PETROLATUM IN THE OFFICIAL OINTMENTS.*

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PETROLATUM, the new official ointment base, was probably the subject of more animated discussion in the long series of debates occurring in the last Committee of Revision and Publication of the Pharmacopœia, than any other preparation. The fact that it was a mixture, being composed of hydrocarbons of the paraffin and olefin series, probably ranging from $C_{15}H_{32}$ to $C_{35}H_{70}$, and from $C_{14}H_{28}$ to $C_{27}H_{54}$, and that its physical properties depended to a considerable extent upon the relative proportion of olefin constituents, contributed to the necessity for thorough study and discussion; but the need that was recognized for a non-oxidizable substitute for lard, and the conviction that the cosmoline, vaselines, deodorolines, saxolines, petrolines, etc., in their then condition of varying composition, would not be acceptable in a national authority, was the prime reason for fixing a standard which could be readily reached and would be essentially practical. After prolonged consideration, it was finally decided to fix the melting point but slightly above that of the best form of the commercial article, for experience had shown that excellent results had been obtained therapeutically from a petrolatum having a melting point of $40^{\circ}C.$ (or $104^{\circ}F.$), and a firmer petrolatum could be readily produced by incorporating yellow wax with it, although care is necessary in the production of this firmer ointment. To insure a homogeneous compound it must be stirred thoroughly and continuously after it has commenced to congeal, while upon the large scale mechanical stirrers are recommended. At the present time petrolatum can be had of excellent quality and fully up to the requirements of the Pharmacopœia, in large quantities cheaper than good lard, and the reduction in price due to competition is still going on, and thus one practical obstacle to its general employment in ointments is overcome. It is not the intention of this paper to enter into a discussion of the therapeutical superiority of petrolatum as a base for ointments; its very extensive use in this connection, by physicians, compelled the Committee of Revision to introduce it into the Pharmacopœia; and if at the time of the decision an adequate supply, made by different manufacturers and not proprietary in its character, could have been assured, it would have probably been directed in the formulas for the ointments. The next revision will, in all probability, require its use in most of the official ointments. With the view of obtaining some experience in its general use, the following series of formulas was devised, in which petrolatum is substituted for lard or other animal fat in each one of the official cerates and ointments, and one-pound samples are herewith submitted to the association for inspection; the formulas will be accompanied by comments when deemed necessary.

CERATUM.—Cerate.—Yellow wax, thirty parts; petrolatum, seventy parts. Melt them together and stir constantly until cool. The cerate made in this way is of a light yellow color, and, of course, would not be recognized as official simple cerate; it is nevertheless an excellent dressing, and will retain its properties unimpaired a greater length of time than official cerate.

CERATUM CAMPHORÆ.—Camphor Cerate.—Camphor liniment, three parts; olive oil, twelve parts; cerate (made with petrolatum), eighty-five parts. Mix the camphor liniment and the olive oil and incorporate with the cerate. This cerate was introduced as the base of cerate of subacetate of lead, and when made from petrolatum is more permanent than the official. A better and simpler formula in some respects is as follows: powdered camphor, one part; petrolatum, ten parts; cerate (made from petrolatum), one hundred and eighty-nine parts. Warm the petrolatum until it liquefies, then dissolve the camphor in it and incorporate with the cerate.

CERATUM CANTHARIDIS.—Cantharides Cerate.—Cantharides, in No. 60 powder, thirty-five parts; yellow wax, twenty parts; resin, twenty parts; petrolatum, twenty-five parts. Use the official process.

CERATUM CETACEI.—Spermaceti Cerate.—Spermaceti, ten parts; yellow wax, twenty-five parts; petrolatum, sixty-five parts. Melt together the spermaceti and wax, then add the petrolatum and stir the mixture constantly until cool. Not white, but much more permanent than the official.

CERATUM EXTRACTI CANTHARIDIS.—Cerate of Extract of Cantharides.—Cantharides, in No. 60 powder, thirty parts; resin, fifteen parts; yellow wax, thirty-five parts; petrolatum, thirty-five parts; alcohol, a sufficient quantity. Use the official process.

CERATUM PLUMBI SUBACETATIS.—Goulard's Cerate.—Solution of subacetate of lead, twenty parts; camphor cerate (made from petrolatum), eighty parts. Mix them thoroughly. This cerate is more permanent than the official, and, in practice, will be found to be very efficient in alleviating acute, active cutaneous inflammation, at times being successful when the official ointment does not afford immediate relief. It is yellowish-white in color.

CERATUM RESINÆ.—Resin Cerate.—Resin, thirty-five parts; yellow wax, fifteen parts; petrolatum, fifty parts. Melt together at a moderate heat, strain through muslin, and allow it to cool without stirring. The substitution of petrolatum in this cerate is probably not much of an improvement from a therapeutic point of view, as stimulation is the object sought; it would, however, not be objectionable. When made without stirring, a semi-translucent handsome ointment is produced.

CERATUM SABINÆ.—Savine Cerate.—Fluid extract of savine, twenty-five parts; resin cerate (made from petrolatum), ninety parts. Use the official process.

UNGUENTUM.—Ointment.—Petrolatum, eighty parts; yellow wax, twenty parts. Melt the wax and add the petrolatum gradually, then stir the mixture constantly until cool. A yellowish-white ointment, which is firmer in consistence than the petrolatum, having the higher melting point. It is well adapted for use in the firmer class of medicated ointments.

UNGUENTUM ACIDI CARBOLICI.—Ointment of Carbolic Acid.—Carbolic acid, ten parts; ointment (made from petrolatum), ninety parts. Mix them thoroughly. This ointment seems to have less tendency to separate than that made by the official process; therapeutically there can be but little difference in them.

UNGUENTUM ACIDI GALLICI.—Ointment of Gallic Acid.—Gallic acid, ten parts; benzoated petrolatum, ninety parts. Use the official process. Very little benefit was observed when petrolatum was treated with benzoin; the peculiar change in the odor of petrolatum which occurs when it is long kept has been observed in benzoated petrolatum almost to as great an extent as in simple petrolatum which was exposed for the same length of time. The odor is un-

doubtedly modified by the presence of the benzoin, but the petrolatum is not changed or protected by it. This ointment is undoubtedly an improvement on the official one.

UNGUENTUM ACIDI TANNICI.—Ointment of Tannic Acid.—Tannic acid, ten parts; benzoated petrolatum, ninety parts. Use the official process. This is a better ointment therapeutically, than the official.

UNGUENTUM AQUÆ ROSÆ.—Cold Cream.—Petrolatum, sixty parts; white wax, ten parts; rose water, thirty parts. Use the official process. The addition of a small quantity of oil of rose improves this ointment greatly. Although it would be probably useless to attempt to dispense this improved ointment, in ordinary counter practice, as cold cream, because of its yellowish color, there is no question of the superiority of the petrolatum cold cream as a practical dressing and emollient.

UNGUENTUM BELLADONNÆ.—Belladonna Ointment.—Alcoholic extract of belladonna, ten parts; diluted alcohol, six parts; petrolatum, eighty-four parts. Rub the extract with the diluted alcohol until uniformly soft, gradually add the petrolatum, and mix thoroughly. An improvement over the official ointment therapeutically.

UNGUENTUM CHRYSAROBINI.—Chrysarobin Ointment.—Chrysarobin, ten parts; petrolatum, ninety parts. Rub the chrysarobin with the petrolatum, gradually added, until they are thoroughly mixed. A better ointment may be made, however, by digesting the mixture in a water-bath and stirring thoroughly as it cools.

UNGUENTUM DIACHYLON.—Diachylon Ointment.—Lead plaster, sixty parts; petrolatum, thirty-nine parts; oil of lavender, one part; melt together the lead plaster and petrolatum at a moderate heat; then, having permitted the mass to become partly cool, incorporate with it the oil of lavender, and stir constantly until cold. This ointment is a decided improvement on the official formula, it keeps much better, does not separate, and is not so adhesive. On account of the want of uniformity in the quality of olive oil permitted by the Pharmacopœia, physicians often complain of the irritant effects produced by the use of this ointment as ordinarily dispensed. The use of petrolatum would undoubtedly do away with these difficulties, and a smooth, non-irritating, and more permanent ointment than the official be produced.

UNGUENTUM GALLÆ.—Nuttall Ointment.—Nuttall in No. 80 powder, ten parts; petrolatum, ninety parts. Rub the nuttall, with the petrolatum, gradually added, until they are thoroughly mixed. For therapeutical reasons this is preferable to the official.

UNGUENTUM HYDRARGYRI.—Mercurial Ointment.—Mercury, four hundred and fifty parts; petrolatum, three hundred parts; yellow wax, one hundred and fifty parts; compound tincture of benzoin, forty parts; mercurial ointment, one hundred parts. Mix the mercury with the tincture of benzoin in a mortar, add the mercurial ointment (which should contain fifty per cent. of mercury), and triturate the mixture until globules of mercury cease to be visible; then add the petrolatum and yellow wax, previously melted together and partially cooled, and continue the trituration until globules of mercury cease to be visible under a magnifying power of ten diameters. This is believed to be a better ointment than the official, for both lard and suet are dispensed with, the necessary firmness being imparted by yellow wax. The process is particularly more rapid than the official, because suet is almost granular in its character, and prolonged trituration is necessary to break down the granules; the disagreeable odor always present in suet, is of course absent in the improved preparation, while rancidity is effectually prevented.

UNGUENTUM HYDRARGYRI AMMONIATI.—Ointment of Ammoniated Mercury.—Ammoniated mercury, in very fine powder, ten parts; petrolatum, ninety parts. Rub the ammoniated mercury with the petrolatum, gradually added, until they are thoroughly mixed. Preferred for therapeutical reasons.

UNGUENTUM HYDRARGYRI NITRATIS.—Citrine Ointment.—The practice which has been indulged in to some extent of making citrine ointment from petrolatum is one which should be condemned. The well-recognized therapeutic effects caused by the use of this ointment are probably due not only to the presence of the acid nitrate of mercury, but to the elaidin produced by the action of nitric acid upon olein. Now it has been shown by Schorlemmer that hot nitric acid attacks octane, one of the higher members of the paraffin group, and that succinic acid is one of the products, but it is yet to be proved that the resulting compounds, if any, produced by reacting upon petrolatum with nitric acid, under the circumstances detailed by the official process, are valuable. Indeed, it is very probable that the chemical changes are slight, and it is very fair to assume that totally different products must result when a mixture of paraffins is treated with nitric acid than when the olein in an animal oil is so treated.

Practical results seem to verify this view, for the attempts to produce ointment of nitrate of mercury from petrolatum, which have been made by various investigators from time to time, have proved failures; a spongy yellowish mass, filled with bubbles of gases resulting from decomposition, and ultimately turning brown, is the result. The present official process, if strictly adhered to, gives an excellent product, and, for the reasons above given, the writer recommends it in preference to all others.

UNGUENTUM HYDRARGYRI OXIDI FLAVI.—Ointment of Yellow Oxide of Mercury.—Yellow oxide of mercury, in very fine powder, ten parts; ointment (made from petrolatum; see unguentum), ninety parts. Rub the oxide of mercury with the ointment gradually added until they are thoroughly mixed. Preferred to the official from therapeutical reasons.

UNGUENTUM HYDRARGYRI OXIDI RUBRI.—Ointment of Red Oxide of Mercury.—Red oxide of mercury, in very fine powder, ten parts; ointment (made from petrolatum; see unguentum), ninety parts. Rub the oxide of mercury with a small quantity of the ointment until a perfectly smooth mixture is obtained; then gradually add the remainder of the ointment, and mix thoroughly. More permanent than the official, and preferable therapeutically.

UNGUENTUM IODI.—Iodine Ointment.—Iodine, four parts; iodide of potassium, one part; water, two parts; petrolatum, ninety-three parts; use the official process. A dark greenish black ointment is produced, which is probably not inferior to the official. The advantages of the use of petrolatum here are not so apparent as in some of the other ointments.

UNGUENTUM IODOFORMI.—Iodoform Ointment.—Iodoform in very fine powder, ten parts; petrolatum, ninety parts. Rub the iodoform with the petrolatum, gradually added until they are thoroughly mixed. Preferable on therapeutic grounds.

UNGUENTUM MEZEREI.—Mezereum Ointment.—Fluid

extract of mezereum, twenty-five parts; petrolatum, eighty parts; yellow wax, twelve parts. Melt together the petrolatum and wax with a moderate heat, add the fluid extract, and stir the mixture constantly until the alcohol has evaporated, then continue to stir until cool. The advantages of petrolatum in this ointment over lard are not very apparent, as it is used as a stimulating application.

UNGUENTUM PICIS LIQUIDÆ.—Tar Ointment.—The use of petrolatum here is not recommended, although, if desirable, a mixture of yellow wax and petrolatum of the consistence of suet could be used.

UNGUENTUM PLUMBI CARBONATIS.—Ointment of Carbonate of Lead.—Carbonate of lead, in very fine powder, ten parts; petrolatum, ninety parts. Rub the carbonate of lead with the petrolatum, gradually added until they are thoroughly mixed. Preferable therapeutically to the official.

UNGUENTUM PLUMBI IODIDI.—Ointment of Iodide of Lead.—Iodide of lead, in very fine powder, ten parts; petrolatum, ninety parts. Rub the iodide of lead with petrolatum gradually added until they are thoroughly mixed. A bright orange-colored ointment, which darkens on the surface when exposed.

UNGUENTUM POTASSII IODIDI.—Ointment of Iodide of Potassium.—Iodide of potassium, in fine powder, twelve parts; hyposulphite of sodium, one part; boiling water, six parts; petrolatum, eighty-one parts. Dissolve the iodide of potassium and the hyposulphite of sodium in the boiling water in a warm mortar; then gradually add the petrolatum and mix thoroughly. This ointment is of a lemon-yellow color, but shows a disposition to separate on keeping, due to the presence of the water; it should only be made as it is needed.

UNGUENTUM STRAMONII.—Stramonium Ointment.—Extract of stramonium, ten parts; water, five parts; petrolatum, eighty-five parts. Rub the extract with the water until uniformly soft, then gradually add the petrolatum and mix thoroughly. Very much preferable to the official, in the treatment of hemorrhoids.

UNGUENTUM SULPHURIS.—Sulphur Ointment.—Sublimed sulphur, thirty parts; petrolatum, seventy parts. Rub the sulphur with the petrolatum, gradually added until they are thoroughly mixed. Probably no better than the official.

UNGUENTUM SULPHURIS ALKALINUM.—Alkaline Sulphur Ointment.—Washed sulphur, twenty parts; carbonate of potassium, ten parts; water, five parts; petrolatum, sixty-five parts. Rub the sulphur with the carbonate of potassium and the water, gradually add the petrolatum, and mix thoroughly. Preferable, on therapeutic grounds, to the official.

UNGUENTUM VERATRINÆ.—Veratrine Ointment.—Veratrine, four parts; alcohol, six parts; petrolatum, ninety-six parts. Rub the veratrine with the alcohol in a warm mortar until dissolved, then gradually add the petrolatum and mix thoroughly. This ointment is much darker in color than the ointment formerly official, due to the complete solution of the veratrine. When made from petrolatum it is probably more efficient than when made from lard, because of its more rapid absorption.

UNGUENTUM ZINCI OXIDI.—Ointment of Oxide of Zinc.—Oxide of zinc, twenty parts; petrolatum, eighty parts. Rub the oxide of zinc with twenty parts of petrolatum previously melted, until the mixture is perfectly smooth; then add the remainder of the petrolatum and mix thoroughly. This ointment does not equal the official in appearance; it is not white nor does it have the pleasant balsamic odor due to the benzoin, but when used to allay irritation, as in acute eczema, the ointment made from petrolatum will frequently be preferred.

EXERCISE vs. BANTINGISM.

OBESITY is a disease—a gradual, yet a true perversion of a normal state, and therefore a disease—which from its continual irksomeness, apart from any worse symptoms, renders those who suffer from it particularly ready to accept any means of relief, reasonable or unreasonable, if only it will ease them of their burden. It would be superfluous to review the various systems professedly based on scientific principles, but really founded too often on fallacious reasoning, which have claimed to achieve this result.

When one considers the slow development of this condition, its selection of certain individuals in preference to others who consume the same ingredients of diet, and the other circumstances of those affected, it is clear that there is some inherent state of being or habit of life which, more than mere quality of food, conduces to excessive fat formation. For its safe and effectual treatment, provided that the case be not of so long standing as to be beyond all treatment, this state must first be understood and regulated.

It is well known that whatever interferes with oxidation, with due metamorphosis of digested food within the tissues, is apt to lead to its storage in the form of fat. This is true not only of fat itself, but also, though in a much less degree, of substances—as albumen—far removed from it in the scale of chemical change. Such interference arises, on the one hand, from the ingestion of more food than can possibly undergo assimilation, especially if it be largely composed of carbohydrates; on the other, from insufficient demand for formative material on the part of the tissue elements themselves, and this demand is proportionate to their loss by exertion.

It is therefore necessary for health that consumption should be limited as nearly as may be to what is necessary for sustenance, and that discharge of waste and tissue demand should be at the same time encouraged by moderate bodily exercise. But, moreover, the limitation of food must be in its quantity rather than its kind. A certain mixed diet is requisite for healthy growth, and neither fatty, farinaceous, nor albuminoid material can be omitted from it in any considerable proportion without detriment to the general nutrition. If the stout man who desires to be thin will restrict himself to a lean meat diet, taking but a trifling amount of the other more carbonaceous substances, after the Banting method, he will indeed lose bulk, but the restriction will not arrest his fat-forming propensity, which still survives, though on reduced fare, and will return to him as soon as he resumes his former mode of living.

Moreover, his Bantingism must either underfeed the non-fatty tissues in respect of their most important constituent, carbon, or to avoid this must so overload every organ, but especially the kidneys, with surplus albuminoid excreta as to cause their overwork and degeneration at no distant date. The danger, though still real, is less to men of active habits, but such the obese commonly are not. By this method we seek to avoid one trouble, with partial success, only to fall into another, perhaps worse. While, therefore, we are ready to admit that stout persons should be content with a less rich diet than the spare-bodied, we are careful to preserve its essentially mixed character, to limit its consumption

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