, one part. To each pound of this ointment, add of Essential Oil of Lemon, or Essential Oil of Lavender, half

a drachm." The essential oil, which is designed merely to cover the unpleasant smell of the sulphur, is not ordered in the London or Dublin Pharmacopæia.

Sulphur is applied under this form as a remedy in psora, the surface affected with the eruption being rubbed with the ointment.

Unguentum sulphuris compositum. Compound Sulphur Ointment. Ph. Lond.

"Take of Sublimed Sulphur, half a pound; Root of White Hellebore, in powder, two ounces; Nitrate of Potash, a drachm; Soft Soap, half a pound; Prepared Lard, a pound and a half."

White Hellebore root has been employed with advantage in psora, and this compound ointment may perhaps prove successful in cases where the simple sulphur ointment might be more slow in its operation or fail.

UNGUENTUM ELEMI COMPOSITUM. Compound Ointment of Elemi. Ph. Lond.

"Take of Elemi, one pound; Common Turpentine, ten ounces; Prepared Suet, two pounds; Olive Oil, two fluidounces. Melt the elemi with the suet, and having removed them from the fire, mix them immediately with the turpentine and oil; then strain through linen."

This ointment is moderately stimulating, somewhat similar to the resinous ointment, and is applied to the same

purpose, that of exciting suppuration from an ulcer. There is a similar composition in the Dublin Pharmacopæia, under the name of Unguentum Elemi, in which a pound of Elemi, half a pound of Wax, and four pounds of Lard are melted together.

UNGUENTUM SAMBUCI. Ointment of Elder. Ph. Lond. (Unguentum Sambuci, Ph. Dub.)

"Take of the Flowers of Elder, Prepared Lard, of each two pounds. Boil the flowers of elder with the lard until they become friable; then strain through lipnen."

The elder flowers communicate to the unctuous matter a rich green colour. Ointments and plasters thus coloured by different herbs were formerly in use, but they have been properly discarded as possessed of no useful quality, and as the easier mode of giving them a colour, by the addition of some green pigment, came to be substituted in the shops for that of boiling the unctuous matter with the fresh vegetable.

Unguentum veratri. Ointment of White Hellebore. Ph. Lond. (Unguentum Hellebori Albi, Ph. Dub.)

"Take of White Hellebore, rubbed to powder, two ounces; Prepared Hogs Lard, eight ounces; Oil of Lemon, twenty minims. Mix them." In the composition of the Dublin Pharmacopæia the oil is omitted, and the proportion of Hellebore is only three ounces to a pound of Lard.

Hellebore is used, under this form, as an application to psora. It proves sometimes effectual, and is less disagreeable than the application of the sulphur ointment.

Unguentum Hydrargyri præcipitati albi. Ointment of White Precipitate of Mercury. Ph. Lond. (Unguentum Sub-Muriatis Hydrargyri Ammoniati, Ph. Dub.)

"Take of White Precipitate of Mercury, a drachm; Prepared Lard, an ounce and a half. To the lard melted with a gentle heat, add the precipitate of mercury, and mix them."

This is sometimes used as a very mild escharotic, and as a remedy in some cutaneous eruptions.

CERATUM SAPONIS. Cerate of Soap. Ph. Lond.

"Take of Hard Soap, eight ounces; Yellow Wax, ten ounces; Semi-vitrified Oxide of Lead in powder, one pound; Olive Oil, one pint; Vinegar, one gallon. Boil the vinegar with the oxide of lead on a slow fire, stirring constantly until they unite together; then add the soap, and again boil in a similar manner until the water is entirely dissipated: lastly, mix with these the wax previously melted with the oil; then mix with it the other ingredients, so as to form a cerate."

This composition must derive any efficacy it has, principally from the acetate of lead, formed by the boiling of the vinegar on the litharge, and it appears to be an ope-

rose process to obtain a composition which has no very particular advantage.

CERATUM SABINÆ. Cerate of Savine. Ph. Lond. (Unguentum Sabinæ, Ph. Dub.)

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nof "Take of the Fresh Leaves of Savine, bruised, one pound; Yellow Wax, half a pound; Prepared Lard, two pounds. Boil the leaves of the savine with the lard and wax melted together; then strain through linen." In the Dublin Pharmacopæia, only half a pound of savine is ordered to the above proportion of lard and wax.

This ointment is designed as a substitute for the cantharides ointment, as an application to excite suppuration, and continue a purulent discharge, which it is said to do without producing pain or irritation, consequences that occasionally result from the common issue ointment. It is also sometimes used, prepared from the leaves of savine, reduced to fine powder, and mixed with lard,

UNGUENTUM PIPERIS NIGRI. Ointment of Black Pepper. Ph. Dub.

"Take of Prepared Lard, one pound; Black Pepper, rubbed to powder, four ounces. Form them into an ointment."

This must form a very stimulating ointment. For what purpose it is designed is not very obvious.

LINIMENTUM HYDRARGYRI. Liniment of Quicksilver. Ph. Lond.

"Take of the Strong Mercurial Ointment, Prepared Lard, of each four ounces; Camphor, one ounce; Rectified Spirit, fifteen minims; Water of Ammonia, four fluidounces. Rub the camphor first with the spirit, then with the lard and mercurial ointment; lastly, adding gradually the water of ammonia, mix the whole together."

This is designed as a stimulating application and discutient, to be applied to indolent tumors or collections of fluid; by its stimulant action it may promote absorption, and the mercury introduced by the friction may exert a more permanent action.

LINIMENTUM TEREBINTHINE. Turpentine Liniment.

"Take of the Resin Cerate, a pound; Oil of Turpentine, half a pint. To the melted cerate add the oil of turpentine, and mix them together."

Oil of turpentine has been found to be a successful application to burns, and this liniment is a form under which it has been used.