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Parker, Davis & Co.

PHARMACAL FACTS.

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PRESENTED TO  
THE MEMBERS OF THE  
AMERICAN MEDICAL  
CONVENTION,  
WASHINGTON, D. C.

PARKE, DAVIS & CO., Detroit and New York City.

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# NORMAL LIQUIDS.

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A Class of Superior Assayed Fluid Extracts, Introduced by Parke, Davis & Co.  
One Cubic Centimetre of which is Equivalent to One Gramme  
of Drug of Standard Strength.

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We call attention to a new line of pharmaceutical preparations which we have introduced as a refinement upon the familiar fluid extracts. The growing popularity of the class of preparations last named is evidence that the introduction of reliable concentrated solutions of the active ingredients of vegetable drugs, has been a step in the right direction. We need not here rehearse the advantages possessed by these preparations, not only over the time honored infusions and tinctures of the old pharmacopœias, but even over the crude drugs which they represent. Attention has recently been called in an editorial article in the Therapeutic Gazette (Feb., 1882), to a serious defect which is common to all galenical preparations—infusions, decoctions, tinctures, etc.—and which has not been remedied in even the fluid extract. We allude to the want of uniformity in strength, necessitated by variations in the proportion of active principle contained in the crude drug itself. We quote from the article referred to: "When the physician prescribes .008 grm. ( $\frac{1}{8}$  grain) of morphine, he knows exactly what result to expect from the dose, for he is dealing with a definite chemical compound. When he orders .065 grm. (1 grain) of opium, he cannot count with the same certainty upon the effect, for, in spite of the standards adopted already in regard to this powerful narcotic, the opium dispensed may contain eight or it may contain sixteen per cent. of morphia. Other drugs—among them notably those upon which the physician relies for producing prompt and powerful effects—vary even more widely than this. Yet the books state the dose of the drug as a fixed quantity, and the physician prescribes accordingly—often to be wholly disappointed in the effect he hoped to produce.

"In a majority of the vegetable drugs, indeed, no such scientific exactness in dose is required. Such drugs as dandelion, gentian, eucalyptus, etc., may be given in widely varying quantities without any observable difference in the effects produced. If the drug is of fairly good quality, as judged by obvious physical properties, it may be accepted as of standard strength, and administered in the doses which the books recommend. With powerful drugs like aconite, belladonna, colchicum, etc., however, exactness in the dose is a matter of the utmost consequence, if they are to be employed in a rational and scientific manner."

The NORMAL LIQUIDS are introduced to remedy this great evil. They are simply fluid extracts made by assay of such a strength that one cubic centimetre is equivalent to one gramme of a drug of *standard strength*. In each case this standard is fully stated on the label of the liquid.

As in the chemists' normal solutions, one litre contains one chemical equivalent, expressed in grams of the reagent, so in these NORMAL LIQUIDS one litre contains the therapeutic equivalent of one kilogram of a good drug.

Since the pharmacopœia does not at present furnish any standard of strength for most even of the more active drugs, we have adopted provisionally a standard for these NORMAL LIQUIDS based partly upon the statements of the best authorities, partly upon numerous assays of samples of the various drugs in question. Wherever it is practicable, we have adopted a standard based upon the quantity of the alkaloid contained in an average sample of a drug of good quality. Much remains yet to be done in the way of simplifying and perfecting methods of assay of the various drugs, but sufficient progress has been made in this direction to warrant us in taking the initiative in this important movement in the interest of scientific therapeutics.

The committee to which was entrusted the revising of the pharmacopœia of 1880, have wisely, as we think, adopted the metric system of weights and measures in all formulæ for fluid extracts. The system commends itself in any case by its simplicity, and its adoption facilitates materially the calculations involved in an assay. Accordingly, we have not only adopted it in the manufacture of these preparations, but we have followed it further in putting these goods upon the market in packages of 1 litre,  $\frac{1}{2}$  litre and  $\frac{1}{4}$  litre.

We still follow the common practice of putting up fluid extracts, upon the pharmacopœial standard, by measure in packages containing  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 and 5 pints respectively. The NORMAL LIQUIDS also will be put up by measure, as they are manufactured, so that each litre represents one kilogram of a drug of standard strength. They are sold in packages containing  $\frac{1}{2}$  litre,  $\frac{1}{4}$  litre and 2 litres (bulk) each.

The ratio of the metric measures to those in common use is as follows:

1 litre	=	33.81 fluidounces	=	2.112 pints.
$\frac{1}{2}$ "	=	16.9 "	=	1.056 "
$\frac{1}{4}$ "	=	8.45 "	=	.528 "

The decimal system of weights and measures is immeasurably superior to all others in its simplicity, and is the only one which can be defended on scientific as well as utilitarian grounds. In this system weights and measures have a common unit. The correspondence of these with one another, and with our own unscientific system, is shown below:

Decimal Weight.	Decimal Measure.	Decimal Liquid Measure.	Apothecaries' Weight.	Avoirdupois Weight.	Apothecaries' Measure.
	Cubic Metre.	Kilolitre (Stère).	2679.2 lb.	2204.6 lb.	
		Hectolitre.	267.9 lb.	220.46 lb.	26.41 gal.
Myriogramme.		Decalitre.	26.8 lb.	22.05 lb.	2.641 gal.
Kilogramme.	Cubic Decimetre.	Litre.	32.15 oz.	2.205 lb.	2.112 pt.
Hectogramme.		Decilitre.	3.215 oz.	3.527 oz.	3.38 fl. oz.
Decagramme.		Centilitre.	2.572 dr.	.353 oz.	2.71 fl. drm.
Gramme.	Cubic Centimetre.	Millelitre.	15.432 gr.	15.432 gr.	16.23 m.
Decigramme.			1.543 gr.	1.543 gr.	1.623 m.
Centigramme.			0.154 gr.	.154 gr.	.162 m.
Milligramme.			.0154 gr.	.015 gr.	.016 m.

It will be remembered that the fluid extracts of the present pharmacopœia do not represent the drug from which they are prepared strictly in the proportion of minim to grain, since one minim of water weighs, not one grain, but 0.95 gr. One fluidounce of the fluid extract represents, not as formerly, one Troy ounce of drug, but a quantity equal in weight to one fluidounce of water, viz., 455.69 grains.

The following synopsis shows the relation of the fluid extracts made after the present formulæ to those of previous pharmacopœias, and illustrates at the same time the confusion that must arise in attempting to use our ordinary system of weights and measures:

Weight of Drug.	Measure of Fluid Extract.	
	Phar., 1880.	Phar., 1870.
100 grains of drug make.....	100 CC.	94.9 CC.
100 Troy ounces of drug make.....	105.3 fluidounces.	100 fluidounces.
100 avoirdupois ounces of drug make.....	96 fluidounces.	91.1 fluidounces.

The change in strength amounts to only about 5 per cent., which does not materially alter the dose of even the powerful remedies. If the difference in strength of different samples of the same drug, often equally good to all appearances, were no greater than this there would be no occasion for these new standard preparations. Unfortunately the drug is liable to a variation sometimes of 50 to 100 per cent. We are confident that the time is not far distant when the pharmacopœia itself will prescribe within rigid limits the strength of all pharmaceutical preparations of powerful drugs.

## STANDARDS OF STRENGTH OF NORMAL LIQUIDS.

The following are the standards of strength which have been adopted for the more important of our Normal Liquids:

**Liquid Aconite Root, Normal.**—Aconite root contains a proportion of alkaloid as estimated by Dragendorff's method varying from 0.2 to 1.125%. We have adopted as standard 0.75% of alkaloid. The alkaloid contained in 10 c. c. of the NORMAL LIQUID requires 2.8 c. c. of Mayer's volumetric solution for complete precipitation. We also require that this liquid shall answer to the physiological test lately described by Dr. Squibb.

**Liquid American Hellebore, Normal.**—American Hellebore of good quality contains about one per cent. of alkaloids. Ten c. c. of the NORMAL LIQUID require for complete precipitation of the alkaloids 3 c. c. of Mayer's solution.

**Liquid Belladonna Leaves, Normal.**—Belladonna leaves contain a proportion of Atropine varying from 0.25 to 0.75%. We have adopted as a standard 0.44% (National Dispensatory p. 275). The alkaloid contained in 10 c. c. of the NORMAL LIQUID requires for precipitation 3.52 c. c. of Mayer's volumetric solution.

**Liquid Belladonna Root, Normal.**—Belladonna root contains a proportion of Atropine varying from 0.25 to 0.75%. We have adopted the same standard as for Belladonna leaves, viz.: 0.44%. The alkaloid contained in 10 c. c. of the NORMAL LIQUID requires for complete precipitation 3.5 c. c. of Mayer's volumetric solution.

- Liquid Cannabis Indica, Normal.**—Ten c. c. of the NORMAL LIQUID evaporated to complete dryness at 105° C. leaves a residue weighing 1.25 Gm.
- Liquid Cinchona Calisaya, Normal.**—Good Calisaya bark contains at least 2% of Quinine, U. S. P., 1880. The Calisaya of the market contains from 0.0 to 3% and upwards of this alkaloid. We have adopted the U. S. P. standard of 2%. Ten c. c. of the NORMAL LIQUID contain 0.2 Gm. Quinine (anhydrous).
- Liquid Cinchona Red, Normal.**—Red Cinchona bark contains a proportion of alkaloids varying from 2 to 6%. We have adopted as a standard 3.5% total alkaloid. Ten c. c. of the NORMAL LIQUID yield 0.35 Gm. mixed alkaloids (anhydrous) of which not more than 0.15 Gm. is Cinchonine.
- Liquid Colchicum Root Normal.**—Colchicum root contains a variable amount of alkaloid according to the time of gathering. A good article when treated according to Dragendorff's process of assay indicates 1.25% of alkaloid, and this we have provisionally adopted as a standard. Ten c. c. of the NORMAL LIQUID require for complete precipitation in a strongly acid solution, 4 c. c. of Mayer's volumetric solution.
- Liquid Colchicum Seed, Normal.**—For Colchicum seed we have adopted the same standard as for Colchicum root. Ten c. c. of the NORMAL LIQUID require for complete precipitation 4 c. c. of Mayer's volumetric solution.
- Liquid Conium Seed, Normal.**—Conium seed contains a very variable amount of alkaloid. The statement of Stillé & Maisch may be provisionally accepted as a basis for this standard, viz.: the ripe undried seeds contain 0.8% of Coniine. Ten c. c. of the NORMAL LIQUID evaporated to complete dryness at a temperature of 105 C. leave a residue weighing 1.5 Gm.
- Liquid Ergot, Normal.**—The value of Ergot is believed to depend mainly upon the amount of Sclerotic Acid and Scleromucin it contains. We have hence adopted as an arbitrary standard a fixed amount of organic acid estimated by a volumetric solution of Lead Acetate. Ten c. c. of the NORMAL LIQUID require for complete precipitation 100 c. c. of a solution containing 1% of crystallized Lead Acetate.
- NOTE.—This preparation which, under the title of *Liquor Ergotae Purificatus*, originated the establishment of our line of NORMAL LIQUIDS, and upon the popularity of which this new issue is promoted, undergoes no alteration in process of manufacture or price. The change is confined to the style of package which will hereafter conform to the distinctive characteristics distinguishing this class of our remedies.
- Liquid Foxglove, Normal.**—No satisfactory process of assay having been as yet devised, we adopt provisionally for this preparation a certain proportion of extractive matter. Five c. c. of the NORMAL LIQUID evaporated to complete dryness at a temperature of 105° C. leave a residue weighing 1 Gm.
- Liquid Gelsemium, Normal.**—This preparation is made from the dried drug, and is consequently much stronger than the fluid extract (unofficial) made from the green drug which is so largely used. It corresponds with the fluid extract of the Pharmacopœia, but is brought to a fixed alkaloidal strength as indicated by the potasio mercuric iodide solution. Ten c. c. of the NORMAL LIQUID require for complete precipitation 3 c. c. of Mayer's volumetric solution.
- Liquid Henbane, Normal.**—Henbane contains an amount of alkaloid varying from 0.05 to 0.25%. A good drug should yield about 0.18%, and this we adopt for our standard. Ten c. c. of the NORMAL LIQUID require for complete precipitation 1.3 c. c. of Mayer's volumetric solution.
- Liquid Ipecac, Normal.**—Ipecac contains a proportion of Emetine varying from 1 to 3.5%. A good drug contains at least 1.5% of the alkaloid as estimated by Mayer's reagent. This forms the basis for our standard. Ten c. c. of the NORMAL LIQUID require for complete precipitation 8 c. c. of Mayer's volumetric solution.
- Liquid Mandrake, Normal.**—Mandrake root yields commonly between 4 and 5% of Podophyllin, of which about 45% is the Podophyllotoxin of Podwissotzky. We have adopted for our standard 2% of Podophyllotoxin. Ten c. c. of the NORMAL LIQUID yield, when concentrated and poured into 20 c. c. of cold water, a precipitate which, when carefully washed and dried at 100° C., weighs .425 Gm.

**Liquid Nux Vomica, Normal.**—Nux vomica contains from 1 to 3% of alkaloids, of which about one-half is Strychnine. Most specimens of fluid extract nux vomica which we have assayed contain less than 0.75% of total alkaloids. We have adopted the rather low standard of 1.5% of alkaloids for the NORMAL LIQUID because this is the maximum proportion obtained from the drug in the galenical preparations, when made with the greatest care. Ten c. c. of the NORMAL LIQUID contain .15 Gm. of mixed alkaloids, readily estimated by adding a few drops of dilute sulphuric acid, evaporating off the alcohol, washing the residue with pure ether, and taking it up at the same time with water, and finally treating the aqueous solution with caustic soda, and shaking with a mixture of ether and chloroform.

**Liquid Rhubarb, Normal.**—No simple and satisfactory process of assay being yet devised for this drug, we adopt as a standard for the NORMAL LIQUID 30% of extractive matter. Five c. c. of the NORMAL LIQUID evaporated to dryness at a temperature of 105° C. leave a residue weighing 1.5 Gm.

**Liquid Stramonium Leaves, Normal.**—Stramonium leaves contain from .25 to .5% of alkaloid. We have adopted provisionally as a standard .375%. Ten c. c. of the NORMAL LIQUID require for complete precipitation 3 c. c. of Mayer's volumetric solution.

**Liquid Stramonium Seed, Normal.**—Stramonium seed contains about 0.35 to 0.4% of alkaloid. We have adopted, as for the leaves, a standard of .375%. Ten c. c. of the NORMAL LIQUID require for complete precipitation 3 c. c. of Mayer's volumetric solution.

## PRICE LIST OF NORMAL LIQUIDS.

These preparations are sold in packages containing  $\frac{1}{2}$  litre,  $\frac{1}{4}$  litre and 2 litres (bulk) each. Prices given are *per litre* (2.112 pints) in bottles of  $\frac{1}{2}$  litre each; an additional charge of 10 cents *per litre* will be made when desired in the  $\frac{1}{4}$  litre bottles, and a reduction of 10 cents per litre when ordered in bulk (2 litre bottles).

Liquid Aconite Root, Normal.....	\$ 3 00	<i>gotæ Purificatus</i> .....	\$ 4 40
Liquid American Hellebore, Normal.....	3 30	Liquid Foxglove, Normal.....	3 00
Liquid Belladonna Leaves, Normal.....	3 30	Liquid Gelsemium, Normal.....	3 00
Liquid Belladonna Root, Normal.....	3 30	Liquid Henbane, Normal.....	3 50
Liquid Cannabis Indica, Normal.....	4 00	Liquid Ipecac, Normal.....	2 25
Liquid Cinchona Calisaya, Normal.....	10 50	Liquid Mandrake, Normal.....	3 00
Liquid Cinchona Red, Normal.....	10 50	Liquid Nux Vomica, Normal.....	3 00
Liquid Colchicum Root, Normal.....	3 00	Liquid Rhubarb, Normal.....	5 50
Liquid Colchicum Seed, Normal.....	3 75	Liquid Stramonium Leaves, Normal.....	3 00
Liquid Conium Seed, Normal.....	3 30	Liquid Stramonium Seed, Normal.....	3 00
Liquid Ergot, Normal (Formerly <i>Liquor Er-</i>			

## PARKE, DAVIS & CO.,

*Manufacturing Chemists,*

DETROIT, MICHIGAN.

NEW YORK OFFICE: } 60 Maiden Lane and  
 } 21 Liberty Street.

## Concerning Fluid Extracts.

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We are frequently made aware of the existence of serious misapprehension in the minds of some very worthy physicians, and even druggists, in regard to the functions and properties of fluid extracts, particularly such as necessarily are and should be prepared with a strongly alcoholic menstruum. We have not far to look for the cause of these misconceptions, and it is in order to correct them that we desire to call the attention of our friends to some of the more salient features presented by these preparations.

There is a large class of drugs of which we can name, for illustration, such individuals as buchu, eucalyptus, cannabis indica, aconite, yerba santa, cubebs, lupulin, savin, valerian and ginger, in which the activity of the drug depends entirely, either on the volatile oil, resin or alkaloid, or on their combinations. These principles being most largely soluble in strong alcohol and almost insoluble in water, the use of the first named liquid is, of course, made imperative when it is proposed to manufacture a fluid extract which shall properly and fully represent the drug. A re-statement of the well known general properties of these drugs might seem almost superfluous, considering that the pharmacopœias and text books are so explicit on these points, were it not for the fact that a later education has been attempted, in a very sordid and unworthy interest, by which it is proposed to unlearn this knowledge, or at least to blind us to it by interposing apparent excellencies in so-called fluid extracts which a close inspection shows, however, to be superficial and unreal. We refer now to a class of manufactures with which some of our competitors are endeavoring to flood the market, and the claim of superiority in regard to which is based principally on the fact that they will make a much *clearer mixture with aqueous liquids* than old-fashioned, honestly-made extracts. As an illustration of the principle involved we will select cannabis indica, whose active ingredient, of a characteristic resinous nature, is insoluble in water, soluble in strong alcohol, and soluble to but a limited degree in a mixture of the two, or diluted alcohol. Were we to prepare from sixteen Troy ounces of this drug, a pint of fluid extract with strong alcohol, and from another sixteen Troy ounces a like quantity of extract with diluted alcohol, we should certainly find that the extract prepared with *dilute alcohol* would make a *handsomer, clearer mixture with an aqueous liquid* than the one made with stronger alcohol. Need we ask why? Is it not self-evident that the preparation with dilute spirit is woefully deficient in the resinous ingredients of the plant, and that, therefore, a heavy discount must be made on its activity as compared quantitatively with the other? And yet this class of fluid extracts is presented to the profession with claims for preference based entirely on this feature of their making a *handsome appearing mixture*, at the *sacrifice of medicinal activity!* While it has always been our desire to minister to the innate taste for the beautiful, which requires by preference an elegant preparation, and which stimulates all improvements which tend to that end, we cannot admit that a sacrifice of principle is ever justifiable in the attainment of that object. In the case of cannabis indica just referred to, we have always proceeded by using, in the first place, an assayed drug, known to con-

tain sufficient resin to conform to an established standard, and then exhausting the drug with the proper liquid, strong alcohol.

Our preparation, therefore, *will, and should make a turbid mixture with water or aqueous liquids*, from separation of the resin which is insoluble in such fluids. The extent to which the resin separates, and renders water turbid, may be even used as an approximate test of the strength of the preparation; for it is very evident that the more resin, oleoresin or other substance insoluble in water, is present in the alcoholic liquid, the greater will be the amount separated when this is thrown into water, and the greater, therefore, the consequent turbidity.

These remarks will apply equally to all the drugs mentioned as members of this class; so we need, therefore, not multiply instances to impress a fact which becomes self evident when the premises are taken into consideration. We have enumerated but a few of the drugs whose virtues are constituted so as to require the use of a strongly alcoholic liquid for extraction, and likewise a liquid of the same composition for holding these principles in solution after their separation from the parent drug.

In view of these facts, there is then serious mischief threatened in the introduction of fluid extracts which, from poverty of spirituous contents, although possessing a handsome appearance and other apparently desirable properties (particularly a low price), do not act handsomely, and besides bring about one vicious result:—they lead to the employment of larger doses, for it does not take the prescriber long to discover that his patient can bear larger and still larger doses with impunity, and in fact needs such apparent over-doses to produce the desired effect. Let such a prescriber, however, obtain a conscientiously prepared extract in place of the one he has been using and give the same doses, and curiously enough, his spleen is usually vented on the really good representative of the drug for having produced unlooked for, or perhaps even serious results, from a very evident overdose, and the preparation, instead of a perverted education and misplaced confidence, receives the blame.

We think it will need but little argument to convince those who have had the least experience, that of different methods of administration, that one should certainly have the preference in which exactness of dose is not only possible but inevitable, while the other which combines chance convenience with uncertainty of dose should be as much avoided.

Now, in regard to the method of administration of this class of fluid extracts, we desire to make a few suggestions. In accordance with the proposition that that method should have the preference by which exactness of dose is secured, we recommend, where it is absolutely necessary to dilute such a fluid extract prior to the moment of administration, the employment of a viscid liquid for this purpose, such as mucilage, syrup or glycerine. Much better, however, is the method of dropping the *dose, at the moment it is wanted*, into water, milk or other diluent, and administering while the portion precipitated, and insoluble in water, is still in a *finely suspended condition, and before its particles have had time to separate and cohere*. This latter method renders impossible the gathering of such separated resinous or oily particles into a clot, which may and occasionally does, convey in one dose the active and often powerful ingredient intended for distribution among a much larger number of doses, thereby introducing the element of uncertainty and risk in the administration of the remedy.

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PARKE, DAVIS & CO., Detroit and New York.

# SARCO-PEPTONES!

(σάρξ, σάρκος—flesh; πεπτω—I digest.)

RUDISCH'S EXTRACT OF

## PEPTONIZED BEEF.

We desire to state to the medical profession that we have assumed the agency for the sale of the above important preparation, and that we have on hand for distribution, *gratis*, a limited number of samples which we shall be pleased to furnish to physicians who may favor us with their addresses.

This preparation perfectly meets the modern idea of an artificially digested food, as well as that of an extract of meat, being rich in nitrogenous matter in the form of PEPTONES derived from the ALBUMEN of the meat.

"SARCO-PEPTONES" contains not only *all the extractive substances*, organic and inorganic salts of the beef, but also *most* of its *albuminous* portion converted into a soluble and easily assimilable form, known in Physiology as PEPTONES.

SARCO-PEPTONES cannot be compared either with beef-tea or with the commercial beef extracts after Liebig's formula, for whilst this preparation is a FOOD in the same sense as beef is, the best authorities, including Baron Liebig himself, have demonstrated that Liebig's Extract is only a STIMULANT.

One part of SARCO-PEPTONES corresponds in nutritive value to *eight parts* of fresh beef.

All the objectionable features of artificially digested meats heretofore offered to the profession and the public have been overcome in SARCO-PEPTONES, owing to the special method of preparing the same.

The superiority of SARCO-PEPTONES consists in:

I. **The Large Percentage of Peptones which it Contains.**—There are 35 per cent. of Peptones, beside other nitrogenous substances.

II. **Its Absolute Purity.**—It is diluted with no foreign matter whatsoever, but contains only such as is derived from the meat itself. For this reason it is one of the *cheapest* products of its kind ever put on the market.

III. **Its Uniformity.**—The method of preparing this product is such as at all times guarantees its uniformity.

IV. **Its Palatability.**—The taste of this preparation is such as to be acceptable to the most fastidious patient.

V. **Its Perfect Solubility in Water.**—Sarco-Peptones will dissolve at once in boiling water; and in a comparatively short space of time, in cold water.

The process of digestion has been partially accomplished in the preparation of this article, hence the *weakest stomach* will be able to assimilate it. Therefore, Sarco-Peptones may be employed as a remedy in ANEMIA, EXHAUSTION, INDIGESTION, FEVERS, etc., and in all cases of *convalescence* as well as *by the healthy*.

Send for reprints of articles on the relative value of the ordinary meat extracts and Sarco-Peptones, written by eminent physiologists, and published in various medical journals of high standing.

PARKE, DAVIS & CO., Man'g Chemists.

60 Maiden Lane, }  
21 Liberty Street, } NEW YORK CITY.

DETROIT, MICHIGAN.

[In ordering, please specify Parke, Davis & Co's.]

# OLEATES.

## Their Origin, Nature, and Medicinal Uses.

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THE use of an oleate of mercury in place of the time honored mercurial ointment was suggested more than ten years ago by Prof. John Marshall, and the advantages of the preparation were so manifest that it came immediately into general use. The oleate was prepared in a very crude manner, by merely dissolving mercuric oxide in a large excess of oleic acid, and although the product left much to be desired from the pharmacist's standpoint, it so far met the expectations of the profession, that a general interest in the compounds of oleic acids was aroused, and experiments were made with oleates of certain alkaloids, as well as of several of the metals which promised to be of great therapeutic usefulness. These compounds were, however, generally made by the same crude and unscientific method which had already been employed in the case of the mercuric oleate. Recently attention has been turned to the pure oleates; particularly of some of the metals, as possessing properties which should entitle them to a place in the *materia medica*. It had been assumed that for dermic medication the oleates possessed advantages over all other known compounds, both from the facility with which they might be blended with fats in ointments, and the readiness with which, when so blended, they might be absorbed. Clinical experience has confirmed these hypothetical assumptions, and the oleates of zinc, lead, mercury, bismuth, copper and aluminium have already found important applications in therapeutics, and those of iron, silver and arsenic promise to be scarcely less useful.

Dr. John V. Shoemaker, of Philadelphia, has recently drawn the attention of the profession to the therapeutical applications of some of the metallic oleates, particularly in the treatment of diseases of the skin. An extended clinical experience in their use has convinced him that their merits entitle them to a permanent place in the *materia medica*. He has embodied some of the results of his careful study of the subject in a paper read before the Pennsylvania State Medical Society, and published in their Transactions for the year 1882. To this paper we desire to refer as authority for the following statements: 1. The compounds of oleic acid are remarkable for their ability to penetrate rapidly into animal textures. 2. Ointments prepared from the pure oleates are wholly free from rancidity. 3. The ready absorption of the oleates renders the ointments prepared from them more cleanly than any others. 4. These preparations may be applied to the skin without the tedious friction requisite to promote absorption in other cases. They are likewise much more economical in the amount of material required to produce a specific effect. 5. The metallic oleates seem to exert an antiseptic action, not only on the fats with which they may be combined in an ointment, but also on the discharges from wounds and suppurating surfaces.

The recommendations which follow in regard to the therapeutic uses of the metallic oleates are taken from Dr. Shoemaker's essay, above referred to, and are based upon the writer's extended clinical experience in their use:

### Oleate of Mercury.

The impure solution of mercuric oleate is well known, and all who have had occasion to dispense it know how unstable is the compound in presence of excess of oleic acid. The pure precipitated oleate of mercury is not liable to this objection, and from this an ointment of any desired strength may be readily prepared with lard or lard oil. Its uses are already somewhat familiar, being the same as those of the old-fashioned mercurial ointment. It destroys all parasites, animal or vegetable, and produces all the therapeutic effects, local or constitutional, which have so long rendered mercury an indispensable article of the materia medica.

### Oleate of Arsenic.

This is employed in the form of an ointment, containing 20 grains to the ounce, chiefly for its caustic action in the treatment of lupus, of the ulcerating variety of epithelioma, and for destroying warts, condylomata, nævi, corns and old granulations. Its action is mild and comparatively painless, and it may be combined with anodynes, such as the oleates of morphia, atropia, etc. When used for warts, corns, etc., the surface must first be punctured or scraped to afford it opportunity to act.

### Oleate of Lead.

This compound is used in the form of an ointment (60 per cent., which is substantially Hebra's unguentum diachyli), but has the advantage of greater definiteness in composition, and is besides more readily prepared. It is used to allay the inflammation and check the discharge in the pustular eczema of infants; it relieves the intense irritation of papular eczema, and especially that form which occurs in the flexures of joints, around the axilla, etc. It is also useful in simple lichen, in acne about the face and back, and, in combination with milk of sulphur, in ordinary scabies.

### Oleate of Zinc.

An impalpable powder, of a light pearl color and an unctuous feel like that of powdered French chalk. It is applied by dusting it over the surface, and its uses in this form are numerous. It is said to be par excellence the remedy for excessive sweating (hyperidrosis) and osmidrosis. It is the most reliable remedy for eczema, and it may be employed in all cases where the oxide of zinc ointment has heretofore been esteemed. It may be employed also in the form of an ointment, containing 25 per cent. of the oleate.

### Oleate of Silver.

This, like the oleate of zinc, is offered in the form of a fine powder. When mixed with lard in the proportion of from 10 to 60 grains to the ounce, it forms a dark brown, soft and pliable ointment. It is useful in relieving itching about the meatus auditorius, the anus and the genitals; it is recommended as an application to prevent the spread of erysipelas, or, sufficiently diluted, to be applied to the inflamed surface. The pure oleate may be employed in the treatment of chronic ulcers, bed sores, etc., to bring about a more healthy condition of the parts.

The following formulæ, in use in the American Hospital for Skin Diseases in Philadelphia, will illustrate further the use of these preparations.

In fissured eczema of the plantar and palmar surfaces:

- ℞ Hydrargyri oleatis, ℥ss  
 Olei cadini, ℥ss  
 Cerati simplicis, ℥ss.

M. Sig. Rub well into the part, after macerating in hot water, night and morning.

In infantile eczema:

- ℞ Unguenti plumbi oleatis, ℥ss  
 Pulveris marantæ, ℥j  
 Cerati simplicis, ℥ss  
 Olei olivæ, q. s., at ft. ung. moll.

M. Sig. Apply lightly over the surface, and in case of much pustulation of the surface or a swelling of the glands, the addition of one-half to one-quarter of a drachm of the oleate of mercury to the above will be very advantageous.

In rosacea, etc., the active inflammation of the blood vessels and tissues of the face may be checked by:

- Unguenti plumbi oleatis,  
 Bismuthi oleatis, ℥iij ʒj.

M. Sig. Apply a very small piece night and morning.

In eczema of the anus with external piles great relief is afforded by:

- ℞ Bismuthi oleatis, ℥ij  
 Extracti opii, gr. x  
 Extracti belladonnæ, gr. x  
 Cerati simplicis, ℥ss.

M. Sig. Apply frequently.

### Oleate of Bismuth.

The oleate of Bismuth is of an ointment-like consistency; it is emollient and slightly astringent, and is a most valuable remedy in soothing and relieving cutaneous irritation. In pustular eruptions, particularly in sycosis, this oleate, pencilled over the surface with a camel's hair brush, will greatly relieve the engorgements of the parts; it will often abort the pustules, and relieve the pricking and itching which are so intolerable to the patient. It is also useful in superficial erysipelas, in sunburn, as an application to cracked and sore nipples, and in the treatment (applied by a bougie) of subacute gonorrhœa and gleet.

### Oleate of Iron.

This forms a reddish brown paste of a feebly styptic taste, readily soluble in fats. It exerts locally an astringent effect, but may also be employed with a view to its constitutional tonic action, since it is readily absorbed.

### Oleate of Copper.

An ointment containing ten or twenty per cent. of the oleate may be used. It is very efficacious in the treatment of ringworm. It is useful also as an application to hard and horny warts, corns and bunions.

### Oleate of Aluminium.

The ointment prepared from this oleate has a powerful astringent action. Its chief use, therefore, is in checking profuse secretion, as in some forms of eczema.

It may be employed as a dressing for foul ulcers, abscesses, sinuses, burns and scalds, etc.

### Oleates of Alkaloids.

We prepare also solutions of the oleates of the more important alkaloids. Where the local effects of these agents are desired, or where they cannot be administered in the usual manner, these solutions of the oleates may be advantageously employed. These powerful agents exert their peculiar influence more energetically in this form of combination than in any other, since they are easily absorbed.

## PRICE LIST OF OLEATES.

### OLEATES OF ALKALOIDS IN SOLUTION.

	PER OZ.
Aconitine, containing 2% of the alkaloid, in $\frac{1}{4}$ oz. vials.....	\$ 4 00
Atropine, containing 2% of the alkaloid.....	60
Morphine, containing 10% of the pure alkaloid.....	75
Morphine and Mercury, containing 5% of the pure alkaloid, and 20% of Mercuric Oxide.....	65
Quinine, containing 25 of the pure alkaloid.....	1 25
Strychnine, containing 2 of the alkaloid.....	35
Veratrine, containing 10 of the alkaloid.....	1 00

### METALLIC OLEATES.

### PER OZ.

Oleate of Aluminium.....	\$ 30
Oleate of Arsenic.....	30
Oleate of Bismuth.....	30
Oleate of Copper.....	30
Oleate of Iron.....	30
Oleate of Lead.....	30
Oleate of Mercury.....	35
Oleate of Silver..... in $\frac{1}{2}$ oz. vials.	2 50
Oleate of Zinc.....	30

### OINTMENTS OF METALLIC OLEATES. PER LB.

Aluminium oleate, 50%.....	\$2 00
Arsenic oleate, 5.....	2 00
Copper oleate, 20%.....	2 00
Iron (ferric) oleate, 25%.....	2 00
Lead oleate, 50%.....	2 00
Mercuric oleate, 10%.....	2 00
Silver oleate, 5%.....	2 00
Zinc oleate, 25%.....	2 00

## PEPSIN.

Having effected complete and very advantageous arrangements for the production of Pepsin on an extensive scale, we are enabled to offer this remedy in its purest possible form and possessing extraordinary value as regards permanency and uniformity. We are confident that our product is unexcelled. Descriptive circulars, samples, and prices for quantity will be furnished on application.

PARKE, DAVIS & CO., Detroit and New York.

# INTRODUCTORY.

## TO THE MEDICAL PROFESSION:

In early recognition of the personal worth and professional character of the late Dr. J. Marion Sims, and the high standing among its contemporaries of the British Medical Journal, we placed upon our list of fluid extracts our Alterative Compound, so strongly recommended by Dr. Sims as an alterative and antisymphilitic in an article in that journal, reproduced in the following pages.

Other manufacturers (the reliability of whose products we do not care to decry,) have since come into the market and sought to obtain a monopoly in the sale of this formula by establishing a sort of *proprietorship* therein, bestowing upon it a mysterious, but by no means scientific name, and procuring the "exclusive sanction" of some one of the several original prescribers for its manufacture.

In competition with these various preparations, known as "Succus Alterans," "Mist. Smilacis Comp.," etc., we desire to direct the attention of the medical profession to the following claims for our Alterative Compound:

**The Identity of the Preparation.**—On the strength of the recommendations contained in Dr. Sims' article, our Alterative Compound is made from the recent root. In view of the impression sought to be created by a certain firm of manufacturers, that they alone are in a position to supply a reliable preparation of this compound, we take the liberty of reproducing the following letter received by us from the late Dr. J. Marion Sims:

*Messrs. Parke, Davis & Co., Detroit:* 12 PLACE VENDÔME, PARIS, March 18, 1883.

I beg leave to call your attention to an article in the British Medical Journal of the 10th March, in which I give an account of the treatment of syphilis by Dr. McDade's Compound Fluid Extract of Stillingia, &c.

The article was published only a week ago, and enquiries by medical men show that it is attracting attention. The ingredients are all indigenous to our country (the Lappa Minor is common to both Europe and America) and cannot be procured here. If you will prepare the formula for the profession, I will take care to let them here know they can order it from you through their pharmacists.

I hope you will see the importance of the subject as I do. We all know that if you would take it in hand we should always have a uniform and reliable preparation.

Please give me a line in reply, and oblige, yours, most truly,  
J. MARION SIMS.

**The Scientific and Ethical Basis Upon which our Preparation is Issued.**—  
We profess no exclusive ownership in the same; have not sought to conceal the nature

of its ingredients; and no directions or other printed matter are furnished in any way calculated to assist the patient to prescribe for himself, and thus dispense with the services of the physician.

**Price.**—As is well known, we never advance the cheapness of a medicinal preparation as its sole or chief claim for patronage. We are also opposed to the creation of fictitious prices, whether based on the *copyright, trade-mark* and *patent law*, or any "corner" in a drug or preparation, suddenly created by an unexpected demand therefor. We hold that the only proper basis of any list is the cost of material and manufacture, reference being had, of course, to a just margin of profit; and the prices of our preparations have always been as low as was consistent with their production by the best approved processes, from the finest quality of material attainable. In pursuance of this policy, we listed our Alterative Compound, in the first instance, at the comparatively low rate of \$1.25 per pint, although we were perfectly aware of the fact that the *extensive demand* for this preparation would warrant a much higher price.

**Quality.**—In this respect we have simply pursued our custom of using the utmost care and the best material attainable in the manufacture of our Alterative Compound, and our facilities are such that we confidently invite a comparative test with any other brand in the market.

To physicians desiring our preparation issued on their prescriptions, we would respectfully suggest that they designate "Alterative Compound, P., D. & Co.," and insist that there should be no substitution therefor.

Our preparation may be procured of wholesale and retail druggists generally, but to any physician who cannot readily supply himself from these sources, we will be pleased to send, securely packed, per express, one pint of Alterative Compound on receipt of the list price therefor (\$1.25).

Park, Davis & Co.

DETROIT, December 26, 1883.

# FORMULA FOR SYPHILIS

As Recommended by the late J. Marion Sims.

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(REPRINT FROM AN EDITORIAL IN THE THERAPEUTIC GAZETTE, MAY, 1883, PAGE 203.)

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The article on the treatment of syphilis communicated by Dr. J. Marion Sims to the British Medical Journal of March 10th, and reproduced on page 164 of our last issue, is deserving of especial notice for several reasons, among which we shall note the following: 1. The nature and source of the formula which it contains; 2. The fact of Dr. Sims' communication of it to the profession; and 3, the medium of his communication.

The formula was originally something of a hodge-podge and contained a number of inert ingredients. Taken by itself it would find little favor with the scientific pharmacist or the physiological therapist. Notwithstanding this fact its empirical employment by the most ignorant of people, Indians and slaves, was followed by results which were strikingly beneficial, and in many instances, after educated physicians had failed to effect improvement. The tendency of the scientific therapist, so-called, is to ignore formulæ thus employed, and to prescribe nothing to the therapeutic action of which physiological experiments have not paved the way. As a rule this is, doubtless, in the line of progress and conducive to the establishment of therapeutics as an exact science. The case before us is, however, but another instance admonishing us of the fact that the rule is not one to which there are no exceptions. The grand aim of medicine is to assist in restoring normal function. It is, unquestionably, best that it do so *secundem artem*, but the means should never be suffered to defeat the end. Rules are valuable as means; they defeat their purpose when they dominate. This must ever be the case until medicine becomes established as an exact science—a time quite indefinitely in the future. When he ignored rules, and recognized the fact that this formula cured syphilis, its introducer proved himself of the kind to whom medicine is most indebted for its advancement from its original condition of empiricism. Having observed the fact that syphilitics improved under the Creek Indian treatment, he determined, in the same spirit that Jenner inquired into the protective influence of cow-pox, to look into the matter. He found the formula in crude shape, and bringing to bear on it the knowledge of the schools, he reduced it to scientific shape by eliminating its inert constituents, and more effectually extracting the virtues of its active ingredients. Much, and some of the most important, of our knowledge of the therapeutic properties of drugs is of similar origin, the hint being derived from their empirical use, and the virtues being developed by intelligent experiment. Medicine is of very ancient origin, and its dawning was by no means in the physiological laboratory. For ages counter to which neither the memory of man nor his records run, empiricism was at work and many therapeutic truths thus became crystallized in the very being of the race. In the progress of time, they have in many instances become considerably distorted, and have come down to us even in the form of superstitions, but it is safe to assume that, in every instance, they are based on

a tolerably secure foundation. It is only the medical dilettante who ignores even the most superstitious belief in the virtue of any particular drug or therapeutical device. Those of his class would have put the Creek Indian formula aside, with a contemptuous sneer, for what possible benefit could there be in the salt, alum, iron slugs, etc., which entered into it? The keen observer, however, having noticed results, made closer scrutiny for the cause, and bringing to bear on the formula his scientific knowledge, he eliminated the inert and incompatible constituents and reduced it to proper form, and thus in this matter set an example worthy of emulation.

The fact of Dr. Sims' communication of this formula to the profession is noteworthy. Unfortunately, medical men are too much influenced by authorities. Valuable facts have not infrequently been known to fail of legitimate recognition for no better reason than that they have been announced by those whose names afforded them no backing. \* \* \* \* \*

We are very much pleased to note the appearance of the article referred to in the columns of the British Medical Journal, the organ of the British Medical Association, and unsurpassed for all the essentials of a leading medical journal. It augurs well to have a periodical of its standing thus become the medium of conveying to the profession information of this nature. Our leading medical journals are too prone to regard as unworthy of notice empirical facts or therapeutic knowledge which is not based on physiological or chemical observations. There are rich storehouses of experience on which these journals might draw with inestimable benefit, particularly to therapeutics. It is, we take it, by no means *infra dig.* to discover, if we may, what of value there is in the hodge-podge of the Indian medicine man, or in the compound of the proverbial old woman.

# The Treatment of Syphilis.

(REPRINT OF AN ARTICLE BY DR. J. MARION SIMS, IN THE BRITISH MEDICAL JOURNAL, MARCH 10, 1883.)

More than forty years ago, I practiced medicine in Montgomery County, Alabama, near the Creek nation of Indians. Syphilis was then very prevalent among them, and their medicine-men had the reputation of speedily curing it. Their remedies were, of course, decoctions of native herbs. It was generally known that queen's delight (*Stillingia sylvatica*) was one of their principal agents. I had supposed that, when this tribe were removed west of the Mississippi in 1837, their secret of curing syphilis had gone with them; but, when I was in Alabama last year, I learned from my brother-in-law, Dr. B. Rush Jones, of Montgomery, the following facts touching this question:

There were, he said, seven or eight years before our civil war, several obstinate cases of secondary syphilis in and around Montgomery, which resisted the usual remedies in the hands of our best physicians. They went the round of the doctors, and could not be cured. At last, one of these was advised to consult a colored man, Lawson, belonging to Mr. N. D. Barnett, a cotton-planter residing in Montgomery County. In a state of despair, he went to see Lawson, put himself under his treatment, and in a few weeks he was perfectly cured. He returned to town rejoicing at his recovery, and soon others of his fellow-sufferers followed his example, went to consult the colored man, Lawson, and were likewise cured. These cures by an obscure negro man, a slave, when the highest representatives of science had failed, were much spoken of in both town and country, and attracted the attention of Dr. George W. McDade, a very intelligent and accomplished physician whom I have known since his early boyhood. Dr. McDade, feeling the greatest interest in the subject, went to see Lawson, who had made the marvelous cures, and obtained from him the formula he had been using so successfully.

Soon after this McDade happened to meet Dr. James Freeny, who gave him the following history of the so-called Indian method of treating syphilis: Hoface King, a mulatto slave, resided among the Creek Indians for several years before they were removed west of the Mississippi river (1837), and had learned from them their method of treating syphilis. While Horace was engaged in building a bridge at Tallassee, about twenty-five miles from Montgomery, in 1852, he heard that there were many cases of syphilis on Mr. Gipson's plantation near by, and that Drs. Freeny and Banks were the attending physicians; and he called on Dr. Freeny, and told him that he had learned a method of treating syphilis from the Creek Indians, which was universally successful, and that he would like to show it to him. And for this purpose he proposed to take the worst cases on the Gipson plantation for the experiment. Drs. Freeny and Banks selected a certain number of very bad cases, and turned them over to Horace, and they watched from day to day his method, while they continued their own plan with the other cases.

Horace's selected bad cases recovered more rapidly than Dr. Freeny's milder ones, and then Dr. Freeny adopted the Indian method in the other cases on the Gipson plantation, and has not pursued any other plan since.

So thoroughly convinced was Dr. Freeny of the superiority of the Indian remedy, that he wrote to Dr. Warren Stone, Professor of Surgery in the University of Louisiana, urging him to give it a trial in the wards of the great Charity Hospital of that city.

Dr. Freeny failed to enlist the interest of Prof. Warren Stone in the matter, and he made no further effort to bring it before the profession, except by speaking of it to his brethren in his immediate neighborhood.

After Horace's success on the plantation of Mr. Gipson, and the adoption of his method by the two well known physicians, Drs. Freeny and Banks, Mr. Nicholas D. Barnett, a large cotton-planter, sent his servant Lawson, a very intelligent man (before alluded to), to Horace King to learn his remedies, and the method of preparing and using them. Horace readily imparted the desired information, and Lawson returned home, and put the treatment to the test among the negroes on his master's plantation. It was as successful in the hands of Lawson as it had been in those of Horace King.

After a while, other planters in Mr. Barnett's neighborhood followed his example, and set apart confidential servants to take charge of syphilitic cases, and treat them with the Indian decoction. And thus several adjoining plantations had each its negro doctor, all using the same method with equal success.

This was in a rich section of Montgomery county, where there were many large cotton plantations in juxtaposition; some of one thousand acres, some of two thousand and more, having from one to two or three hundred slaves on each, while there were others of less size with fewer slaves.

On some plantations—notably on Mr. Barnett's—the syphilitic cases, male and female, were sent to a hospital specially set apart for the purpose, and there quarantined till they were cured. They were, during the period of treatment, wholly cut off from all communication with the other negroes on the plantation. This was in the time of slavery, when the intelligent and humane master had the right to protect his people against infectious diseases of all sorts. Syphilis was thus controlled, and small-pox effectually stamped out, because the sanitary state of the plantation was intrusted to medical men of the highest intelligence, who were authorized by the master to do all that was necessary for the health of the community.

Dr. McDade says: "It is very remarkable how few cases of secondary syphilis, scrofula, and consumption existed in those days among the negroes; but since emancipation they are very common."

"Is secondary syphilis the parent of scrofula and consumption? Certainly, these were rarely seen among the negroes while in slavery; whereas they are now encountered every day. Secondary syphilis was then less frequent among them than now, because their masters took every precaution for their early treatment and cure. But now the negro is free to contract this loathsome disease, and to scatter it as he may. You may ask, why are they not treated? I answer, many never apply for treatment. Physicians, always the conservators of the public health, never here refuse to treat a case of syphilis because the subject of it is a freedman, poor and improvident."

Professor Samuel D. Gross read an exhaustive paper on the connection between syphilis and scrofula and consumption, before the American Medical Association in 1875, advocating the view that the two latter were the offspring of syphilis, and it would now appear that the history of these in the negro, in slavery and in freedom, goes far to establish the correctness of the views so forcibly set forth by my distinguished countryman.

Dr. McDade says that "the remedies used by Lawson on Mr. Barnett's plantation, were the same as those used by Horace King. They consisted of ten or a dozen indigenous roots, a handful of each, with a certain quantity of salt, alum, and iron slugs put into three gallons of water, and boiled down to one gallon. Of this the patient took a half pint three times a day. There was also a decoction of roots for washing the syphilitic sores. After obtaining these prescriptions, it was a long time before I made any trial of their virtues. I was deterred by the fact that it would be difficult for any patient to drink and retain half a pint, three times a day, of such a vile decoction. The horrors of syphilis could alone inspire a man with courage to take it. However, I saw that those who did were invariably relieved, whether in the first, second, or third stage of the disease."

"Instead of adopting the so called Indian remedy as I found it, I began by eliminating the alum, salt, iron nails and slugs, and all the roots and herbs that I knew must be absolutely inert. I selected the few among them known to possess medicinal properties; and, instead of making a decoction as had been done before, and which had to be made in large quantities every day or two, I had them prepared in the form of fluid extracts, which places the remedy on a scientific basis, and insures uniformity of action. The following is the formula that I and my medical friends have been using for many years":

"Fluid extract of *Smilax sarsaparilla*, fluid extract of *stillingia sylvatica* (queen's delight), fluid extract of *lappa minor* (burdock), fluid extract of *phytolacca decandra* (poke root), ʒi j, tincture of *xanthoxylum carolinianum* (prickly ash), ʒj. Take a teaspoonful in water three times a day before meals, and gradually increase to tablespoonful doses.

"In making the fluid extracts there is some risk of getting a remedy less efficient than the original Indian decoction, because the manufacturer may use roots that have been kept too long, and lost some of their active principles, while the decoction used on the plantations was always made of fresh roots just gathered from the woods. In making the fluid extracts, we should therefore be careful to have them made from roots recently gathered." While Dr. McDade makes fluid extracts of four of his ingredients, he makes a tincture of the fifth. I do not understand why he did not order a fluid extract of that also. I simply give the prescription as it was given to me by Dr. McDade and Dr. Rush Jones.

*Stillingia sylvatica* has long been used in the Southern States as an antisyphilitic remedy by both the profession and the laity. Professor Thomas Y. Simons, of Charleston, was the first to call our attention to it (*American Medical Recorder*, 1828). His favorable report was subsequently confirmed by Professor Henry R. Frost, of Charleston, and by Dr. A. Lopez, of Mobile, Alabama (*New Orleans Medical and Surgical Journal*, 1846). Dr. Frost thinks the active principle of the *Stillingia* is somewhat volatile, and says that the root loses much of its activity when kept long. I know that the odor of the recent root is much stronger than the dried. I presume the *stillingia sylvatica* and the *smilax sarsaparilla* are efficient agents in McDade's compound fluid extract. Dr. McDade says: "I could detail many cases illustrating the wonderful antisyphilitic powers of this remedy, but I will give you only two: 1. A young negress contracted syphilis from her husband, who resided on a neighboring plantation and visited his wife generally about twice a week. This was long before the war (1851). They were both treated by the late Dr. Alfred McDonald, and they were apparently cured. But they had several children subsequent, and in rapid succession, all of whom died of syphilis soon after birth. The husband and wife were then treated by the Indian decoction, and were permanently cured, as shown by the fact that they had several healthy children afterwards at full term, who grew to manhood and to womanhood. None of them ever showed any signs of syphilis, nor have any of their children. Those of them who have died, died of other diseases of a climatic character."

"2. A negro girl, twenty years old, belonging to Mr. Cobb, had syphilitic iritis. This case had resisted all treatment by the best physicians of the country. She was nearly blind. She was taken in charge by Mr. Barnett's colored man, Lawson, who gave her the Indian remedy, and she was perfectly and permanently cured, as she never afterwards showed any symptom of the disease. These cases occurred more than twenty-five years ago, and have been under my observation ever since, so you will see that the cures are permanent."

"Mr. Barnett has pursued the same method on his plantation since emancipation that he did during slavery. His man Lawson uses the same compound decoction now that he did in olden times, and cures many cases every year on Mr. Barnett's plantation, and on those adjoining."

Dr. McDade has used his compound as an alterative with great success in scrofula, and he thinks it would be worth trying in some forms of cancer.

Dr. Rush Jones, residing in the city of Montgomery, has a larger field of observation than Dr. McDade, residing in the country, and has really had a larger experience with McDade's antisyphilitic fluid extract than anyone else; and he speaks most favorably of it. He has been treating syphilis for more than forty years, and he says he now has but little dread of undertaking the worst cases, since he has adopted the use of McDade's formula. He repudiates mercury and the iodide of potassium entirely, and says they are unnecessary when McDade's formula is used.

Dr. Rush Jones says: "It is a remarkable fact that I do not see more than one case of syphilis in women to fifty cases in the male. I have inquired of a number of physicians in regard to this fact, and their experience coincides with mine. How can this be accounted for?"

I am not familiar with the literature of syphilis, and do not know if the fact alluded to by Dr. Rush Jones has been observed in other parts of the world. If so, it seems to me to have an important bearing on the practical application of the Contagious Diseases Act. And so would the complete history of the working of the quarantine and isolation of infected negroes on the several cotton plantations in Montgomery county,

Alabama, during the time of slavery and since emancipation, if we could obtain minute and reliable reports on the subject.

I am no authority on the subject of syphilis; and, if any apology were necessary for this communication, it is this:

I was at the meeting of the London Medical Society on November 26th last and heard the discussion on the papers of Dr. Drysdale and Dr. Routh on syphilis. From this, it appeared that we now differ as widely on the subject of its treatment, as we did fifty years ago.

# Permanganate of Potash and Binoxide of Manganese.

## NEW REMEDIES IN AMENORRHŒA.

In response to the suggestions of many of our patrons, we herewith present reprints of the several articles which have, within the past twelve months, served to demonstrate the value of permanganate of potash and binoxide of manganese in amenorrhœa and kindred affections, and we take the liberty in this connection to call the attention of the medical profession to our pills of these salts, as per the following

### PRICE LIST :

	Per bottle of 100.	Per bottle of 500.
Pil Potassium Permanganate, 1 gr. Sugar coated only.....	\$1.00	\$4.85
Pil Manganese Binoxide, 1 gr. Sugar coated only.....	1.00	4.85

The permanganate of potash, as is well known, is extremely liable to deoxydation in the presence of organic matter. This fact has rendered it necessary that none of the excipients usually employed in making pills should be made use of in making pills of this salt. In our manufacture of these pills an inorganic excipient is exclusively employed, which fact, together with the nature of the coating which we apply, makes our brand of permanganate of potash pills perfectly stable. *Therefore, in ordering permanganate of potash or binoxide of manganese pills, please specify P., D. & Co., and thus secure a preparation free from the liability to deoxydize.*

From the numerous inquiries which we have received for "Permanganate of Potash and Binoxide of Manganese Pills," there seems to be an impression that these pills are manufactured in combination, whereas they can only be furnished in accordance with the above list.

We respectfully solicit a trial of these pills, and especially a critical comparison with any other brand on the market.

*Parke, Davis & Co.*

## Permanganate of Potash in Amenorrhœa.

Apropos of the question touching the unreliability of the agents at our disposal for reëstablishment of the menstrual flow, which has agitated the columns of this journal for some time, we would call attention to the claims recently advanced for permanganate of potash by that twain of progressive therapeutists, Drs. Ringer and Murrell. In an article in the *Lancet* of the 6th ult. they give a synoptical statement of results which certainly argues very strongly for this drug as an emmenagogue regarding whose activity there can be no question. Their observations have extended over a period of thirteen months and their conclusions are based on notes of sixty-nine cases, the majority of which are hospital patients. Their rule has been first to discover the menstrual history of the patient and then to give the salt for three or four days prior to the expected period. The most striking results have been noted in young women between the ages of eighteen and twenty-five, who from some accidental or trivial cause, such as catching cold or getting wet, have missed once or twice after having been regular. In the case of country girls who have "seen nothing" for a month or two after coming to town, the treatment has answered admirably. While a few days' treatment will usually be found sufficient it will be necessary sometimes to continue it for weeks. In the irregularity occurring during lactation after, say eight or ten months' nursing, the remedy is also valuable. In the amenorrhœa of phthisis it is useless. While care should be exercised in the case of suppression from pregnancy the authors do not think that in the doses which they recommend the drug has any power to produce abortion. They attribute the emmenagogue properties of the salt to its manganese, and not to the potash, as is shown in the fact that the manganate of soda and the binoxide of manganese are equally efficacious. Their method is to give the permanganate of potash in doses of from one to two grains three or four times a day. The treatment succeeds equally well in the plethoric and the anæmic. In chlorosis it sometimes brings on the menses without improving the anæmia.

## Manganese in the Treatment of Amenorrhœa.

We are desirous of calling attention to the value of a very simple remedy in a very common complaint. For some time past we have used permanganate of potash with much success in the treatment of certain forms of amenorrhœa, and are satisfied of its value. Our observations have extended over a period of thirteen months, and we have now notes of sixty-nine cases. The majority occurred in hospital practice, but some were private patients. A small number remained under observation for a few weeks only, but the majority continued to attend for a much longer period; so that in some instances we have a complete record of the menstrual history for a year or more. In some cases the amenorrhœa was the cause of the patient seeking advice; in others its existence was mentioned incidentally, the patient suffering from some other complaint. Our cases are such as come under the care of the general as distinguished from the obstetric physician, and do not include those requiring operative interference. As a rule we refrained from making a vaginal examination, but with this exception our notes are complete. We have used the permanganate in two forms, first the pharmacopœial solution, and secondly the permanganate made into pills, each containing either one or two grains. Generally we begin with a grain three times, and then gradually increase the dose to two grains four times a day. Our most striking results have been obtained with the larger doses; a large dose sometimes succeeding admirably after the failure of a small one. Before commencing treatment we inquire carefully into the menstrual history of the patient, and as a rule give the remedy only for the three or four days immediately preceding the expected period, but should it fail to produce the desired effect we direct the patient to continue steadily taking it, and in some cases it has been taken continuously for nearly three months. In our experimental observations we have given the one drug only and have done nothing in the way of accessory treatment. Our most striking results have been obtained in young women between the ages of eighteen and twenty-five, who from some accidental or trivial cause, such as catching cold or getting wet, have "missed" once or twice after having been regular. The administration of one or two grains of permanganate of potash in pill three or four times a day for a few days before the time of the expected period will bring on the flow almost to a certainty. In some instances the periods were brought on after the patient had ceased menstruating for over a year. In the case of country girls who have "seen nothing" for a month or two after coming to town the treatment has answered admirably. Often enough patients do not consult their doctor until they are "overdue," until the time of the expected period has passed by for some days. Even then the prompt administration of permanganate will often bring on the flow at once, but should it fail to do so the treatment ought to be continued, and the patient will probably menstruate normally at the next monthly time. Generally our efforts are not crowned with success until the medicine has been taken for at least three or four days, but in some instances the permanganate acted with striking rapidity, the menstrual flow making its appearance after only two or three doses had been taken. It is not necessary to discontinue the treatment on the appearance of the menses; in fact, we generally tell the patient to continue taking the pills three or four days longer, finding that it facilitates the flow. The permanganate often succeeds well after the failure of other remedies, such as iron, aloes, nux vomica, strychnia, pulsatilla, nitro-glycerine, and hot mustard baths. Sometimes, however, it is necessary to give it for six weeks or even longer before the desired result is obtained. In those cases where the patient has menstruated only once or twice, and has then entirely ceased for some months, our treatment answers well; the

menstrual function is re-established, and thenceforth proceeds normally at every successive monthly period. In some cases there was no actual amenorrhœa but the flow was scanty, lasting perhaps only a single day, or it may be only a few hours. Here the administration of the permanganate prolonged the flow, and even in some instances when it had ceased brought it on again.

In girls of about fifteen or sixteen, who have never menstruated at all, the permanganate, as might be expected, is not so certain in its action; but even here it not infrequently acts promptly, bringing on the flow at once. In some cases where the general health was bad, and the permanganate had failed, we suspended treatment for a time, and sent the patients into the country for a month. On their return we gave the permanganate a second trial, and it succeeded at once. We have, however, sometimes failed to bring on the menstrual flow even when the patient was in fairly good health, and when there were the usual indications of puberty.

It is not only in the case of young women that manganese is so useful; it succeeds almost equally well with women between thirty-five and forty, who, as the result of many pregnancies and much suckling, have ceased to be regular. Here, for example, is a typical case. A married woman came to us complaining that she was never regular. She had had nine children in as many years, and rarely saw anything more than once between her pregnancies. She had been suckling for eight months, and had not been poorly for seventeen months—the nine months she had carried and the eight months she had suckled. She was not in the family way, but said she expected she would be soon if she weaned the baby. She did not know when she ought to be poorly, and had given up all expectation of seeing anything. She was ordered two one-grain permanganate of potash pills four times a day, and came on poorly a fortnight after, the first time for seventeen months.

We need hardly say that before treating the amenorrhœa care should be taken to see that the patient is not pregnant, although we are satisfied that the permanganate given in the dose we recommend has no power to produce abortion either in the early or late stages of pregnancy. We find that manganese fails to induce the flow when the amenorrhœa is due to advanced phthisis. But in some cases of arrested phthisis the treatment was successful, and the patient, after a time, under the influence of the permanganate, menstruated freely and at regular intervals. In several instances patients informed us that the pills had proved of value in curing "whites" of long standing. As a rule the permanganate is taken without difficulty, but patients much prefer the pills to the solution. The solution is peculiarly disagreeable to take, and in some cases produces nausea and even vomiting. Patients frequently complained after taking the pills of a heavy persistent pain over the upper part of the sternum, "as if something had stuck there and would not go down." This was not due to the drug being given in the form of a pill, for the same complaint was made when the same dose was given in solution. One patient said the pain was of a burning character, and another said it was like heartburn. A girl of sixteen, to whom two two-grain permanganate of potash pills were given four times a day, said the pain, "like a lump at the chest," came on immediately after each dose, and was so intense that she had to go to bed for two hours.

That the effects we have described are due to the manganese, and not to the potash in the salt, is shown by the fact that manganate of soda and binocide of manganese are equally efficacious in the treatment of amenorrhœa. The manganate of soda was given in two-grain pills, two four times a day; and the binocide in four grain pills, one four times a day. It may be thought that the manganese acts by improving the condition of the blood, but this is not the case. The treatment succeeds equally well in the plethoric and in the anæmic. Given in cases of chlorosis, the permanganate not infrequently brings on the period without in any way improving the anæmia.

[Article by Dr. W. H. Broadbent, in the London, Eng., Lancet, Jan. 27, 1883.]

## Manganese in Anæmia.

The investigations of Drs. Ringer and Murrell on the therapeutic effects of manganese in amenorrhœa remind me of experiments which I made in 1867-68 as to the influence of manganese, nickel, and zinc in anæmia, chlorosis, etc., in which similar favorable results were obtained. Quoting from the Transactions of the Clinical Society for 1868-69, Vol. II., p. 122:—

"The experiments were undertaken primarily to test an hypothesis arrived at deductively. The starting point was founded on the two postulates: (1) That there must be some relation between the substance administered and the organism on which the effects produced depend; (2) that so far as the substance is concerned the basis of this relation can only be its chemical properties, using this term in its widest sense. The conclusion arising out of these which constitute the hypothesis to be examined was: (3) That substances closely allied chemically must have an analogous action on the system, or the diversity in their operation should be capable of explanation on chemical principles. In other words, chemical groups ought to form therapeutical groups. No fact in therapeutics is more certain than that iron cures anæmia and chlorosis, and this metal stands at the centre of a group closely allied in chemical properties, which have to it certain well-defined relations. This group, then, furnished the conditions requisite for experiments which might support or overthrow the hypothesis. A second object also offered itself, which a few remarks will explain. The usual interpretation of the good effect of iron in anæmia is that it supplies a natural constituent of the blood which is deficient. This, however, if a true explanation at all (which is strenuously denied by some eminent men on grounds which need not be enumerated here), carries us back but a very short step towards a real comprehension of the mode of action of iron. To attain this the question must be answered, why iron is a normal constituent of the blood. The answer is not given by simply enumerating the uses which it serves. As understood by me, iron is normally present in the blood, because of the chemical affinity between it and the organic matter of the blood corpuscles, and it is useful in virtue of the influence which this affinity exerts on the organic processes. According to this view, then, iron does not cure anæmia because it is a constituent of healthy blood—*i. e.*, the two do not stand in the relation of cause and effect; but the cure of anæmia and the presence of iron in the blood are alike consequences of the affinity of iron for organic matter and of the influence of this affinity on organic operations. If the mode of action of iron be that indicated, then an allied metal, having similar relations with the organic proximate principles, will have a similar effect on the organic processes; and it may be that under certain circumstances its curative influence may be even superior to that of iron. This, however, is inherently improbable; but it is not at all unlikely that by the administration together with iron of one or other of the allied metals, the action of the iron may be aided. The object, then, was to ascertain, if possible, the indications for the employment of a particular member of the group as an accessory to iron in any class of cases. Manganese and nickel stand on one side of iron, the other on the other, as to their general chemical relations; and it seems worthy of attention, should it be found that they exerted any favorable influence at all, to endeavor to determine what special set of symptoms associated with anæmia indicated the addition of one or other of them to iron."

The metals were administered in the form of chloride, and cases are related in

which both manganese and nickel cured anæmia as promptly as iron could have done it, while zinc failed. Manganese did good whether the anæmia was associated with amenorrhœa or menorrhagia, from which I conclude that the favorable effect of manganese is attributable to its influence on the general health and on the blood, and not to any special effect on the catamenia; but I found that, "in using these metals as accessories to iron, manganese seemed to have a special influence in promoting the return of the catamenia, and nickel a special property of checking leucorrhœa."

Drs. Ringer and Murrell by their experiments on the comparative effects of salts of sodium, potassium, and ammonium, and of the arsenites and arseniates, are rendering services to scientific therapeutics, the value of which can scarcely be estimated. When alkalies or salines are indicated, it is not a matter of indifference what base we employ. Almost the only property common to potash and soda is their power of combining with and neutralizing acids; in their relations with the important organic constituents of the body, nerve, muscle, blood-corpuses, and albumen, they differ completely. Their similarity is apparent only, and from their physiological effects alone we might conclude that they were respectively the alkaline members of different series of metals. Carbonate of potash and of soda will alike neutralize free acid in the stomach, but after absorption their combinations with the blood and the whole of their course and work in the system will be different. The researches of Drs. Ringer and Murrell, therefore, have a bearing on practical therapeutics; but, more important than this, more important than the guidance they afford in the employment of different preparations of arsenic, more important than the introduction of an additional remedy for amenorrhœa in manganese, is the coordination of therapeutics with chemistry and the advance made towards the scientific basis of medicine.

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[Article by Franklin H. Martin M. D., of Chicago, Ill., in the Medical Record, Sept. 29, 1883.]

## Manganese as a Stimulant of the Menstrual Organs and as a Remedy in Certain Forms of Amenorrhœa and Menorrhagia or Metrorrhagia.

Since Ringer and Murrell, of London, called the attention of the profession to the gratifying results obtained in experiments performed by them (Lancet, Jan. 6, 1883) in the treatment of certain forms of amenorrhœa by permanganate of potash, I have taken advantage of every opportunity that has been afforded me, both in dispensary and private practice, to satisfy myself as to the action and efficacy of the new remedy in that direction. I have been more than gratified with the result. I have found that manganese will not only relieve certain forms of amenorrhœa, but also of menorrhagia and metrorrhagia. It is, of course, unnecessary to say manganese, or any other one remedy, cannot be expected to relieve all cases of amenorrhœa or menorrhagia, when each is dependent upon so many different causes. As amenorrhœa is only a symptom, not a disease, it would have been much more satisfactory if Ringer and Murrell, in their little article, had mentioned with greater explicitness the peculiar forms of amenorrhœa in which they found their remedy to exert its great influence.

From my observations I have been led to consider manganese in any form a direct stimulant to the uterus and its appendages. It may exert this influence by acting as a direct vasomotor nerve-stimulant to the vascular system of the parts, and in consequence of the improved circulation directly increase the tone and nutrition of the organs, or it may exert its whole force through stimulation of the sexual nerve-ganglia, or even possibly the sexual *nerve-centres* thereby bringing the organs to their normal state of action. At any rate, its action is prompt and direct. In bringing the uterus and appendages to a normal state of menstrual tonicity when the lack of tone is de-

pendent upon some previous depression of innervation, manganese, in my opinion, certainly has no equal. Even when the cause of the depressed innervation is still acting, this remedy will exert its stimulating power over the menstrual mechanism. In consequence of phthisis, menstruation had not occurred in a young woman, eighteen years of age, for four months. Experimentally the manganese was given in connection with her other treatment. Menstruation occurred within a week. Another young woman, twenty-four years of age, with an aggravating digestive trouble of some years' standing, had become very irregular—flowing profusely for a week or two, then scantily for an equally irregular time, again followed, perhaps without any warning, by a profuse flow or as likely a complete cessation. This state of affairs had been going on for more than a year. There was no pain with the flow. She was very weak and anæmic from the effects of indigestion and loss of blood. This patient was given two grains of the permanganate of potash, dissolved in one-half glass of hot water every night on retiring. It was kindly received in this way by the irritable digestive organs. In a very short time there was a decided improvement in the menstrual trouble, and the patient has since menstruated three times normally.

In young girls who are irregular in the early months of menstrual life, where it is simply caused by the natural weakness of the partially developed organs of generation, or where, from an overworked nervous system, the organs are robbed of their natural nerve force, this remedy seems to possess the stimulating properties requisite to bring them into healthy action. A remarkable case of this kind was that of a young girl who had menstruated once. Eight months had passed, and the menstrual flow had failed to appear again. The mother of the girl, being alarmed, sought advice. The permanganate was given in two-grain doses twice a day. Within a week the girl menstruated the second time in her life. In two other cases of "missing" in young girls, without any apparent cause, or any other symptoms, the remedy given in the same doses a few days before the next regular period was expected, stimulated the organs to a normal flow. The action of the manganese was so prompt in these cases that I am convinced it was no mere coincidence.

It is well known that from exposure to cold the weakest organs of the body are the ones most liable to suffer. A woman, who, when exposed to cold, immediately suffers suppression, cessation, or excess of the menstrual flow, will invariably be found to possess susceptible and weak menstrual organs. In cases of this kind, viz., suppression, cessation, or excess of the menstrual flow, caused by "catching cold," with no other apparent cause, the most gratifying and prompt results are obtained from manganese. The above variety of cases are of so frequent occurrence that in them I have numerous opportunities to test the new remedy, and I have yet to see it fail, in either amenorrhœa or menorrhagia, when due to the irritation of cold alone. In several cases where the flow was a week or ten days overdue, from "catching cold," the permanganate was given in large doses, and its almost magical effect demonstrated by the flow appearing within twelve hours.

Although I have had greater opportunities for testing the value of manganese in amenorrhœa than in menorrhagia or metrorrhagia, I have received unmistakable evidence of its power in the latter forms of menstrual trouble.

Menorrhagia and amenorrhœa in their outer manifestations are exactly opposite in nature, but they are very often dependent upon the same causes. When the cause is anæmia, or any depressing constitutional disease producing a perversion of the functional activity of the menstrual organs, and this perverted action consists of an irregular or excessive flow, this condition will as readily succumb to the stimulating effect of manganese as when the opposite condition exists. The following cases are of interest: A woman, aged twenty-six, sought advice for excessive and irregular flowing. She had been married two years and had one child, twelve months old. The child was large and strong, the mother physically slight. The mother nursed the child. For ten months she had stood the strain very well, when she commenced to fail, suddenly grew weak and anæmic, and began to flow excessively. This continued with but a few short irregular remissions until I saw her at the dispensary. She was given two-grain doses of the permanganate of potash four times a day, at the same time all other treatment was withheld. In three days the patient returned saying that the flow had stopped the next day after receiving her medicine. I then discontinued the manganese, prescribed iron and nourishing food and continued to improve. By digital examination nothing abnormal was found in the above case. Another case was that of a large, stout woman, thirty-five years of age, who came to the dispensary suffering from menorrhagia. Her

menstrual periods were regular as to time but the quantity of blood was alarmingly excessive and would last for two weeks. She was married, had three children, the youngest three years of age. This abnormal condition of menstruation had been coming on by degrees for a year. The uterus was a little enlarged, and soft to the touch, otherwise, by physical examination, nothing abnormal. Four days before the expected flow she commenced taking the permanganate in two-grain doses three times a day. Menstruation came on at the expected time, and after a normally free flow for four days passed off naturally. Before the next period the same treatment was repeated, with the same marvellous result.

I have been particular to give here only typical cases. In a number of other cases I have received very gratifying results, and I am myself convinced that in properly selected cases others will be able to obtain like results.

Although manganese, like the allied metals, nickel, zinc, iron, and silver, has a direct influence on the blood as a tonic in anæmia, chlorosis, etc., it cannot be possible, in my opinion, that its peculiar influence on the catamenia can alone depend upon that virtue. To influence the organs of menstruation by acting as a general tonic, would necessarily be a slow process, and the effect would be very gradual. It undoubtedly, however, as a general tonic, has a predilection for these organs. This was noticed and commented upon by W. H. Broadbent, of London, after experiments performed by him, and recorded in the "Proceedings" of the Clinical Society of London, for 1868-69, vol. ii., p. 122: "Manganese," he says, "seemed to have a special influence in promoting the return of the catamenia, and nickel a special property of checking leucorrhœa." But one can readily see by the character of the cases reported by Ringer and Murrell, and myself, that manganese must have a more direct mode of influencing the menstrual organs than by the necessarily slow one of a general tonic. As to what that influence is, I am not prepared to advance any more definite opinions than have already been included in this short article. I shall look with great interest in the future for the results of other experimenters in this direction while personally taking advantage of every opportunity presented to extend my knowledge on the subject.

# SARCO-PEPTONES!

(σαρκῆ, σαρ ος, *flesh*, and πεπτω, *I digest*.)

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In assuming the introduction of this preparation of beef to the notice of our patrons, we desire to state that the properties which we expect will find it favor in the eyes of the profession, lie chiefly in the facts that it is a true food, and that it is presented in readily assimilable and palatable form. In the former respect it differs very materially from beef-tea and the various extracts of beef upon which the profession have relied as upon a broken reed, in the treatment of diseases in which the prime object has been nutrition. In order to more successfully lay the advantages of Sarco-Peptones before the profession, we cannot do better than to present it in contrast with the pseudo-foods whose place it is designed to take. To this end we append herewith a *resumé* of certain physiological facts, and extracts from articles which have recently appeared in the medical press.

In this connection we desire also to state that we will furnish, *gratis*, to those desiring them, fuller printed matter and samples of Sarco-Peptones.

PARKE, DAVIS & CO.

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## Beef-Tea, Beef Preparations and Beef Peptones; Their Nature and Comparative Value in Disease.

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Every medical practitioner frequently meets with cases in which the question of nutrition is paramount to all others.

Milk cannot always be prescribed. A considerable number of patients are found who have always had a natural aversion to it; and many more are in such a debilitated condition that their stomachs will not tolerate it.

What then is the proper nutritious food to be prescribed for them? To give a precise and *scientific* answer to this very important question is the object of this little pamphlet.

Until quite recently it has been the practice to resort in such cases to home-made beef tea and to various solutions of extracts of beef, such as Liebig's Extract of Beef, etc. Even to-day a majority of medical men firmly believe that the broth of beef contains albumen in a quantity sufficient to nourish and to sustain the body during a long period of time, and this belief is also held by nearly the whole community, outside of the medical profession. That such an erroneous view should be maintained by the former is exceedingly remarkable in face of the plain statements to the contrary contained in every reliable work upon Physiology which has been published in recent years. (See Carpenter's Physiology, American Edition, 1876, p. 108 and also other works upon the same subject.)

This error doubtless has cost a great many lives that might have been saved if the true nature and value of beef-tea and beef-extracts had only been understood.

Carpenter, in the place above cited, referring to Liebig's Extract says: "One pound is sufficient to produce 70 pints of good beef-tea, of which each pint contains the soluble ingredients of  $\frac{1}{2}$  pound of beef: Such extract can communicate strong flavor of meat to vegetable soups and contains the more important salts of flesh, *but it must not be supposed that it can supply the place of a corresponding quantity of meat to that from which it is prepared, since it contains but a small proportion of albuminous compounds.*"

And Dr. Edward Smith in his Treatise on Food, p. 88, remarks: "There is but little left in the extract to nourish the body, and the elements which it really possesses, are salts and the flavor of meat, which disguise the real poverty of the substance. If it then be asked why so much of the flesh is thus unused; we answer that only the soluble parts of the meat could be obtained in this form, *whilst the insoluble but most nutritious parts are left behind*, and only such of the soluble parts are retained as do not put on the putrefactive process, and hence *nearly all nutritious matters are excluded*. If it be further asked, whether the popular belief in the value of this food is altogether based upon a fallacy, we answer, no, for it is a valuable addition to other foods, since it yields an agreeable flavor, which leads to the inference, however incorrect, that meat is present. If, however, it be relied upon as a principal article of food for the sick, it will prove a broken staff. All that is required for nutrition should be added to it. Liebig in a letter to the Times, stated, that it was not nutriment in the ordinary sense; and Prof. Almer has shown the small nutritive value of this substance in the 'Transactions of the Medical Society of Upsala, 1868.' No one understood better, than Liebig himself, the short comings of Beef-extract, as an article of nutrition. In the Lancet of November 11th, 1865, he says: 'Were it possible to furnish the market at a reasonable price with a preparation of meat, combining in itself the albuminous together with the extractive principles, such a preparation would have to be preferred to the 'Extractum Carnis' for it would contain all the nutritive constituents of meat.'

The fact must be borne in mind that all the albuminous constituents of meat coagulate at a temperature far below the boiling point of water, consequently a bro<sup>th</sup> a beef-tea or a beef extract prepared by boiling meat with a certain quantity of water can contain only the extractive matters, namely: the flavoring articles, some of the organic and some of the inorganic salts and a small percentage of gelatine.

Cold infusions of meat, especially with a little addition of diluted muriatic acid, give a better result as to the percentage of albumen contained in them; but as Voit, in his Handbuch der Physiologie, edited by Dr. L. Herrmann (6th vol., 1st part, p. 448), has shown, such an infusion, prepared after Liebig's formula, contains only 1.15 percentage of albumen, so that 6 ounces of it contain not more than about half a dram of albumen, certainly a very inadequate supply of that very important constituent of food. It is, of course, not intended to deny that beef tea is of a very high value and often indispensable in the treatment of the sick or debilitated organism. It acts as an excellent tonic, stimulant and appetizer, similar to, and very often better than, alcohol in its different forms, but, we repeat, it does not act as a nutriment (Voit, as above, p. 448 and 453).

For a full discussion of the foregoing propositions we also refer to a pamphlet by J. L. W. Thudichum "On the Origin, Nature and Use of Liebig's Extract of Meat, 1869," and to "Edward King on Foods," in King's International Scientific Series, 1873.

The physiologists in their researches on digestion have found that albumen and albuminates, when brought into the stomach of the living or when acted upon by an

artificial juice, undergo a certain series of modifications, the ultimate result of which is a product called "Peptone." A very lucid explanation of the process will be found in Dalton's Physiology, 7th Ed., p. 159. It is there stated: "If gastric juice from the living animal, or an acidulated solution of pepsin prepared by the above method, be tested at the temperature of 38° C., with different organic matters, it will be found that its action is confined to those of a single class. It has no effect upon starches or fats; but albuminous matters, such as coagulated fibrine, caseine, or white of egg, or tissues mainly composed of albuminous substances, are softened and liquified, and finally digested. The process by which this change takes place is twofold, accomplished by the successive or simultaneous action of the two essential constituents of the secretion. The first effect is produced under the influence of the free acid, by which the albuminous matter is converted into syntonine.

"This substance is soluble in dilute acids, and therefore assumes the liquid state in an acidulated solution; but it is not soluble in pure water nor in solutions of the neutral salts, and it may accordingly be precipitated by neutralization with an alkali. So far, the modification of albumen in the digestive act is comparatively simple. Its further change is due to the presence of pepsin. By the influence of this substance, acting as a ferment, the modified albuminous matter is transformed into peptone. Since peptone is soluble in pure water and in neutral solutions as well as in dilute acids and alkalis, it retains the liquid form, whatever may be the reaction of the fluid in which it is contained. The non-precipitation of the albuminoid matter, on neutralizing the solution, is therefore the indication and measure of its complete transformation in the digestive process.

"As one of the distinctive features of peptone is its diffusibility through animal membranes; it represents the condition of albumen when prepared for absorption by the blood vessels. It is not coagulated by heat, the mineral acids, nor by potassium ferrocyanide, but is thrown down from its solutions by alcohol in excess.

"The characters of peptone are the same, or nearly so, whether it be derived from coagulated fibrine, albumen, caseine, or an organized structure, like muscular or connective tissue. According to Henninger, the only perceptible difference is in its rotatory power on polarized light. All varieties of peptone in solution deviate the plane of polarization toward the left; the amount of rotation being greatest for albumen peptone, while that for fibrine peptone is the least. As to its nature, it is the prevalent opinion among physiological chemists that peptone is a product of hydration, the albuminous molecule uniting with the elements of water under the influence of the gastric ferment. This view is partly based on the elementary composition of peptone and its power of uniting with acids and bases, as compared with albumen. It is also sustained by the experiments of Henninger, who subjected peptone to a process of dehydration by means of anhydrous acetic acid at 80° C., obtaining as the result an albumen-like substance coagulable by heat."

It will be seen from the above, and especially from the convincing and beautiful pamphlet of Dr. Poehl, of St. Petersburg, quoted in an editorial of the New York Medical Record of July 21, 1883, p. 72, that most physiologists hold that peptonization of albumen is a hydration simply and not a process of decomposition, that peptone can be reconverted very easily into albumen and that chemical analysis reveals no characteristic difference between albumen and peptone, and that the optical properties of the two bodies are also entirely alike. This latter part Poehl correctly thinks could not be true if the two bodies presented any real chemical difference.

Acting on the proposition that peptone is only a modification of albumen, Plosz and Gyergyoi, as early as ten years ago, and shortly after them Maly, Adamkiewicz

and others began to make experiments, first on animals and then on man, by substituting peptone for albumen in their food. The remarkable results obtained fully corroborated their expectations. The subjects under experimentation could not only be kept alive but they prospered and increased in weight. A very valuable and full account and criticism of the results of experiments with peptone will be found in the *Révue des Sciences Médicales en France et à l'Étranger*, dirigée par George Hayem, Paris,

Encouraged by the results of such experiments many physicians, especially in Germany, began to use peptone in their practice regularly. In England and in the United States, preëminently through the efforts of J. Milner Fothergill the use of milk and beef, peptonized by pancreatic juice, has been introduced. Though recommended very highly and used a good deal in practice, this form of peptonization has not realized the hopes based upon it. There are three reasons for this:

1. The unreliability of the different preparations, and the want of uniformity.
2. The occurrence of other products such as leucine, and tyrosine as soon as the pancreatic juice begins to act on albumen—products which, as is well known, are not albumen, but merely resultants of decomposition and consequently very low in nutritive value.

Dalton in his book on Physiology, page 173 and 174, says: "It is less easy to judge of the pancreatic juice, as an agent in the solution of albuminous matters. Some writers attribute much importance to this action, owing to its striking character in artificial digestion. But it is hardly safe to assume that these experiments represent fully the phenomena of intestinal digestion. In the alimentary canal a number of different secretions are in operation together or successively, and the properties of each may be more or less modified by the time of its secretion, or the proportion in which it is mingled with the others. The action of pancreatic juice on albuminoids is most marked in an alkaline menstruum, and is diminished or arrested by an acidity less than that of the gastric juice. But the reaction of the small intestine in carnivorous animals, during digestion, is acid. According to Bernard this is always the case. In our own experiments with a duodenal fistula in the dog, the fluids of the intestine became acid as soon as the contents of the stomach began to pass the pylorus. According to Schmidt-Mulheim, who operated by killing the animals at various periods after feeding and examining the intestinal contents, the reaction of the dog's small intestine during the digestion of meat is always acid, usually even to its lowest portions. Moreover, some of the products of artificial digestion do not occur with the same readiness in the intestine of the living animal. In Külme's experiments on the artificial digestion of coagulated fibrine by trypsin solutions, about one-half the peptone produced was further decomposed into other products, especially leucine and tyrosine. In the observations of Schmidt-Mulheim, on the contrary, the acid contents of the small intestine in dogs, during the digestion of meat, were very poor in leucine and tyrosine, but abundant in peptone. He concludes that the digestion of albumen is almost wholly performed by the pepsin ferment in an acid menstruum, that is, by the gastric juice; and that the office of the pancreatic juice in this respect is secondary."

3. The liability of error on the part of the attendants of the sick, in the preparations of the food is pointed out by J. Milner Fothergill. The practitioner knows to his sorrow that only exceptionally can the patient or his attendants be trusted with processes which require any degree of skill.

Perhaps a reason, more important than any of the above is, that only milk gives tolerable results with pancreatic emulsions. Beef does not seem to be acted upon so well. It yields only a slight percentage of peptone and a peptone of poor flavor.

A number of chemists in Europe and in the United States have brought into the market preparations of beef, peptone in order to supply the ever growing demand for a diet for the sick, which is both nutritive and palatable. Some of these preparations contain a very high percentage of the peptone, as for instance Witte's, of Rostock, and Chapoteaut's of Paris, others containing very little. Nearly all of them, however, have a nauseous taste. Some makers endeavor to cover up the taste by admixtures of syrups, wine, etc. What was needed was a preparation that should contain the highest obtainable percentage of peptone, in an agreeable and soluble form, and retaining the flavor of beef, without admixtures and without correctives. Such a preparation is, we believe, the one prepared by Ph. Rudisch, under the name of "Sarco-peptones"—from *σάρξ*, *σάρκος*, *flesh*, and *πέπτω*, *I digest*. Its chemical results have been shown by the able article of Dr. Frankl published in the New York Medical Record, of December 1, 1883, p. 592, accompanied by a letter of one of the best living authorities on questions of diet, Prof. A. Jacobi, of New York, and also numerous communications received from distinguished medical gentlemen who have had occasion to use Mr. Rudisch's preparation in their practice.

[EXTRACT FROM ARTICLE BY J. W. FRANKL, M. D., IN MEDICAL RECORD, DEC. 1, 1883.]

\* \* \* \* \* Seeking to place my theoretical deductions upon the basis of practical application, I began the use of one of the preparations of peptonized beef, using for this purpose "Rudisch's" preparation of the "sarco"-peptones.

The careful analysis of Dr. Endemann, of this city, informed me that it contained over thirty-six per cent. of peptones. Further, it was not objectionable in its flavor. My experience has enabled me to collate the following facts, and I am much pleased to state that the results have in many instances exceeded my most sanguine expectations. First, as to the age at which sarco-peptones are admissible: I have used them for four weeks in an infant eighteen months old. Children bear them equally well with adults. Secondly, as to the diseases in which they have been used. Among many cases in which they have been faithfully tried, I refer to the following, not as specially selected, but simply as typical cases: In three cases of typhoid fever; in one the patient was fed exclusively on sarco-peptones for two weeks, and in two cases for six weeks; in two cases of chronic pneumonia, in both cases for four weeks; in one case of acute pneumonia, for eight days exclusively, milk being vomited; in one case of fracture in an aged person, for a week exclusively; in one case of icterus catarrhalis; in two cases of rheumatism, one complicated with Bright's disease, in one used exclusively for four weeks; in four cases of vomiting—one of pregnancy, one of anemia after parturition, one of gastric catarrh after diphtheria, and one of cancer of the stomach, it was used with excellent results; in one case of pelvic peritonitis it was well borne; in one case of post-partum hemorrhage; also in a case of diabetes and gangrene.

The above cases sufficiently well illustrate, first, that the sarco-peptones are borne by the stomach when milk is not retained; secondly, that their nutritive value is beyond that of milk, and of beef broths; judging from the better condition of my patients, thirdly, from its readily assimilable form, even infants can be nourished by it, when milk is rejected. I have caused diligent inquiry to be made among my friends and acquaintances in the profession as to their success in the use of the sarco-peptones. The replies were uniform with my experience. I feel certain, however, that I cannot do more wisely than to quote from a letter from one whose dictum always receives the attention and marked consideration which, coming as it does from such eminent authority, it certainly deserves.

[LETTER FROM PROF. A. JACOBI, M. D., NEW YORK.]

Dr. A. Jacobi says: "I commenced the use of peptonized beef a very short time after Leube taught the preparation and indications of his 'meat solution.' For many years I employed it both by mouth and by rectum; by mouth, either undiluted, by the teaspoonful or dessertspoonful, or diluted in beef broth, or with tomato sauce, etc.; in the rectum, diluted with warm water in different proportions. There are some facts which need not be proven, but which merely require application. Such a fact appears to me the great usefulness of a substance which has already been peptonized, *i. e.*, digested, over one whose claims on the functions of the stomach begin as soon as they enter the stomach. Thus, without going into specifications I remember a few cases of cancer of the pylorus, in which the violent vomiting stopped entirely for some time, and immediately, when nothing but Leube's solution was introduced. These cases occurred even at a time when there was but a single place in New York City where the 'meat solution' was for sale, and when the preparation, in regard to uniformity and reliability, left much to be desired sometimes. This latter circumstance has often deterred me from using it when I might have derived great benefit from its use, but the sad fact will always remain, that the main necessities of the human species in regard to food and medicines are not also the main objects of the individual manufacturer and tradesman.

"I have also used it in cases of thorough hydræmia, slow convalescence, and all those conditions in which the stomach does not prepare its own solvent and digesting fluids. Wherever there is a mucous membrane and lymphatics, a genuine peptone ought to be, and is absorbed. Atrophy of the glands of the stomach, with its absolute aepsia, is one of the best indications for its use. A certain degree of gastric catarrh does not form a contra-indication, least of all, intestinal catarrh.

"Here I desire to direct your attention to the difference in the effects of peptones and 'beef-tea.' In cases of intestinal catarrh with diarrhœa, the latter—so frequently resorted to in general practice—is apt to be injurious by the concentration of salts in it, perhaps also for some other reason; peptone, however, is not only easily tolerated, but is beneficial, for the reason that it is absorbed before it reaches the diseased surface. On the condition of the latter when in contact with peptone or anything else everything depends. An inflamed mucous membrane does not absorb, and therefore to administer peptones in a serious form of gastritis, or to inject it into an inflamed rectum, is worse than letting them alone.

"I believe it took years after Professor Leube's publication before the manufacturing interest became aware that there was 'money' in the preparation of peptones. The meat solution has a very strong aromatic taste and flavor. It is true that some patients take it well and long, but some object to both those properties from the beginning, or get tired of the preparation very soon. These objections have been the reasons for many attempts at producing other preparations of similar nature.

"I have no doubt there are a great many good and reliable ones among them, and the fickleness of the individual taste must often direct the selection of the required article by the physician. I, for my part, have for a long time preferred Rudisch's preparations, particularly his 'Sarco-Peptones.' I have been told that you have experimented a great deal with the same. My reason for preferring it has been, the absolute uniformity and equality of the specimens, and the fact that patients, as a rule, have been willing to take it for a long period in succession. I give it unmixed in teaspoonful or half-teaspoonful doses every half-hour, hour, or two hours, or dilute it with broth, or spread it on stale bread or toast, or mix it with water for rectal injections. For months

I have used no other preparation, being satisfied with having at least one which was reliable. I do not mean to say that there are not just as good and palatable ones besides, but I am guided in my selection of that preparation simply by the fact that I have done well with it and cannot expect to do better.

"Taking it for granted that you desired to hear from me neither reports of cases nor elaborate communications, I submit to you, dear doctor, the above remarks, brief and fragmentary though they may be, as the general result of my personal observations and experience.

"I know that many of my cases of hydræmia, slow convalescence, chronic diseases of the stomach, many cases of gastric dyspepsia, inanition brought about by rachitis and scrofula, and infectious fevers, have been greatly benefited, to say the least, by peptone. Very respectfully yours, A. JACOBI."

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[EXTRACT FROM ARTICLE BY PROF. G. BAUMGARTEN, M. D., ST. LOUIS, IN COURIER OF MEDICINE.]

\* \* \* \* \* Look at the meat, now, that has been spoiled in the making of the tea. All its fiber is left. The bulk of the solids of the meat is myosin; it is this we intend to pay for when we buy butcher's meat; it is this we mean to feed upon when we eat a beef steak. After the preparation of the beef tea, it is thrown away—a little the worse for its treatment, a little tough, insipid, deprived of its salts, yet containing nearly all the "strength" of the meat. The tea has removed from it no nutritious substance, excepting only the mineral salts.

Four fluid ounces of beef tea were dried in a water-bath—not quite perfectly, in order to avoid any possible destruction and hence loss, but rather to allow the error to tell in favor of the beef tea; the residue\* weighing fifty-one grains; *i. e.*, four fluid ounces of beef tea contained fifty-one grains of solid matter.

Nutrition is not to be compared to the effect of medicinal agents, of which a very small amount (in weight) may work very great changes in the behavior of the body; it is a matter of grains and ounces; a small quantity cannot nourish a great deal, no matter what the substance. The daily demand of the body is for so many grains—a good many—of carbon, of hydrogen, of nitrogen, etc., introduced in such compounds as can be made available by the body. To constitute "food," the diet should contain proteid material, organic non-nitrogenous material, and mineral salts. To constitute a nutriment, a substance must contain at least one of these. But a mixture even of "nutriments" is not *food*, unless it contains a due proportion of proteids, because these cannot be replaced by any other substances. Now, beef tea, aside from its nutritious salts, contains none of these things, and hence is not a nutriment, much less, by itself, food.

The utility of beef tea and similar products of the meat is well known to all, but in administering it not only the fact that it does not nourish, but also its uses, are lost sight of. One of the benefits it confers upon a patient is to invite and facilitate the digestion of food; yet how often is the food withheld which by its aid might be digested! How often is the patient starved on beef tea, when he is supposed to be well fed! How often is he supplied with the luxury of beef tea, when the necessaries of life are carefully withheld!

Let the patient have nourishment, and then, if it will do him good, by all means let him *also* have beef tea, and condiments, and wine.

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\* This residue was exhibited to the society, and weighed afterwards.

# SARCO-PEPTONES!

σαρξ, σαρκος—flesh: πεπρω—I digest.

## RUDSCH'S EXTRACT OF PEPTONIZED BEEF.

We desire to state to the medical profession that we have assumed the agency for the sale of the above important preparation, and that we have on hand for distribution, *gratis*, a limited number of samples which we shall be pleased to furnish to physicians who may favor us with their addresses.

This preparation perfectly meets the modern idea of an artificially digested food, as well as that of an extract of meat, being rich in nitrogenous matter in the form of PEPTONES derived from the ALBUMEN of the meat.

"SARCO-PEPTONES" contains not only *all the extractive substances*, organic and inorganic salts of the beef, but also *most of its albuminous portion* converted into a soluble and easily assimilable form, known in Physiology as PEPTONES.

SARCO-PEPTONES cannot be compared either with beef-tea or with the commercial beef extracts after Liebig's formula, for whilst this preparation is a FOOD in the same sense as beef is, the best authorities, including Baron Liebig himself, have demonstrated that Liebig's Extract is only a STIMULANT.

*One part* of SARCO-PEPTONES corresponds in nutritive value to *eight parts* of fresh beef.

All the objectionable features of artificially digested meats heretofore offered to the profession and the public have been overcome in SARCO-PEPTONES, owing to the special method of preparing the same.

The superiority of SARCO-PEPTONES consists in:

I. **The Large Percentage of Peptones which it Contains.**—There are 35 per cent. of Peptones, beside other nitrogenous substances.

II. **Its Absolute Purity.**—It is diluted with no foreign matter whatsoever, but contains only such as is derived from the meat itself. For this reason it is one of the *cheapest* products of its kind ever put on the market.

III. **Its Uniformity.**—The method of preparing this product is such as at all times guarantees its uniformity.

IV. **Its Palatability.**—The taste of this preparation is such as to be acceptable to the most fastidious patient.

V. **Its Perfect Solubility in Water.**—Sarco-Peptones will dissolve at once in boiling water; and in a comparatively short space of time, in cold water.

The process of digestion has been partially accomplished in the preparation of this article, hence the *weakest stomach* will be able to assimilate it. Therefore, Sarco-Peptones may be employed as a remedy in ANÆMIA, EXHAUSTION, INDIGESTION, FEVERS, etc., and in all cases of *convalescence* as well as by the healthy.

Send for reprints of articles on the relative value of the ordinary meat extracts and Sarco-Peptones, written by eminent physiologists, and published in various medical journals of high standing.

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