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Original and Selected Papers.

A NEW MODE OF MAKING GREY POWDER.*

BY ALEXANDER BOTTLE.

With a slight alteration in the relative proportion of mercury to chalk, the formula for Hydrargyrum c. Creta in the British Pharmacopœia, and the direction for preparing it, remain the same as the formula and *modus operandi* recognised and practised in the first half of the last century. We might from this fact be led to infer that the resulting combination was all that could be hoped for or desired, that it was uniform in its physical condition and reliable in its action, and that from its long and continuous use in medicine there would not be at the present day doubt in the minds of any as to its medicinal value, or difference of opinion regarding the mechanical subdivision or chemical combination of the metal to which its therapeutical action might be more fairly attributed; and yet I venture to assert that there is no preparation in the British Pharmacopœia about which more diversion of opinion has been entertained, and as I believe will by the discussion that follows, still be shown to exist.

Reference to the observations of writers of good repute who have commented on this preparation lead us through a chronological labyrinth of contradiction, showing alternately, mechanical subdivision and oxidation of the metal in the ascendant, and temporarily holding the weather side in the argument. In the first volume of the *Pharmaceutical Journal* is published an elaborate and exhaus-

*Read at an Evening Meeting of the Pharmaceutical Society of Great Britain, December 6, 1876; published in the Pharm. Jour. and Trans.

tive paper on the 'Division of Mercury,' read before this Society by our noble founder and esteemed friend, the late Mr. Jacob Bell, from which I extract the following as the conclusion at which he arrived:

"The preparations under consideration, *i. e.*, Grey Powder, Blue Pill, and Blue Ointment, are dependent for their efficacy on the impalpably minute division of the mercury, and if any oxide exist in them, the circumstance is accidental, and the quantity so small as to be unimportant."

Professor Attfield, commenting upon the same preparations, writes—"Their therapeutic effects are probably due to the black and red oxide of mercury which occur in them through the action of the oxygen of the air upon the finely divided metal."

Dr. Pereira, under the head of Hyd. c. Creta, writes—"This preparation is a mechanical mixture. It is an exceedingly mild but valuable mercurial."

Some sixteen years ago Professor Redwood favoured us at one of these evening meetings with the gratification of listening to a paper on "Grey Powder." It was one of those valuable contributions to pharmacy, for which we as pharmacists have been upon very many occasions indebted to him. It is printed in the *Pharmaceutical Journal* [2], vol. 1., p. 504. He therein shows, as the result of his examination of six samples of grey powder, that five of them contain oxides in abnormal excess, and suggests the use of sugar of milk as a probable preventive of this tendency to oxidation (a suggestion which appears to have been adopted by our transatlantic cousins), and concludes with a promise to return to this subject hereafter. May I venture to hope that he will deem the opportunity I have now afforded him a fitting occasion to do so?

It has appeared to me that minute subdivision, and not oxidation of the metal, has been the intention of the pharmacopœia process, and that this result is capable of being obtained by a strict adherence thereto; but the process is uninteresting, monotonous and wearisome. I can recall to mind a time when I as an apprentice was first set to make this preparation, and that I looked upon it as a punishment worthy of the inquisition.

In modern times it is, I believe, exceptional to find it made on a comparatively small scale by the pharmacist for the requirements of his own establishment; as a matter of convenience he purchases it from the wholesale houses, by whom it is made in large quantities, and to this I have for a long time past been led to attribute very much of the variation in the condition of the mercury found in different samples of the powder. The quantities directed in the British Pharmacopœia can be prepared with a result containing a very small percentage of mercurous oxide, and a mere trace, if any, of the mercuric; but when made on a large scale by steam power the heat eliminated by the friction and pressure of heavy stones, favours in a marked degree metallic oxidation, and the powder so prepared

and afterwards kept for indefinite and comparatively unlimited periods is that in which, more especially, the peroxide in abnormal quantity is found.

Impressed with the conviction that it is alike our duty and to our interest to avoid the use of a powder containing mercury in the higher state of oxidation, and that in every dispensing establishment it is desirable to have Hyd. c. Creta prepared at intrevals not too far apart, I venture to suggest a slight deviation from the British Pharmacopœia process, to the extent of substituting for the slow process of trituration in a porcelain mortar, active agitation in a wide-mouthed glass bottle, by which means the B. P. quantity may be prepared and the metal minutely subdivided, with an expenditure of very little if any more, time and labour than is required to be devoted to the preparation of a tincture.

[In the discussion which followed the reading of this paper—in which Prof. Attfield, Prof. Redwood, Messrs. Umney, Bottle, Greenish, and others, took part—it was granted that the Hydrarg c. Creta of commerce is always of uncertain composition, and often contains varying quantities of peroxide; a contamination which no doubt often gives rise to serious results. As to what the exact composition should be, no one could satisfactorily determine, but it was thought probable that if the powder answered to the test of the Pharmacopœia, which could be easily and quickly applied, it would answer every purpose. Prof. Redwood said that some manufacturers were in the habit of preparing the powder by putting the ingredients, together with some round stones, in a cask, fitted with an axle, and rotating the cask for an indefinite length of time, perhaps for weeks; in this way the preparation was unduly exposed to the air, and oxidation of the mercury probably resulted. Mr. Umney said that by triturating the ingredients under millstones, relieving the powder of the weight of the stones by means of a screw, he had often prepared ninety pounds of grey powder in four or five hours, he thought that the use of damp chalk might accelerate oxidation. In answer to an enquiry, Mr. Bottle said that in order to determine the condition of the mercury, and the probable termination of the process, he adopted the method taught him when an apprentice, which was to moisten his finger with saliva, and taking up a small portion of the powder, to spread it upon a piece of writing paper and examine with a lens. One of the members present said that in preparing the powder he had operated very satisfactorily by a method similar to that given by Mr. Bottle, but he finished the trituration in a mortar. The main points brought out by the discussion were that pharmacists should either prepare the powder themselves, or apply the pharmacopœial test to any that might be purchased.—Ed. Can. Pharm. Jour.]

ON THE USE OF PETROLEUM BENZIN IN PHARMACY.*

BY L. WOLFF.

Petroleum benzin has been frequently proposed and variously experimented with by different operators, with the view of substituting the much higher priced ether in preparing oleoresins, and has been repeatedly found to not answer the purpose intended for it. ("A, J. Ph.," 1872, page 208). Although its valuable solvent powers for fatty matter, wax and essential oils cannot be disputed, it fails to extract the resins and the active ingredients, which are of the utmost importance in oleoresins. Ginger treated with benzin yields an oil containing all the odoriferous properties thereof, but extracting none of the pungent-tasting resin for the remedial properties of which it is justly celebrated, and which subsequent to the benzine process is readily dissolved from it by ether or alcohol. Buchu under a like treatment, as reported by another contributor of this journal on this subject, gives an oily substance devoid of the diuretic properties of the leaves, though possessing their specific odor. Cubebs, though completely exhausted by it of its fixed and essential oils, fails to yield its cubebic acid to it, black pepper its piperin, and wormseed its resin and santonin; but all of the mentioned substances, and many more which have been subjected to the same process, are readily deprived of their fixed and essential oils, leaving them inodorous, seemingly dry and incoherent, powders, that are, if treated with alcohol, ether or chloroform, readily deprived of their resins, thus affording a method for obtaining them separate from wax, fixed and essential oils.

Its extraordinary solvency for essential oils destines benzin for an important place in pharmacy, and oils derived by its aid from cinnamon, cloves and other drugs are, if their odor is any indication of their value, if not superior, certainly not inferior to the distilled oils of these articles.

The oils obtained by exhaustion with benzin and its subsequent evaporation are mixed with wax and fixed oils to some extent, which can easily be separated therefrom by dissolving in alcohol, in which the latter are insoluble, filtration of this solution, and either expulsion of the alcohol by evaporation at the moderate heat of a water-bath or, much safer and better, by mixing the filtered alcoholic solution with several times its bulk of water, when the essential oil will rise to the surface or subside beneath it, as its specific gravity may be.

The oils by this cold process have a beautiful aroma, superior

*Read at a meeting of the Phila. College of Pharmacy and published in the Am. Journ. Pharm.

to many of the distilled ones, and the easy manner of obtaining them may, without doubt, prove a valuable method for the pharmacist who cannot always procure in the market the oils he wants, and has no facilities for distilling them, besides giving him fair means to arrive at a quantitative estimate of the essential oil contained in an article under analysis.

The essential oil of parsley seed cannot thus be seperately prepared by the aid of benzin, as it contains another peculiar oily substance well known by the name of "apiol," which is soluble both in it and also in alcohol.

A great deal of the apiol in the market, both in bulk and in capsules, is nothing more than an oleoresin of parsley seed, which can lay no claim whatever to its name, being of green color, insoluble, to a large extent, in alcohol, and congealing at ordinary winter temperature, all of which properties "true apiol" does not possess. Apiol has come into extensive use of late years, securing high praise as an emmenagogue, and is also claimed by its discoverers to be an antiperiodic but little, if any, inferior to quinia; but its high price, consequent to the expensive process as proposed by Messrs. Joret & Homolle, perhaps more than anything else, prevents its general introduction.

Powdered parsley seed, exhausted with benzin, and the liquid spontaneously evaporated, yields a mixture containing principally fixed oil, wax and apiol; the latter, alone, being soluble in alcohol, can readily be recovered therefrom by repeated washing in stronger alcohol. The washings evaporated over the water-bath with a gentle heat, leaves as a residue "True Apiol," corresponding in every respect with the article sold under the name of "Joret & Homelle's," having the advantage of its low price making it accessible to persons of limited means, as well as to the more favored by fortune, especially if it is not dispensed in capsules, for which there is no occasion, since it may be given dissolved in essence of peppermint, or in emulsion, disguised by the oil of the same name. Samples of "Apiol" prepared in this manner, have been tried by several prominent physicians, in their practice, and were pronounced to be equally as efficient as the imported French article.

Quite frequently the fixed oils much encumber the result of pharmaceutical operations, as is prominently the case in preparing the "Alcoholic Extract of Nux Vomica," which has often been noticed and given attention to by many writers. (See "A. J. Ph.," 1874, page 405; also, Prof. Proctor on the same.) Nux vomica, if exhausted with benzin, yields a large percentage of a clear fixed oil, congealing at ordinary winter temperature, and the powder, if subsequently treated in the usual manner with stronger alcohol, gives an extract which offers no trouble by proper evaporation in reducing it to the dry state. The oil derived from the benzin, to make sure of not losing any strychnia or brucia that may be contained therein, should be

repeatedly shaken with dilute alcohol until the washings fail to betray to the palate the specific bitter taste of their alkaloids; then the washings must be mixed with the extract in course of evaporation, and the whole reduced to proper consistency. By the ordinary way, the separation of the oil from the extract is at best a tedious matter causing the loss of extract, and is never completely performed, thus preventing evaporation to dryness, which by the benzin process is readily effected.

Another article, which the pharmacist has frequently to purchase at an exorbitant price, is "Purified Oleic Acid," which has been much used of late in making the oleates now in use, and can be easily and at small expense prepared with benzin as solvent, in the following way:

Oil of sweet almonds, saponified with caustic potash and the soap decomposed with tartaric acid, is washed with hot water to separate the precipitated bitartrate of potassium from the mixture of oleic and palmitic acids. These are combined with litharge forming the oleomargarate of lead, from which the benzin dissolves the oleate of lead, leaving as residue the undissolved palmitate thereof. From the benzine solution the lead is precipitated by dilute hydrochloric acid, in form of chloride of lead, and on evaporation of the benzin, "Oleic Acid" will remain sufficiently pure for pharmaceutical purposes, giving clear and permanent solutions with the red and yellow mercurial oxides, as high as thirty per cent. if necessary.

As crude commercial oleic acid can be bought at very low figures, it may be purified by combining it with litharge, deriving from it the oleate of lead, from which again, by the aid of benzin, the purified oleate can be separated, and as before stated, purified oleic acid prepared at but a small expense.

To gain the same end, the simplest way perhaps is to utilize the ready-made olec-palmitate of lead, the official leadplaster, dissolve it in benzine, and extract from it the oleic acid by precipitating the lead by aid of hydrochloric acid.

Oleic acid thus prepared has been used for some time, and often to answer better for the preparation of the oleates than the article sold by some of the manufacturing chemists.

The above results by no means limit the utility of petroleum benzin as a solvent and important pharmaceutical factor, but they will show that this refuse article, of comparative little commercial value, which has been applied to but little more than the removal of oil, grease or paint stains, may be turned to good account by its very deficiency to act like other or similar substances as a general solvent for both fats and resins.

PHILADELPHIA, Dec. 1st, 1876.

DETECTION OF THE MINERAL ACIDS BY MEANS OF COLCHICINE.*

BY F. A. FLUCKIGER.

Mohr has observed that under certain conditions the behaviour of inorganic acids differs totally from that of the organic acids; this difference may be utilized for their discovery in presence of organic acids, for example, in vinegar or in lemon juice.

Potassium sulphocyanate in a dilute solution of ferric acetate causes no change, but if there be the smallest trace of hydrochloric, nitric, or sulphuric acid present, the blood-red colour of ferric sulphocyanate is at once apparent; this, however, quickly vanishes on the addition of an acetate or oxalate; but in this case phosphoric acid acts like the organic acids in preventing the formation of ferric sulphocyanate. Another of Mohr's methods depends on the fact that iodine is precipitated from a solution of potassium iodide if a ferric salt with an inorganic acid radicle be added. Ferric acetate causes no precipitation in a solution of potassium iodide, but if the smallest trace of an inorganic acid be present the iodine is immediately precipitated.

But there is a case in the reverse of this, in which the inorganic retards and the organic acid hastens the reaction. A solution of pure ferrous sulphide mixed with a saturated solution of gallic acid produces no change if the air be excluded, but acetates immediately produce in it a violet colour.

Still more remarkable effects are produced by colchicine. Some colchicine was extracted from a few grams of the seeds by means of alcohol and water, the yellowish solution was diluted till the colour was scarcely perceptible.

With concentrated sulphuric or nitric acid it gave a very distinct yellow, and on adding a drop of hydrochloric acid to this solution a bluish-violet was produced.

If some colchicine solution with a drop of nitric acid is strongly concentrated and then a fragment of sodium acetate added, an orange colour is produced.

If to a portion acidulated with sulphuric add, a mixture of iodide of potassium and iodide of mercury in the proportion of 50 to 13 5 is added, a precipitate is formed; by means of this solution it was easy to detect ½ a per cent. of sulphuric acid in vinegar.

*From the Journal of the Chemical Society, (from Neus Repert, Pharm., xxv, 18—23).

OZONE AN ACTIVE POISON.*

The eminent French chemist, P. Thenard, writes as follows in regard to the effect of ozone, or active oxygen on the animal system: "I believe," says he, "that it is high time that the attention of the public, and even of the learned, was directed to the widely spread errors in regard to the action of ozone on the system. Far from being a remedy, it is rather one of the most energetic poisons that has been prepared in our laboratories, and the serious accidents which have occurred in my own, leave no doubt of it. I will not enlarge on its physiological action, since A. Thenard will soon publish an article on that subject; but will only give prominence to the fact that, under the influence of ozone, even when greatly diluted, the blood corpuscles rapidly contract and change their form, the pulse becomes slower, so much so that a guinea pig with a normal pulse of 148, after being kept fifteen minutes in a weak ozone atmosphere, had the pulse reduced to 130 beats. At the present time, when an accurate method of measuring temperature is of great assistance in medicine, ozone may possibly prove a means of preventing too great a rise of temperature; but inconsiderately to disseminate ozone in inhabitated places, in the delusive hope of destroying a miasma, would be very dangerous. If our strongest poisons furnish in certain cases our best remedies, we must first learn how to use them, so as not to make a mistake in the time of giving or in the dose. Then it is certain that ozone does exist in the atmosphere? Its presence there is proven by means of coloured paper, the colour of which changes more or less in contact with the air. But who knows that there is not some other substance present in atmospheric air, which can modify this paper in the same manner as ozone? Wittmann passed a stream of air through the flame of a glass-blower's lamp and obtained a kind of air which acted upon the so-called ozonometric paper (starch and iodide of potassium) just as ozone does; but while this air disenfected badly smelling water without making it acid, ozone does not disinfect and does make it acid. Moreover, it is well known that ozone cannot exist at a temperature of 392° Fah. (200° C.), while this modified air of Wittmann's was exposed to a temperature at which glass softens."

It will be seen that there is still much to be desired in the discussion of this question, although it would be considered over-hasty to deny the possible presence of ozone in the air, or to assert that it is never used with profit in medcine.

*Scientific American.

THE MANUFACTURF OF MILK SUGAR IN SWITZERLAND.*

BY A. SAUTER.

In a communication to the *Schweizerische Wochenschrift fur Pharmacie* for the 20th of October, the author gives an account of a visit to Marbach, in the canton of Luzern, Switzerland, where a half-a-dozen refiners are said to make a handsome income from the manufacture of milk sugar.

The raw material used for the recrystalization comes from the neighbouring Alps, in the cantons of Luzern, Bern, Schwyz, etc, ; a considerable quantity is supplied also by Gruyeres. It is the so-called "Schottensand" or "Zuckersand," the French "déchet de lait," obtained by simple evaporation of the whey after cheese-making. Notwithstanding a continual rise in the price, consequent upon the demand and the increased cost of labour and fuel, the manufacture continually expands, and now amounts to 1800 to 2000 cwts. yearly, corresponding to a gross value of about 300,000 francs, certainly a handsome sum for a small mountain village with but few inhabitants.

The manufacture is only carried on in the higher mountains, because there the material can no longer be used profitably for the fattening of swine, which are found chiefly in the valleys, and the wood required for the evaporating process is cheaper in the highlands.

The crude material is sent to the manufacturer, or refiner, in sacks containing one to two hundredweights. It is washed in copper vessels, and dissolved to saturation at the boiling temperature over a fire, and the yellow brown liquor, after straining, is allowed to stand in copper-lined tubs or long troughs to crystallize. The sugar crystals form in clusters on immersed chips of wood, and these are the most pure and therefore of rather greater commercial value than the milk sugar in plates which is deposited on the sides of the vessels.

In ten to fourteen days the process of crystallization has ended, and the milk sugar has finished growing (*"ausgewachsen"*). The crystals are then washed with cold water, afterwards dried in a cauldron over a fire, and packed in casks holding four or five hundredweights.

As the "Schottensand" can only be obtained in the summer, the recrystallization is not carried on in the winter, hence a popular saying that the milk sugar does not "grow" in the winter. The entire manipulation is carried on in a very primitive manner, it being a matter of astonishment to find a specific gravity instrument in any place. The author is of opinion that with a more rational method of working a whiter and finer quality of sugar could be produced.

*Pharm. Jour. and Trans.

ON ALCOHOL.*

BY F. J. BOXWELL QUINLAN, M. B., M. D., UNIV. DUB., L. R. C. S., L. K. Q. C. P., ETC.,

Physician to St. Vincent's Hospital, Professor of Materia Medica in the Catholic University.

GENTLEMEN,—On the present occasion I wish to make a few observations upon the alcohol question—a subject of the most profound physiological and moral interest—which has latterly occupied a foremost place in public attention, and the settlement of which cannot be far distant. Into the political and social aspect of this great question I do not propose to enter, but simply to explain to you the exact physiological position of alcohol as a medicine for the treatment of certain forms of illness, as an article of dietetic use for the invalid, and lastly, as an agent of ordinary consumption among the healthy. Alcohol is composed of carbon, hydrogen, and oxygen, chemically united, and occupies an intermediate position between the hydrocarbons or fats, and the carbo-hydrates or starches and sugars. Both of these great classes of alimentary substances are powerful and undoubted sources of nutrition, and producers of heat and of motion. What is the exact position and value of alcohol, which, chemically speaking, occupies an intermediate position between them? The only satisfactory answer to this question will be a brief examination of the physiological action of alcohol on the animal economy. I may here mention that under the term alcohol I include beer, ale, and porter, which are made by the fermentation of corn or starches; wine, which is produced by the fermentation of the juice of the grape, and the various kinds of spirit which are obtained by distilling fermented products, and thus extracting from them the alcohol which they contain. Many years ago the distinguished Liebig put forth the doctrine that all foods were divisible into nitro-genous or flesh-forming, of which meat and vegetable albumen are the types, and carbonaceous, consisting of fat, starch, and sugar. He maintained that nitrogenous food was the source of all muscular power; that every muscular act consumed nitrogen; that the excretion of nitrogen from the body was in proportion to muscular work, and that the amount of work done could be determined by measuring the nitrogen excreted. As a corollary of this it was held that carbonaceous food simply maintained vital heat by its combustion in the system. This system, so plausible, and with so much to recommend it, reigned supreme up to a very short time ago, when it was suddenly and completely overthrown by the experiments of Fick and Wislicenus, of Zurich. Their observations

*A lecture delivered in St. Vincent's Hospital, and published in the Medical Press & Circular.

have been repeated upon Weston, the celebrated American pedestrian, in his 100-mile walks, and on other occasions. The matter is now settled beyond all doubt by a series of careful and accurate experiments upon man and animals, performed in various countries and by observers of reliability and eminence. It is now proved that carbonaceous food supplies motive power as well as bodily heat; that the muscles are the agents, and not the sources, of motive power; that the excretion of nitrogen is in proportion to the amount taken into the system, and not to the work done; and lastly, that nitrogen not only builds up muscular tissue, but actually contributes to vital heat. This doctrine is one of the two keys of the alcohol question. The other is the determination of what becomes of alcohol when introduced into the system and of the method and form in which it or its component elements are eliminated from the body. This question, after much controversy, has been nearly settled. Enough is settled, however, to guide us completely. Liebig asserted that although a small quantity of the alcohol introduced into the system was excreted as alcohol by the breath and other ways, still that the great majority of the alcohol so taken in was destroyed in the system by oxidation; and that alcohol was a source of bodily heat only second to fat. As far as very moderate quantities of alcohol are concerned, this distinguished chemist has turned out quite right. In the French school, on the contrary, a very different view was maintained by Lallemand, Perrin, and Duroy, that any amount of alcohol, great or small, taken into the system was excreted from the body as alcohol and wholly unchanged. Consequently they maintained that alcohol could not be a source of either heat or power—that it, in fact, acted as a spur acts upon a horse, eliciting the power of the animal but of itself supplying no force. This view has also been upset by a series of carefully performed experiments, and it is now conclusively shown that, although a small quantity of the alcohol taken into the body is eliminated, unchanged by the lungs or otherwise, still that the predominating quantity continues circulating in the blood, is consumed in the system, and does not appear as alcohol in any of the channels of egress from the body. This consumption, which must take place by chemical action, which is another word for heat or its correlative force, would at once establish alcohol as a source of heat and force were it not for this very important reservation—the fact that a small quantity of alcohol stimulates the nervous system aud the bodily functions, but a larger proportion of it depresses them and materially checks and interferes with the vital processes by which heat, energy, and life are maintained. The capability of individuals for bearing the effects of alcohol varies very much. Some persons, and it is their misfortune, can bear a great deal; others very little. By a series of experiments upon animals, Dr. B. W. Richardson has ascertained that thirty grains of pure alcohol (about a dessertspoonful of proof spirit)

to each pound of the animal's weight produces intoxication; and that double that quantity endangers life. I may here observe that proof spirit consists of forty-nine parts of pure alcohol and fifty-one of water. The nearness to equality of these proportions arises from the fact that in ancient times, before the hydrometer first was invented, spirit was tested by placing a small quantity of gunpowder on a plate and soaking it with the spirit to be proved. If the spirit lighted on the application of the flame, and after a brief interval exploded, the gunpowder leaving the plate dry, the spirit was said to be up to proof. And it is to this rough and now almost forgotten process that our standard point is due. There is no doubt that the introduction into the system of a small quantity of alcohol—for example, of a glass of sherry or half that quantity of spirit diluted with water—stimulates the nervous system, quickens and strengthens the action of the heart, and slightly elevates the temperature of the body. After a certain interval these effects cease, and reaction sets in. By repeating the dose, the same results are again obtained, and the process can be kept up for a time, but not indefinitely. It is on this principle that the physician proceeds. He has a patient before him suffering from some acute disease, accompanied by such a prostration of vital power as threatens that the patient will die before the physician has sufficient, or in fact any time to combat the acute attack. By small and often-repeated and carefully-watched doses of alcohol he supports the flickering lamp of life for twenty-four or thirty-six hours, and thus gains time for the action of his remedies. When large quantities of alcohol are at once introduced into the body the effect is uniform and instructive. The co-ordinative power of the muscles is interfered with, beginning with those of the lower lips and those used in the production of speech, then proceeding to those of the legs, and lastly of the rest of the body. The vital processes are now interfered with, and a great and sudden fall in the bodily temperature, often as much as two or three degrees, ensues. Consciousness is next suspended, and, except feeble action of the heart and lungs, no function is proceeding, and the fall of temperature is as much as four degrees. If the sufferer be exposed to cold and without warm clothing, the heart and lungs cease to act and death ensues. More usually the alcohol is slowly destroyed and eliminated, and the sufferer awakens weak, with prostrated nerves, dried up secretions, and, above all, an overpowering sense of chilliness, for the bodily temperature, although falling quickly, recovers slowly, and too often the alcohol is again resorted to to relieve the prostration and chilliness. The above observations will, I think, place the physiological action of alcohol in a very clear point of view. The views I have expressed have been well set forth by M. Desguin at the recent conference at Brussels. He laid well-merited stress on the fact that the action of alcohol may be divided into two stages—the stimulative, when it enhances the bodily functions and

raises the temparature of the body; and the depressive, where it does the contrary—and points out that the efforts of the physician should always be directed to keep his patient (where he employs alcohol at all) in the stimulative stage, and never to allow him to even enter the stage of depression or loss of temperature. The above facts throw a strong light upon the folly of using large quantities of alcohol on the part of persons exposed to cold and hardships. They could not use a worse thing, and this fact is well known to all Arctic voyagers. The employment of alcohol as a medicine in cases of acute disease, attended by prostration of vital power, is a very simple problem indeed. Carefully and prudently administered, alcohol has an almost magical effect in such cases; and there is no agent capable of replacing it. If denied it, such cases usually end fatally; and a hard and fast line of treating all diseases without alcohol is, in my opinion, opposed alike to physiology and to good sense. The prescribing of alcohol as a dietetic remedy of habitual use to persons in delicate health or in conditions of chronic debility, is one of the most difficult, perilous, and responsible duties which the physiciau has to discharge. There is no doubt that, in very many elderly persons, and in those recovering from acute illness, the action of the heart is weak, and the nervous system is prostrated; and that in such cases moderate quantities of wine, porter, or ale are found beneficial. In many forms of weak digestion a small quantity of spirit and water, taken with a meal, promotes the secretion of gastric juice, and thus helps digestion. I may here remark that raw spirit, by coagulating the pepsine of the gastric juice, has the very opposite effect. In all these cases alcohol must be dietetically prescribed; but the physician should use this two-edged sword with the utmost caution and reserve. He must remember that if it has done much good it has also done much harm, and that thousands have thus acquired a taste which has been their ruin, and which they otherwise might never have acquired at all. I think, however, that the matter is one which is best left to the judgment of the profession, who are quite aware of the dangers and responsibilities in question. The use of alcohol as an article of habitual or occasional use among the healthy is our greatest social problem, and one which time does not permit me to discuss. I will merely express my conviction that alcohol, like tobacco, cannot under any circumstances be regarded as a necessary of life to the healthy. Both one and the other of these potent and widely used substances are to the healthy simple luxuries, and as such have by most Governments and countries been selected as a means of raising revenue—a course much more consonant with reason and humanity than the taxation of salt or other articles of indispensable necessity. There is no doubt, however, that the moderate and rational use of alcohol or of tobacco, with many persons with whom they agree, greatly conduces to the enjoyment of life, and is occa-

sionally beneficial. With some persons either or both of these agents entirely disagree; and with all, if used beyond the strictest bounds of temperance, they lead to great evils. Total abstinence in a healthy man can never be wrong, and is always laudable; to a man who is not quite sure of his self-control it is indispensable. But I cannot see that a total abstainer is entitled to wrap himself up in his own virtue and to look down upon the man who can use without abusing the gifts of Providence, and who, with unlimited quantities of alcohol always at his command, uses but never exceeds. Time does not permit me to enter upon the consideration of the long train of diseases consequent upon the abuse of alcohol. I will merely say that it induces a dilatation of all the minute blood vessels of the body—a condition which is seen upon the Bardolphian nose of the habitual indulger, but which extends throughout the internal organs which we cannot see, and induces its train of maladies. Likewise a thickening of the dialysing membranes of the body, which entails its accompaniment of liver and kidney affections, and the ultimate loss of life. I hope this brief explanation of the position of alcohol will be found useful to all engaged in watching the effects and treatment of disease.

FORMULÆ FOR SKIN DISEASES.*

The following are some of the formulæ at present in use in several of the London hospitals for diseases of the skin:—

For Acne.

℞ Glycerine, ... ℥j
Aquæ calcis, ... Oj. M.

For Pediculi.

℞ Slaked lime, ...
Sulphur ..... āā ℥iv
Water ..... ℥xxxv.

Boil and evaporate to a pint.

For Alopecia.

℞ Liq. ammon. fort.,
Spir. vini. rectif., ... āā ℥j
Tinct. cantharid.,
Glycerinæ, ... āā ℥ss
Aquæ, ... ad. Oj.

Use as a liniment.

For Palmar Psoriasis.

℞ Ung. hydrarg., ... ℥j
Creasoti, ... *m*vj. M.

*Philadelphia Med. & Surg. Rep.

For Eczema.

℞. Plumbi acetatis,
Hydrarg. chlor. mitis, ... āā gr. x.
Zinci oxidi,
Ung. hydrarg. nitratis, ... āā gr. xx.
Adipis,
Olei palm.,..... āā ʒss. M.

Make an ointment. A tar lotion is also used.

For Tricophyton.

M. Lespian (*La France Médicale*) advocates the use of a combination of 15 grains of tannin, 2½ drachms of tincture of iodine, and 5 drachms of glycerine, as a local application in this disease, the crusts being first softened by wads of cotton wadding or charpie soaked in olive oil in glycerine. If the disease is not very extensive, a cure is effected in a few days.

CHINESE VIEWS OF ENGLISH PHARMACY.*

Now and then, when English pharmacists have been favoured with a glimpse of the style of Pharmacy that obtains favour with their Celestial brethren, their interest has been somewhat tinged with surprise and amusement at the nature of some of the preparations. But a letter from the Shanghai correspondent of *The Times*, published last week, seems to indicate that the Chinese have been enjoying a *quid pro quo* in this respect. It appears that an anti-Christian book, called the "Ki-Kinglu," has been published in the province of Szechuen, in which it is stated that the skill and intelligence of foreigners have been obtained by robbing the Chinese. One method of doing this, it is there represented, has been the making of an extract from the eyes of Chinese who have become Christians, and touching the eyes of foreigners with it, by which they have been enabled to understand astronomy and perceive the mineral wealth of the earth. Another valuable medicine for the promotion of intelligence has had for one of its ingredients the brains of a Chinese girl who has embraced Christianity. Other medicines have been mixed with the brains and the compound made up into pills, which received their final touch in the shape of certain incantations instead of a sugar coating. The *bona fides* of the author is attested by his statement that he has himself lived three years in England, during which time he had three princesses given him to wife by the Queen, and that he was only permitted to return to China upon giving a promise not to expose the improprieties he had witnessed in this country.

*Pharmaceutical Journal & Transactions.

EXAMINATION OF "PAIN KILLERS."*

BY JOSEPH J. PIERRON.

PERRY DAVIS' PAIN KILLER. IN A BOTTLE SOLD FOR A DOLLAR:

Spirit of camphor, about one fluid ounce;
Tincture of capsicum, about one fluid ounce;
Guaiac, one-half ounce;
Myrrh, colour; and three fluid ounces of alcohol.

RADWAY'S READY RELIEF. IN A HALF DOLLAR BOTTLE:

Soap liniment, about one and a half fluid ounces;
Tincture of capsicum, one-half fluid ounce;
Water of ammonia, one-half fluid ounce;
Alcohol, one-half fluid ounce.

FLAGG'S RELIEF. IN A BOTTLE, SOLD FOR HALF A DOLLAR:

Oil of cloves, about one fluid drachm;
Oil of sassafras, two fluid drachms;
Spirit of camphor, one and a half fluid ounces.

CHAMBERLAIN'S RELIEF. IN A BOTTLE, SOLD FOR THIRTY-FIVE CENTS (approximately):

Tincture of capsicum, one fluid ounce;
Spirit of camphor, three-fourths fluid ounce;
Guaiac, one-fourth ounce; and colour tincture, to make two fluid ounces.

HAMLIN'S WIZARD OIL. IN A BOTTLE SOLD FOR A DOLLAR, THERE ARE (in approxmate proportions):

Spirit of camphor, one fluid ounce;
Spirit of ammonia, one-half fluid ounce;
Oil of sassafras, one-half fluid ounce;
Oil of cloves, two fluid drachms;
Chloroform, one-half fluid ounce;
Oil of turpentine, one-half fluid ounce;
Alcohol, to make about five fluid ounces.

KELLOGG'S RED DROPS. A BOTTLE, SOLD FOR HALF A DOLLAR CONTAINS (in approximate quantities):

Spirit of camphor, two fluid ounces;
Spirit of origanum, one-fourth fluid ounce;
Oil of sassafras, one-fourth fluid ounce;
Oil of turpentine, one-half fluid ounce; and colour tincture, to make about three and a fourth fluid ounces.

*Abstract of a Report on file in the Michican University School of Pharmacy. Published in the Peninsular Journal of Medicine.

CUTCH.*

Perhaps less is known in commercial circles of the history and origin of the inspissated extracts known as cutch and gambier, which are now imported to so large an amount for tanning and dyeing purposes, than of any other product. The misnomer of Terra Japonica, which was so long applied to gambier in the official trade returns, has now been got rid of, and the two extracts appear under their proper names. Although they are frequently confounded by many, cutch and gambier are obtained from different sources and different plants.

The cutch of commerce is chiefly obtained from two species of *Acacia*. The common name, Catechu, under which it sometimes passes, is derived from *Cate*, a tree, and *chu*, juice. It is usually called in India, Kat or Kut. The trees from which it is prepared are chiefly:—(1.) *Acacia Catechu*, Willd.; *Mimosa Sundra*, Roxb., a tree thirty or forty feet high, and dark grey or brown bark, reddish and fibrous internally. It is common in most parts of India and Burmah, where it is highly valued for its wood, which is used for posts, and for various domestic purposes, as well as for making catechu and charcoal, while the astringent bark serves for tanning. (2.) *A. Suma*, Kurz; *Mimosa Suma*, Roxb., a large tree, with white bark, nearly related to the preceding, but not having so extensive a geographical range. It grows in the South of India (Mysore), Bengal, and Guzerat. The bark is used in tanning, and catechu is made from the heart-wood, but not so extensively as from the former species. The process for preparing it varies slightly in different districts. The tree is reckoned to be of proper age when its trunk is about a foot in diameter. It is then cut down, and the whole of the woody part, with the exception of the smaller branches and the bark, is chopped into chips. Some accounts state that only the darker heart-wood is thus used. The chips are then placed with water in earthen jars, a series of which is arranged over a mud-built fireplace, usually in the open air. Here the water is made to boil, the liquor, as it becomes thick and strong, being decanted into another vessel, in which the evaporation is continued, until the extract is sufficiently inspissated, when it is poured into moulds made of clay, or of leaves pinned together in the shape of cups, or in some districts, on to a mat covered with the ashes of cowdung, the drying in each case being completed by exposure to the sun and air. The product is a dark brown extract, which is the usual form in which cutch is known in Europe. In Kumaon, in the north of India, a slight modification of the process affords a drug of very different appearance. Instead of evaporating the decoction to the condition of an extract, the inspissation is stopped at a certain point, and the liquor allowed to cool, coagulate, and crystallise over twigs and

*Journal of Applied Science.

leaves thrown into the pots for the purpose. How this drug is finished off we do not exactly know, but we are told by this process there is obtained from each pot about two pounds of "kath," or catechu, of an ashy, whitish appearance. This product is brought down from Berar and Nepaul to Calcutta. The cutch of Pegu has a high reputation. Catechu contains about 50 per cent. of tannin. It is used by dyers, not as a dyestuff, however, but as a source of tannic acid, which it contains in a very large quantity, and this has the property of forming, with a solution of salt of sesquioxide of iron, an exceedingly deep, bluish-black liquid (ink). Catechu is used also in medicine as an astringent, on account of the large quantity of tannic acid which it contains. Other kinds of catechu are prepared in India. The commonest kind is that from the nut of the *Areca Catechu*. There are two preparations of it, which are called respectively Cuttacumboo and Cashcuttee. The former is chewed with the betel leaf, the latter is used as an astringent medicine. Hayne gives the following as the mode of preparation in Mysore:—The nuts are boiled for some hours in an iron vessel, which furnishes the astringent extract called kossa, which is black, and mixed with paddy husks and other impurities. After the nuts are dried, they are put into a fresh quantity of water and boiled again, and this water being inspissated like the former, yields the best kind of catechu, called cooney. It is yellowish-brown, has an earthy fracture, and is free from the admixture of foreign bodies. The King of Burmah has the monopoly of this manufacture, of which a considerable quantity is exported.

THE CUCUMBER IN RUSSIA.

What the onion is to the Spaniard, or the potato to the Irishman, that the cucumber is to the native Russian. It is the indispensable part of every Russian peasant's meal. In the account of his trip up the Volga to the great fair of Nijni Novgorod—which, by the way, packs the greatest amount of instructive and entertaining description in the smallest space of any book of travels—Mr. Munro Butler Johnstone remarks upon the profusion of water melons and cucumbers everywhere offered for sale. At the fair, and on the road thither, pyramids of melons, like cannon balls in an arsenal, were heaped up in every direction; and, as for cucumbers, one couldn't help thinking that a plague of cucumbers, like locusts, had descended upon the earth. All along the Volga, from Astrakhan to Nijni, the whole population seemed engaged in eating water melons, which were sold for three copecks, equivalent to one English penny. At every station the trade in melons was rivalled only by the traffic

in sunflowers. But if the water melon and the sunflower are luxuries and pastimes, the cucumber is a law and a necessity. One never sees a Russian peasant at dinner without a lump of black bread and a cucumber. "A moujick's dinner may be said to consist of x + cucumber." The x will consist of his favorite cabbage soup, with or without meat in it, and sometimes, in addition to it, the famous grit porridge; sometimes the soup is without the porridge, sometimes the porridge without the soup, but in either cases the cucumber is always there; and should x equal zero, then the ever faithful cucumber does duty for all the rest. In the hot and arid regions of Southern and South-western Asia, these succulent vegetables are highly appreciated, and with good reason. Juicy and cool, they cannot but be always refreshing where water is a rarity; but in a climate like that of Russia the cucumber is the last thing one would expect for a national dish. Mr. Johnstone suggests that their price—about the fifteenth part of a halfpenny—may help to explain the anomaly. We are rather inclined to think it likely that the Russian peasant eats cucumbers, not so much because they are cheap, as because his remote ancestors, who came from the South, were cucumber eaters. To the one the taste for cucumbers was the natural result of climatic conditions; with the other it remains an inheritance and a national eccentricity, in spite of a naturally unfavourable climate.

SOLUTION OF AMMONIO-CUPRIC SULPHATE AS A TEST FOR GRAPE-SUGAR.*

BY FRED. B. POWER.

In some experiments with grape-sugar, the action of a very dilute solution of ammonio-cupric sulphate was observed; this reaction being of some interest, and, to my knowledge not having been previously announced the following observations may be noted:

If a drop of the ordinary test solution of cupric sulphate (one part of the salt in fourteen parts of water) be allowed to fall into a test tube, a slight excess of ammonia water above that required for the resolution of the precipitate, added, and further diluted with a small quantity of water, by the addition of a few drops of a solution of grape-sugar, and heating over a gas flame to the boiling point, the liquid becomes perfectly decolorized in a few seconds. It was found that a solution containing *one* drop of a solution of cupric sulphate of the above strength, which forms a deeply tinted-blue liquid upon the addition of an excess of ammonia water, becomes

*From the Am. Jour. Pharm.

perfectly colourless in transmitted and reflected light by heating with *four* drops of a solution of *one* gram of grape-sugar in 100 cubic centimeters of water; this degree of dilution of the saccharine solution seems to approach the minimum for the attainment of a marked result in the use of this test, and corresponds approximately to the detection of 0.005 gram or $\frac{1}{18}$ grain of crystalline grape-sugar.

The decolorized solution after standing for a few hours exposed to the air again assumes its original blue colour.

Milk-sugar and dextrin produce the same reaction as grape-sugar, although a somewhat more concentrated solution of dextrin is required.

Pure mannit, which has no reducing effect upon the solutions of Trommer and Fehling, has also no effect upon the ammonio-cupric solution.

Cane-sugar is incapable of affecting this change even in highly concentrated solution and after heating for a much longer time with the ammonio-cupric solution, although it was observed that when associated with grape-sugar a small amount of the latter is required for the decolorization of the liquid.

The solution of this salt of copper, as will be observed, being considerably less sensitive than the test solutions of Trommer and Fehling, can by no means supply the place of these valuable reagents, but may add one more to the number of the corroborative tests now in use.

It may also be mentioned in this connection that the solution of ammonio-cupric sulphate has met with a somewhat similar application by virtue of its capability of converting morphia into a basic oxydation product, *oxy-morphia*, $C_{17}H_{19}NO_4$, which according to Hesse, is identical with another alkaloid of opium, having the same chemical composition, *pseudo-morphia*, and which is insoluble in ether, alcohol and water.

THE METRIC SYSTEM.

The editors of *New Remedies* supply a few useful rules for converting quantities in the apothecaries' system into approximate metrical weights. "There is no need" says our contemporary, "for physicians to pedantically translate one system into the other." The rule is to choose the *nearest round number ending in 0 or 5*, excepting in the case of very potent remedies. Indeed, by remembering the following two simple rules, the translation becomes exceedingly easy:

1. In prescribing the equivalent of *drachms or ounces, multiply the number of drachms with* 4, and round off the product.

Reckoning a gramme equal to 15 grains, which is in practice correct enough, we would therefore write instead of ℥ ʒ: 2.0 gm.; for 1 ʒ: 4.0; for

1½ ℥: 6.0; for 2 ℥: 8.0; for ½ ℥: 15.0 (rounded off); for 1 ℥: 30.0 (instead of 31.1).

2. In prescribing the equivalent of *grains, multiply the latter by* 6 and round off the product, which is the corresponding quantity in *centigrammes.*

3 grains: 3×6=18, rounded off 20 ctgrm., or 0.20 gm.
4 grains: 4×6=24, rounded off 25 ctgrm., or 0.25 gm.
10 grains: 10×6=60, (instead of 66), or 0.60 gm.

The main attention is to be directed to the preservation of the *relative* quantities of the ingredients in a prescription, and besides, to the fact that liquid medicines, if prepared by weight, and dispensed (as they always will be) by measure, must be adjusted in such a manner that the active ingredient, if its specific weight is much different from that of water, be not prescribed in too large or too small a dose. Of heavy liquids a larger weight, and of light liquids a smaller weight will be required to fill the same measure.

2 fl. ℥ of chloroform weigh nearly 3 ℥ in weight: hence, in prescribing a heavy liquid like chloroform in the metric system, regard must be had to its specific gravity. The same is the case with liquids lighter than water, as for instance spiritus ætheris comp., of which 1 fl. ℥ weighs only about 49 grains.

The capacity of the ordinary domestic measures, as compared with the metric system, is as follows:

A wineglassful is equal to about 3 fl. oz., or 100 gm.
A tablespoonful (½ ℥) corresponds to 15 gm.
A teaspoonful (1 ℥) corresponds to 4 gm.
A teaspoonful of a vegetable powder is about equal to 15 to 20 grains, or 1 to 1.5 gm.; and of a mineral or saline powder about 30 to 40 grains, or 2 to 3 gm.

A noticeable exception is calcined magnesia, which is often prescribed to be measured in such a manner; this substance occupies a bulk about six times as large as an equal weight of sugar; one teaspoonful of the latter weighing 2.0 gm., the same measure of magnesia weighs only about 0.3 gm. (or 5 grains).

It would be easy to multiply rules for the conversion of one system of weights into the other. But there is no need of this. A few weeks of attentive trial of the metric system will give to any practitioner the necessary insight and routine, and after the apparent difficulties have once been mastered, the old system will be gladly dropped into oblivion.

PYROLIGNEOUS ACID.

Commercial pyroligneous acid varies considerably in its composition, according to the kind of wood from which it is prepared. Oak, birch, and beech yield the largest amount; pine and other

resinous woods yield much less. Damp wood gives a large amount of very weak acid, dry wood a smaller quantity of strong acid. The following table shows the average percentage yield of different woods:

	Tar.	Pyrol. Acid	Acetic Acid	Charcoal.
Pine	9.4	40.6	2.8	28.3
Fir	10.1	44.9	2.7	28.0
Spruce	11.0	40.9	2.4	26.1
Beech	5.5	47.3	5.7	23.9
Oak	6.4	47.6	5.4	24.9
Birch	6.0	48.0	5.7	21.1
Alder	5.2	47.7	3.9	24.0

The crude acid has a specif. grav. of 1.015–1.030, and contains, besides 5-9 per cent. acetic acid and 6-10 per cent. wood naphtha or methylic alcohol, varying quantities of propionic, butyric, and oxyphenic acids, acetone, methyl acetate, phenol, hydrocærulignon, ammoniacal salts, and certain other pyrogenic bodies not yet determined.—*New Remedies.*

ON THE SALICYLATE OF SODIUM.*

In reference to this salt, Dr. H. P. V. Petershansen writes, in the Detroit *Review of Medical Pharmacy* :—

When the salicylic acid was introduced to the profession as an internal remedy, it was recommended to give it in the form of powder dispensed in wafers. But nausea was oftener noticed after this medication, wherefore compressed tablets were prepared from the acid, and given with better results. Some advise to prescribe it with two or more parts of sugar, and order to wet each powder, before it is taken, with some water. As the sodium salicylate insures the same antipyretic effect as the acid, but does not irritate the mucous membrane of the stomach and intestines, nor act in an unpleasant manner upon the brain (like quinine), or cause nausea, it is preferred now before the acid by many physicians. It may be given even in a concentrated solution (1.30). In case the salt cannot be had, it may be prepared extemporaneously by solving the acid in a solution of some sodium salt (phosphate, borate, etc.).

FOR INTERNAL USE.

℞. Sodæ carb., ʒij

*Phila. Med. & Surg. Rep.

	Aquæ font.,	ʒijss.	
	Acid. salicyl.,	ʒij.	M.
℞.	Sodæ phosph.,	ʒiv.	
	Aquæ font.,	ʒijss.	
	Acid. salicyl.,	ʒij.	M.

FOR A GARGLE.

℞.	Acid. salicyl.,	grxx.	
	Alcohol.,	q. s. ad. solut.	
	Aquæ font.	ʒiv.	M.

A part of the latter may be replaced by glycerine.

OINTMENT.

℞.	Acid. salicyl.,	ʒj.	
	Unguent.,	ʒj.	M.

Make an ointment. A liniment of olive oil may also be advantageous in some cases.

Resuming the principal facts in regard to salicylic acid, we find that—

First. It is an excellent antiseptic when applied externally, and may, in surgery, take the place of carbolic acid on many occasions.

Seeond. It is, perhaps, the best antipyretic now known, quinine not excluded, when applied internally.

Third. As an internal remedy, it has no antiseptic properties.

Fourth. The best form in which it is given internally is sodium salicylate.

A BATTLE OVER A BED-BUG.—A sprightly quarrel is in progress among the homœpaths on the subject of bed-bugs. A number of years ago this interesting animal was introduced into their materia medica, in company with *pediculus capitis*, *crotalus horridus* and other lively medicines. In spite of some opposition from individuals, it gained a footing, and now holds a permanent place in *Allen's Homœopathic Materia Medica*, a standard authority. Dr. J. P. Dake, one of the strong men of the sect, wages war against it, his last demonstration taking the form of a lengthy article in the June number of the *Hannemannian Monthly*. In this, however, he almost surrenders, declaring that "as it has been admitted to the pages of the *Encyclopedia* by Dr. Allen, I will no longer protest against its remaining there, as it may be, after all, the 'right thing in the right place.'" Now that the question is stilled, it is to be hoped the demand for the valuable medicine will be so active as to prove beneficial to those localities where bed-bugs are *not* regarded as "the right thing in the right place."—*Pacific Med. & Surg. Report.*

Editorial.

AMENDMENTS TO THE PHARMACY ACT.

The Bill to amend the Pharmacy Act will in all probability have obtained a first reading before this journal reaches our subscribers. It has again been placed in the hands of Mr. Striker, who from his experience as a druggist is well aware of the necessities of the case. An informal meeting, composed chiefly of the medical members of the House, was held on Jan. 23, when the various sections of the Bill were fully discussed. Several alterations were proposed and agreed to, amongst others that doing away with the proposed standard of education for apprentices. The requirements of this section were really very small, as little more was required of a boy than that he could read and write. However, it was thought that even this slight education was unnecessary, and that some of the poorer members of the community might be debarred from entering the business if the proposed restrictions were carried out. The section was, therefore, struck out, but we hope that the sense of the House will be in favour of the restoration of this slight guarantee of capacity and respectability.

A new section, providing for the admission of unqualified partners, was added. In its present shape it allows a registered druggists to take into partnership, as *silent partner*, an unqualified person, but such partners shall not be allowed to sell any of the poisons enumerated in Schedule A of the original Act, nor dispense the prescriptions of physicians, and in the event of a dissolution of partnership, the silent partner retiring shall not continue to enjoy any of the privileges of the Act. There is much to be said in favour of this section and much against it, but from a most careful consideration of the question in all its bearings, we think it expedient that some provision of this kind should be made.

Another addition made to the draft of the Act, as some time ago presented to our readers, is that changing the time of Council meeting from Wednesday to Thursday. The examinations are now held on Monday and Tuesday, so that a report can be presented

to the Council. Candidates have therefore to be in the city over Sunday, and are thus put to an unnecessary expenditure of time and money.

In our next issue we hope to be able to announce the passing of the Amendments, and think it highly probable that such will be the case. The opposition of the medical fraternity has almost died out, and the majority of its members are quite in favour of the measure. The suggestions and objections of the drug trade have been met, and every point has been carefully, and, we think justly, settled to the satisfaction of all parties.

PROSECUTIONS UNDER THE ADULTERATION ACT OF GREAT BRITAIN.

The druggists of England have of late been greatly harassed by the ill-judged attempts of over-officious analysts or informers to entrap them into acts, which, by legal quibbles, and straining of terms, may be construed into offences against the Act. The recent prosecutions for selling adulterated milk of sulphur may be cited as instances. Everybody knows, or ought to know, that his old fashioned preparation is not a pure form of sulphur, but, as containing sulphate of lime, has been sold and used for a very long period. If pure precipitated sulphur were supplied to most of the persons who purchase and use milk of sulphur, they would not receive that which was intended, and,if they administered it, would probably give double the intended dose. The public receive what they ask and pay for, but the analysts and their friends insist that the terms "milk of sulphur" and "precipitated sulphur" are synonymous, and mean one and the same thing. Speaking correctly, they refer to substances of different composition—but in some cases the informer has asked for and procured milk of sulphur, and instructed the analyst to subject it to the tests for precipitated sulphur. In a recent case at Hyde, the chairman of the board of magistrates, Dr. Newton,—a gentleman of great parts, clerical, legal, medical, and pharmaceutical—complimented the chief constable on his judgment and acuteness in ferreting out and bringing to light this dreadful traffic in milk of sulphur. "If a drachm of this mixture" says the reverend doctor "were given to a child, the results in all probability

would be, that the ingredients would become hard, cause congestion and inflammation of the bowels, and even death. He had no doubt the mortality among children was largely owing to the introduction of mysterious substances into their little bodies." No doubt this horrifying information struck terror to the hearts of the mothers of Great Britain, who, in fancy, saw the the vitals of their babes petrified to stony hardness and their little bodies distended with huge casts of plaster of Paris. The timely warning of the good doctor, and the undefatigable efforts of his chief constable would avert the danger, and the hope of the nation would be spared.

The poor druggist was fined, and one would have thought that he would have been thankful that he had escaped thus easily, and that he had not received the full measures of his crimes: that he would reform, and that his fellow townsmen and druggists would take warning and never more offend. But mark the obstinacy and wilfulness of human nature. One of these druggists says "I am not an analyst; I am not, your worships; but I go through the world watching and hearkening, and with Professor Redwood on the one hand, and petty sessions on the other, not to obtrude my own experience, which, by this time, should count for something, I shall persist to buy, sell, prescribe, and otherwise use the original milk of sulphur as occasion may require." This man of bold speech does more than defy the bench, he goes to the apothecaries shop of the Good Doctor Newton and purchases a sample of milk of sulphur, which, with proper precautions, he sends to Professor Attfield for analysis. Alas, now for the frailty of human nature, and alas for the drug selling member of the Royal College of Surgeons; the worthy chief magistrate; "the preacher licensed by the bishop of his diocese" to instruct his neigbours in the mysteries of the Christian religion. What says the analyst? "Sample of milk of sulphur, marked No. 1:—Sulphur 40, sulphate of lime 60 per cent."

REGISTRATION OF PARTNERS UNDER THE PHARMACY ACT.

A correspondent asks:

"A., a capitalist, and B., an authorized druggist, wish to form a partnership to be styled B. & Co. Can it be done without it being

necessary for A. to register with the Pharmaceutical Society, supposing he acts as *silent partner ?*"

If our correspondent had read this Journal with any degree of attention he would have had no occasion to ask our view of the case, as we have frequently ventilated the subject thoroughly. We need, therefore, now only say that the law does not discriminate between silent and active partners and requires *all persons* engaged as principals to be registered. If there formerly existed any doubt on the subject, the opinion of Messrs. Mowat Maclennan and Downey, which was very opportunely handed to us a day or two ago, will serve to set the matter at rest.

January 10, 1877.

"Our opinion is requested whether, under the Pharmacy Act, a person having an interest as a partner merely, in a Chemist and Druggists' business, but taking no part in carrying on the business, is bound to register under the Act, at the peril of incurring the penalties prescribed ; and we are of the opinion that he is bound to register, and, in case of neglect, is liable to the penalties of the Act."

"We are also asked whether a registered Chemist and Druggist is liable to the penalties, by the mere neglect to pay his annual fee and take out his certificate in any year after the first, and we are of opinion that he is."

"The Statute declares, in clear terms, that it shall not be lawful for anyone to sell poisons unless he is registered, nor unless he has his certificate for the time the sale takes place."

(Signed) MOWAT MACLENNAN & DOWNEY.

According to this there can be no misunderstanding regarding the registration of partners, and the opinion also decides another matter about which there has been some discussion. It is evident that the registration must be from year to year ; that is from the first day of May in one year until a corresponding date in the next ; and that the mere fact of registration is no protection from the operation of the law except when the term of such registration includes the period at which any sale of poison is made. Members who are in default of fees, and who still continue to carry on business, are therefore not only liable to be sued for the amount of such fees, but also to prosecution for illegal sale of poisons. This is a very important point and should be borne in mind.

THE OPIUM CROP.

From advices received from the Smyrna correspondent of the *Philadelphia Drug Exchange Circular*, No. 46, it appears that there is little probability that the price of opium will decline during the year, but rather the reverse. The amount of old opium held by Eastern dealers, or scattered in the interior of the country, amounts to about 3000 baskets or cases, while the new crop will not exceed 3,300 baskets. The principal dealer at Smyrna holds about one-third of the entire crop, and, it is said will hold on for high prices. Dealers generally are on the look out for a rise, and the market is very firm. Additional color is given to the speculations of dealers by the fact of the absence of rain, which, if continued, will materially affect the sowings for the next crop. The last report from Smyrna says "our market closes very firm with prospects of no lower prices until next spring."

THE COUNCIL MEETING AND EXAMINATIONS.

The semi-annual examinations will be held on Tuesday and Wednesday, February 6th and 7th, in the Lecture Room, Shaftesbury Hall, and from present indications will be more largely attended than ever before, as fifty-three candidates have already signified their intention of being present.

The Council will meet, as required by law, on Wednesday, but as a quorum of city members can be obtained, will at once adjourn until next day, when the examinations will have concluded.

CORROSIVE LINIMENT.—In answer to a query published last month, we have received from a number of correspondents communications in which they substantially agree on the following formula:

Corrosive sublimate	1 ounce.
Camphor	1 "
Oil of turpentine	1 pint.

Powder the sublimate very finely, and gradually add the turpentine with constant trituration, in a mortar. Pour the mixture into a bottle, add the camphor, powdered, and mix well. The liniment must be shaken before it is used. It is employed for spavin, ring-bone, and almost all sorts of cuts, bruises, and ailments of horses. It is applied externally only, of course. The liniment is said to improve by age.—*Druggists' Circular.*

Editorial Summary.

AN ENGLISH SUBSTITUTE FOR GOA POWDER.—Mr. Balmanno Squire (*Pharm. Jour. & Trans.*) alludes to the late discussion on Goa powder, and to the fact that the remedy was proved to be identical with various other powders, used for similar purposes, in different parts of the world, as the ringworm powder used in Cochin China and in the Malay peninsula, under the name of *Poh di Bahia;* the powder used in Bahia under the name of *Araroba*, and the ringworm remedy used in India under the name of *Goa powder.* All these were proved to be one and the same thing, and it remained for Professor Attfield to prove that the active principle of this was *Chrysophanic acid*, and that this agent constituted some 85 per cent. of the powders examined. The acid is contained in rhubarb, dock root and many vegetable substances, and it is evident that goa powder is of vegetable origin, being apparently the medulla or pith of the stem and branches of a tree, probably a *Cæsalpinia*, or of some nearly allied genus. Granting the efficacy of goa powder as a remedy for ringworm and other skin diseases of a parasitic character, Mr. Squire proposes an ointment of chrysophanic acid to be employed as a substitute. Some care in manipulation is required in order to present the acid in this form. Advantage must be taken of the fact that the acid is soluble in hot benzole. Two drachms of acid and ounce of lard are, by means of a water bath, dissolved in the smallest possible quantity of benzol. The solution is then rapidly cooled, being rapidly stirred in order to ensure the equal distribution of the acid as the ointment sets. Mr. Squire thinks that this preparation might prove efficacious in non-parasitic skin diseases as well as those for which it has already shown itself to be a valuable remedy. In psoriasis and lupus it has proved a serviceable application, and these are amongst the most inveterate of the diseases of the skin. Should a demand arise for chrysophanic acid there can be no doubt but the present high price would give way, and that if the manufacture extended the product would ultimately become cheap. Since the publication of Mr. Squire's paper there have appeared in the journal above referred to two other communications relating to the subject. One of these is from Dr. H. R. Crocker, of University College Hospital, London, who says that Mr. Gerrard, the dispenser to the hospital, has, during the last nine months, prepared large quantities of chrysophanic acid ointment, and that it has been experimented with on an extensive scale in the hospital. The results of these experiments are in the hands of the editor of the *Lancet*, but will shortly be published, "when it will be seen that the ointment is by no means deserving of unqualified praise." Mr. Ger-

rard, who forwards the other communication, corroborates the above statement in regard to priority in the use of the ointment, and also says that little difficulty need be experienced in making the preparation, and that the use of benzole is unnecessary, simple trituration being sufficient. For a strong ointment the new basis *vaseline* was found to be much superior to lard.

A New Disinfectant.—In a paper in the *Pharm. Jour. and Trans.* Mr. C. T. Kingzett, F. C. S., reviews some of the theories which have been promulgated in regard to the formation of ozone and its relation to health. In course of time it was commonly believed that all slow oxidations gave rise to ozone. Amongst such oxidations were included that of turpentine, and the essential oils generally. Kosmann and Daubeny asserted that the green parts of plants produce ozone, but Mr. Kingzett thinks that the methods of identificatian did not differentiate between this body and peroxide of hydrogen, H_2O_2, a substance which is analagous in properties. The author has for some time been engaged in experiments on this subject, and has carefully studied the result of the slow oxidation of essential oils, including turpentine, hesperidine, myristicene, wormwood, cymene, menthene, the ethers, etc , and comes to the conclusion "that all bodies of the chemical formula $C_{10}H_{14}$ or $C_{10}H_{16}$, give by atmospheric oxidation peroxide of hydrogen, and *never* ozone." To the former agent he ascribes the healthful influence of eucalyptus and pine tree plantations. These trees secrete oils consisting originally of hydrocarbons, or terpenes, which in great part volatilize and undergo oxidation in the atmosphere. Some part, however, is polymerized and oxidized by the air, while yet in the tree, and thus are produced those camphors and resins which generally accompany the natural oils. Mr. Kingzett proposes to imitate this process of nature by exposing to a current of air, at the normal summer temperature, a mechanical mixture of turpentine and water, by which a solution may be obtained containing peroxide of hydrogen and camphoric acid, the latter a powerful antiseptic. The solution does not contain any unchanged oil of turpentine ; it appears to be non-poisonous, and does not injure textile, linen, or other fabrics. It is intimated that large quantities of this solution will shortly be prepared for use in private houses, public hospitals, urinals, etc., and for watering roads, streets. We are not told anything of the effect of this solution, but it may be presumed that the author will not let the subject rest here, and that we shall soon learn something more definite regarding the new disinfectant. As an instance of how far doctors may differ, this paragraph may be compared with an article entitled "Ozone as an Active Poison," in another part of this journal (p. 236).

MOLYBDIC ACID AS A TEST FOR ALCOHOL.—In a paper read before the Royal Irish Academy, Dr. Edmund W. Davy described his new test for alcohol, and gave many particulars and details of its manner of application and sensitiveness. It was found that, with ordinary precautions, one sixteen hundred and sixty-sixth part of a grain of alcohol could be detected in a mixture ; in other words that the test would show the spirit in one drop of a mixture of water and rectified spirit, in which the proportion of the latter present was only one thousandth part, by volume. The reagent is made by dissolving, at a gentle heat, one part, by weight, of molybdic acid, in ten parts of strong and pure sulphuric acid. The exact proportion does not appear to affect the sensitiveness of the test, but it is necessary to use the strongest sulphuric acid. The best way of operating is to place three or four drops of the molybdic solution in a small white porcelain capsule, and, having heated it slightly, to allow one or two drops of the liquid to be examined to fall gently on the acid solution, when, if alcohol be present, there will be developed, either immediately or after a few moments, a distinct blue discoloration. Where the alcohol is very largely diluted with water, it is well to continue for some time the heating of the last solution in order to drive off all the water possible, which unless thus removed, would dilute the liquid thus to be tested and interfere with the sensitiveness of the test, which is largely affected by the amount of water present. In testing the acid solution a water-bath should be used, as a high heat is injurious. The blue coloration is not alone peculiar to ethylic alcohol, as other alcohols, as those of methyl and butyl, also develop a similar tint, but the reaction is not so rapid or striking. The test may be taken advantage of in the examination of chloroform for alcohol, and chloral hydrate for alcoholate. Neither pure chloral hydrate or chloroform produce the discoloration. The test is one of the best, if not the best which has been proposed. All the others, save that of Berthelot, which is attended with considerable trouble, are subject to the same defect, that of not being positive tests for ethyl alcohol, and none of them are so sensitive as that now described.

WATER FROM SEA-WATER ICE.—In a paper contained in the *Proceedings of the Royal Society* Mr. J. Y. Buchanan gives a record of "Chemical work done on board H. M. S. Challenger" during the recent expedition, and amongst other things contributes some interesting facts regarding sea-water ice. It was found that pack-ice—which, it must be remembered, is a mixture of salt water ice, snow, and spray—though unfit to drink when a lump of it is melted as a whole, may serve as a source of fresh water if melted fractionally. The salt ice melts first, and a thermometer will indicate the point

when drinkable water is being formed. The salt in salt water ice is not retained as mechanically enclosed brine only, but exists in the solid form, either as a single crystalline substance, or a mixture of ice and salt crystals. Common salt, when separating from solutions at temperatures below the freezing point, crystallizes in hexagonal planes; sea-water ice, therefore, possibly bears some analogy to the isomorphous mixture occurring amongst minerals."

GLYCEROLE OF NITRATE OF BISMUTH.—In a late number of the *Pharm. Jour. & Trans.* Mr. Balmanno Squire described this new preparation, and in a still later issue Mr. J. Williams gives some of its reactions. The compound may be formed by dissolving 20 per cent. of crystallized nitrate of bismuth in pure glycerine. Heat must not be employed, or the solution will not bear dilution with water. In the preparation made in the cold the property of dilution is somewhat uncertain, and diminishes by keeping. The diluted solution will not bear boiling, or a basic, insoluble salt will be deposited. Caustic potash or soda, added to the diluted glycerole, causes a white precipitate, which presently redissolves, producing a bright clear liquid, perfectly mixible in all proportions with water. It is possible that this solution might possess advantages over the liquor bismuthi, B. P. The reaction possesses chemical interest, as it leads us to infer that the glycerole is not a mere solution in glycerine, but a true chemical combination, in which the glycerine plays a part similar to that taken by the citric acid in the liquor of the B. P. During the discussion which followed the reading of Mr. Williams' paper, before the British Pharmaceutical Society, several members stated their experiences with the new compound, and all agreed that heat should not be employed. In one case, in which a solution of one ounce and a half of nitrate in one ounce of glycerine was attempted by the aid of heat, a strong effervescence was at first produced, and afterwards it seemed as though his Satanic majesty had got in the bottle. Fumes and a dense smoke were given off, and presently the mixture began to rise and at last protruded from the bottle some eight inches, like one of the so-called Pharoah's serpents. Shortly afterwards the mass gave off sparks from the portion which came out first, and ultimately the whole thing became a mass of sparks, and gave a brilliant light for about half a minute. The merest trace of residue was left behind. It was suggested that this astonishing result might be due to the formation of nitroglycerine. A bottle containing some of the new glycerole, made by heat, and exhibited at the last meeting of the society, was handed round for examination. The glycerole had become quite opaque and gave off a strong odor of nitrous acid, suggesting unpleasant and perhaps dangerous decompositions.

PETROLEUM A REMEDY FOR MANGE AND BALDNESS.—On the authority of a report of Consul Stevens, the *Pall Mall Gazette* says that petroleum may be employed with great advantage in the baldness to which cows, dogs, horses, etc., are subject. The petroleum should be refined, and rubbed in vigorously with the hand, at intervals of three days, and six or seven times in all. Consul Stevens noticed that a servant of his, who was prematurely bald, and who, when trimming the lamps, was in the habit of wiping his fingers on the scanty locks which remained, soon realized the benefit of the petroleum treatment, for, in three months of lamp trimming experiences, his dirty habit procured for him a finer head of glossy black hair than he ever remembered possessing. We can corroborate the statement regarding the efficacy of petroleum in loss of hair in animals. An old retriever, belonging to a friend of ours, lost nearly all his hair, last spring, and became quite mangey. We recommended petroleum, and two applications, made about a month apart, completely cured the disease. The dog has now as fine a coat of hair as he ever had in his younger days. It is suggested that the remedy might be tried on man, but the disagreeable odor of the oil would be much against its employment.

MICA SCALE-PANS.—At a meeting of the American Chemical Society, reported in the *American Chemist*, Mr. W. J. Land read a short paper advocating the use of mica scale-pans for delicate balances, in place of the glass pans now used. The latter weigh about thirty grammes, while mica plates do not weigh one-tenth of this amount. By the balance being thus relieved of part of its load its sensitiveness is much increased. A great advantage of the mica is its flexibility, which enables one to dispose of weighed material with rapidity and exactness, as by bending the mica into a semi-cylindrical form it can be adopted to the mouth of flasks, etc., with the greatest ease. After three years' daily use the author says that he finds his mica-pans as good as at first. Small discs of mica form excellent transparent covers for platinum and porcelain crucibles when the heat applied does not exceed low redness.

OLEATE OF BISMUTH.—Mr. S. C. Betty brought before the notice of the British Pharmaceutical Society a solution of bismuth in oleic acid, so that the compound contained twenty per cent of the base. In order to dissolve this large amount it was necessary to powder very finely the oxide of bismuth; gradually incorporate it with the oleic acid, heat the mixture to a temperature near its boiling point; allow it to cool to about 60°; aud agitate from time

to time, during three or four days, or until solidification took place. The compound had been tried to a limited extent by some members of the medical profession, and it was hoped that as it presented the bismuthic base in the condition most favorable for absorption it would prove "a remedy, or, at least, an adjuvant, in cutaneous affections of the exanthematous type, certainly superior to those insoluble compounds which have been hitherto employed."

SERUM SANGUINIS EXSICCATUM.—Dr. F. Vacher, of Birkenhead, England, who recently advocated the use of serum sanguinis as a therapeutic agent, and proposed some methods for its preservation, now finds those methods inconvenient and inefficient, and, in the *Practitioner* for December, states the results of experiments made to discover the best mode of overcoming the strong tendency to decomposition manifested by this very unstable remedy. It was found that when the clear serum was carefully dried, on plates, at a temperature below 145°, there were obtained bright yellow scales yielding an almost white powder, soluble in water, permanent, and capable of fulfilling all the therapeutical uses to which fresh serum may be applied. One ounce of the powder is about equal to ten times its weight of fresh serum.

FORMULA FOR THE SO-CALLED ERGOTIN.—Mr. C. L. Mitchell (*Am. Jour. Pharm.*) says that a very satisfactory product may be obtained by moistening eight ounces of ergot, in fine powder, with a mixture of two fluid drachms of acetic acid and eight fluid ounces of water; allowing the mixture to stand twenty-four hours; percolating with water; evaporating the percolate to four fluid ounces; adding an equal bulk of alcohol; allowing the mixture to stand several hours and then filtering and evaporating to the consistence of an extract. The product should equal about one-eighth the weight of the ergot, and is of about eight times the strength.

POISONOUS ACTION OF ALCOHOL ON DOGS.—A paper by MM. Dujardin, Beaumetz, and Audige, in *Comptes Rendus*, reproduced in the *Journal of the Chemical Society*, gives the results of experiments on the poisonous action of alcohol on dogs. The authors found that the amount required to produce death in twenty-four hours varied with the atomic composition of the alcohol. Thus the fatal dose per kilogram (about 2¼ pounds) of weight of the animal, adminis-

tered by the stomach, was found to be for ethyl alcohol, 7·75 grams (about 120 grains); methyl alcohol, 5 grams (77 grains); propyl alcohol; 3·13 grams (48 grains); butyl alcohol, 1·74 grams(27 grains); amyl alcohol, 1·48 grams (23 grains).

PRESERVATION OF HERBS, ETC.—For the preservation of drugs of vegetable origin, Mr. Wilder (*Druggists' Circular*) strongly recommends packages or bags of paper, or open drawers, instead of air-tight bottles or tins. Drugs thus protected and kept in a dry and dark place, will preserve for a considerable period their properties and appearance. An occasional airing is advantageous. There are, of course, some powdered drugs which form exceptions to this practice, and are best preserved in well-stopped bottles. Of this kind are the powders of asafœtida, camphor, castoreum, cubebs, tragacanth, opium, squill, etc., and other drugs containing soluble or deliquescent constituents.

CINCHONA CULTIVATION IN ST. HELENA.—According to the *Pharm. Jour. & Trans.* the attempt to acclimatize the cinchona in the island of St. Helena has been at length abandoned. It is not clear that the plantations might not yet be made a success, as the late undertaking was conducted in a spiritless and half-hearted fashion. The above mentioned jonrnal also states that in the report of the Dutch Government upon the cinchona plantations in Java it is asserted that some specimens of the bark of the *Cinchona Calisaya Ladgeriana* yielded 13.25 per cent. of quinine, equal to 17.86 per cent. of sulphate.

EXPLOSION OF A MIXTURE OF CHLORIDE OF LIME AND GLYCERINE.—A correspondent of the *Druggists' Circular* was experimenting in order to find out the quantity of chloride of lime which might be dissolved in glycerine, when an explosion occurred by which the hands of the operator were severely burned by the hot mixture. This adds another instance to many which have been cited showing the dangerous nature of glycerine when in contact with substances which yield up their oxygen readily.

COLORATION OF SOLUTION OF SOLUTION OF IODIDE OF POTASSIUM.—It has heretofore been asserted that the yellow coloration some-

times observed in solution of iodide of potassium is to be attributed to the action of light; but, from experiments made by M. Battandier, it is conclusively shown that access of air is also necessary to the decomposition, and that acids present in the atmosphere, and especially carbonic acid, are the principal agents in effecting the formation of hydriodic acid, which is the main result of the change.

WORKING OF THE ADULTERATION ACT IN GREAT BRITAIN.—In some districts in England the Adulteration Act has been in operation for thirty months; in others for only about one-tenth that period; but taking the average period as a year we find that the number of analysis of food number 15,480. Of the samples thus examined 26 per cent., or 3,963, were found to be adulterated, and the number of convictions amounted to 1,542 or about 10 per cent. The articles analyzed comprised milk, tea, mustard, butter, bread and coffee.

The *Medical Times* publishes the following copy of a label which was said to have been affixed to a bottle of medicine sent out by a druggist doing business at Cork: "*Caution*—To all medicines for outward application this label is attached to the bottles, in order to distinguish it from others for internal use, but persons unable to read should not be allowed to administer medicines, and never give or take a dose without perusing the label."

DEPOSIT IN TINCTURE OF GALLS.—At a meeting of the Pharmaceutical Society of Great Britain, Mr. Gerrard alluded to a deposit, of a light brown color, which he had noticed on the sides and bottom of a bottle containing tincture of galls, prepared by percolation some two weeks previous. When subjected to microscopical examination, and tested with reagents, the deposit was found to answer to the characteristics of ellagic acid, a decomposition product of tannic acid.

COLEIN.—At a meeting of the Chemical Society, Professor A.H. Church read a paper on the red coloring principle obtained from the stems and leaves of the *Coleus verschaffellii*. *Colein* is described as being non-crystallizable; of a brilliant crimson color; unalterable by light; not decomposed by dilute acids, but easily affected by alkalies.

FREEZING OF MERCURY.—The *Popular Science Monthly* says that, during a recent cold snap, the quicksilver pumps of the Eureka Mill, Carson River, would not work, and on examination, it was found that the mercury in the tank had become congealed into a solid mass.

ANTIDOTE TO AMYL NITRITE.—Hyponitrous ether, the active ingredient of sweet spirit of nitre, has been suggested by Dr. Squibb, as an antidote in poisoning by nitrate of amyl.

Varieties.

NEW COPYING INK.—A correspondent of the *Druggists' Circular* communicates the following receipt for making a copying ink that can be used without press, brush, or water:

Nigrosine	6 grains.
Glycerine	1 drachm.
Alcohol	2 drachms.
Water, sufficient to complete	1 ounce.

Triturate the nigrosine with the glycerine in a mortar, and add successively the alcohol and the water.

"An ink of this kind, says our correspondent, is largely advertised in the Chicago and St. Louis papers. After a number of experiments, the above formula was found to answer every purpose. As a specimen, he showed a letter a copy taken on "pig-tail" paper, which is more heavily glazed than the ordinary copying paper. The following are the directions to use the ink: The writing should be touched lightly with a blotter, or be left to dry for a short time, before taking the impression. This is done by simply pressing the copying paper with the fingers on the writing, and after a little practice any one can take a copy successfully. The letter to be copied being "pulled taut," the paper is spread over it and rubbed briskly with the fingers. We can only add that the ink in question produces a deep blue-black writing which appears to be practically waterproof, and that the hand-copy is very legible, while the original from which it is taken shows scarcely more marks than if only blotting paper had been applied. Many of our readers, we are certain, will find the receipt so freely published of great practical value."

THE PROPERTIES OF SQUILLS.—According to Dr. Huseman, in the *Med. Wochenschrift*, this drug, in the form of an extract, such as is employed in the German pharmacopœia, has a very constant action on living ani-

mals. It affects the innervation of the heart, and the muscles of the heart, exactly in the same way as do digitaline, antiarine, and those other alkaloids which are especially known as cardiac poisons. The diuretic action of squill can only be explained by the increased blood-pressure which it induces by its influence on the heart, since no other organ is acted upon by it, and it does not produce any manifest irritation in the kidneys during its elimination. The indications for and against the use of squill in the different forms of dropsy are almost exactly the same as in the case of digitalis. Extract of squill has no expectant power due to its elimination by the bronchial mucous membrane, nor has it any antipyretic power; on the contrary, its exhibition produces a greater or less elevation of temperature. *Med. & Surg. Reporter.*

BLUE-BLACK WRITING INK.—For the sake of new subscribers, we republish a recipe which has, more than once, already appeared in our columns. We cannot say whether the product is similar to Arnolds. Carter's, or any other manufacturer's ink, but we are assured that it makes a good writing fluid.

Aleppo galls, bruised	9 ounces.
Bruised cloves	2 drachms.
Cold water	80 ounces.
Sulphate of iron	3 ounces.
Sulphuric acid	70 minims.
Sulphate of indigo, in thin paste	4 drachms,

Place the galls with the cloves in a gallon bottle, pour upon them the water and digest, shaking often, for a fortnight. Press, and filter through paper into another gallon bottle. Next, put in the sulphate of iron, dissolve it, add the acid, and shake briskly. Lastly, add the indigo, mix well, and filter again through paper.—*Druggist's Circular.*

SAFRANIN.—Prof. Boettger calls attention to a beautiful display of colors, which arises if one or two drops of conc. sulphuric acid are poured on a few minute particles of safranin in a porcelain capsule or tile. By stirrinff with a glass rod a splendid blue color appears, which is converted into emerald green by adding one or two drops of water. By thus alternating the addition of sulphuric acid and water most of the spectral colors will be produced.—*Buchn. N. Rep.*, 1874, *Am. Jour. Pharm.*

ARREST OF PALPITATION OF THE HEART.—A correspondent in the *Union Med.*, August 21, calls attention to the fact that palpitations, when not depending on organic disease, may be almost immediately arrested by bending the head downwards and allowing the arms to hang pendent. The effect is still more rapidly produced by holding the breath for a few seconds while the body is in this bent position.—*Medical Times, London.*

SALT WATER SOAP, according to a French patent, consists of resin soap and glue. 40 parts oil or grease and 10 parts resin are made into soap with an excess of alkali, then add 40 parts glue dissolved in sufficient water, containing one pint oxalic acid. Stir well at a temperature of about 135°F. A soft soap is obtained by using potassa.—*Ber. d. d' Chem. Ges in Am. Jour. Pharm.*

DRUGS, MEDICINES, &c.	$ c.	$ c.
Acid, Acetic, ffort	0 13 @	0 14
Benzoic, pure	0 22	0 27
Citric	0 90	1 00
Muriatic	0 03½	0 05
Nitric	0 10	0 13
Oxali	0 15	0 17
Sulphuric	0 03	0 05
Tartaric, pulv	0 44	0 47
Ammon, carb. casks	0 18	0 20
" jars	0 18	0 20
Liquor, 880	0 20	0 22
Muriate	0 14	0 15
Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
Nitrous	0 40	0 42
Sulphuric	0 45	0 50
Antim. Crude, pulv	0 15	0 17
Tart "	0 50	0 55
Alcohol, 95 per ct.....Cash	2 13	0 00
Arrowroot, Jamaica	0 18	0 22
Bermuda	0 50	0 65
Alum	0 02¾	0 03½
Balsam, Canada	0 33	0 38
Copaiba	0 65	0 70
Peru	2 10	2 20
Tolu	3 80	4 00
Bark, Bayberry, pulv	0 18	0 20
Canella	0 17	0 20
Peruvian, yel. pulv	0 35	0 50
" red "	1 60	1 70
Slippery Elm, g. b	0 18	0 20
" flour, packets	0 28	0 32
Sassafras	0 12	0 15
Berries, Cubebs, ground	0 20	0 25
Juniper	0 06	0 10
Beans, Tonquin	1 00	1 20
Vanilla	18 00	24 00
Bismuth, Alb	2 25	2 50
Carb.	2 40	2 65
Camphor, Crude	0 33	0 35
Refined	0 38	0 40
Cantharides	1 65	1 75
Powdered	1 80	1 90
Charcoal, Animal	0 04	0 06
Wood, powdered	0 10	0 15
Chiretta	0 23	0 30
Chloroform	0 90	1 55
Cochineal, S. G	0 80	0 85
Black	90	0 95
Colocynth, pulv	0 60	0 65
Collodion	0 70	0 80
Elaterium .....oz	3 20	4 00
Ergot	1 25	1 30
Extract Belladonna	1 65	1 80
Colocynth, Co	1 25	1 75
Gentian	0 50	0 60
Hemlock, Ang	0 00	0 95
Henbane, "	2 50	2 60
Jalap	4 50	5 00
Mandrake	1 75	2 00
Nux Vomic.....oz	0 40	0 50
Opium .....oz	1 25	
Rhubarb	5 00	5 50
Sarsap. Hon. Co	1 00	1 20
" Jam. Co	3 50	4 00
Taraxacum, Ang	0 70	0 80
Flowers, Arnica	0 22	0 25
Chamomile	0 30	0 35
Gum, Aloes, Barb. extra	0 70	0 80
" " good	0 40	0 50
" Cape	0 16	0 20
" " powdered	0 20	0 30
Socot	0 50	0 75
" " pulv	1 00	0 00
Arabic, White	0 31	0 58
" powdered	0 60	0 75
" sorts	0 19	0 24
" " powdered	0 42	0 50
" com. Gedda	0 13	0 16
Assafœtida	0 15	0 20
British or Dextrine	0 13	0 15
Benzoin	0 35	0 75
Catechu	0 12	0 15
" powdered	0 25	0 30
Euphorb, pulv	0 40	0 45
Gamboge	1 00	1 20
Guaiacum	0 35	1 00
Myrrh	0 50	0 80

DRUGS, MEDICINES, &c.—*Contd.*	$ c.	$ c.
Sang Dracon	0 60	
Scammony, powdered	5 50	6 00
" Virg. "	14 50	—
Shellac, Orange	0 50	0 55
Gum, Shellac, liver	0 38	0 40
Storax	0 40	0 45
Tragacanth, flake	1 10	1 75
" common	0 53	0 65
Galls	0 22	0 30
Gelatine, Cox's 6d	1 15	1 20
Glycerine, common	0 25	0 28
Vienna	0 30	0 32
Prices	0 60	0 75
Honey, Canada, best	0 16	0 17
Lower Canada	0 10	0 12
Iron, Carb. Precip	0 16	0 20
" Sacchar	0 40	0 55
Citrate Ammon	1 10	1 20
" & Quinine, oz	0 40	0 85
" & Strychine	0 17	0 20
Sulphate, pure	0 07	0 09
Iodine, good	3 20	3 50
Resublimed	3 90	4 20
Jalapin	1 25	1 50
Kreosote	2 50	2 60
Leaves, Buchu	0 22	0 32
Foxglove	0 25	0 30
Henbane	0 35	0 40
Senna, Alex	0 27	0 60
" E. I.	0 14	0 20
" Tinnevilly	0 20	0 30
Uva Ursi	0 15	0 17
Lime, Carbolate.....brl	5 50	—
Chloride	0 05	0 06
Sulphate	0 08	0 12½
Lead, Acetate	0 13	0 14½
Leptandrin.....oz.	0 60	—
Liq. Bismuth	0 45	0 55
Lye, Concentrated	1 30	1 50
Liquorice, Solazzi	0 50	0 55
Cassano	0 23	0 40
Other brands	0 14	0 25
Liquorice, Refined	0 35	0 45
Magnesia, Carb. 1 oz.	0 20	0 25
" 4 oz.	0 19	0 20
Calcined	0 60	0 65
Citrate.....gran.	0 60	0 75
Mercury	0 80	0 85
Bichlor	0 90	1 00
Chloride	1 05	1 10
C. Chalk	0 50	0 55
Nit. Oxyd	1 15	1 25
Morphia Acet	3 45	3 55
Mur.	3 45	3 55
Sulph	3 60	3 70
Musk, pure grain.....oz	25 00	.....
Canton	0 60	0 70
Oil, Almonds, sweet	0 55	0 66
" bitter	14 00	15 00
Aniseed	3 25	3 50
Bergamot, super	6 00	6 25
Caraway	3 20	3 50
Cassia	1 75	2 00
Castor, E. I	0 13½	0 15
Crystal	0 22	0 25
Italian	0 24	0 26
Citronella	1 00	1 10
Cloves, Ang	3 50	3 60
Cod Liver, Imp. Gal	2 00	2 10
Croton	1 40	1 50
Juniper Wood	0 80	1 00
Berries	2 75	3 00
Lavand, Ang.....oz.	0 00	1 00
Exotic	1 25	1 50
Lemon, super	3 50	3 75
ord	0 00	0 00
Orange	2 40	2 60
Origanum	0 65	0 75
Peppermint Ang	15 00	16 00
" Amer.	4 00	5 00
Rose, Virgin	8 50	8 75
" good	6 60	6 75
Sassafras	0 80	0 90
Wintergreen	4 50	4 75
Wormwood, pure	5 00	6 00
Ointment, blue	0 80	0 90
Opium, Turkey	7 60	7 75
pulv	9 75	10 00

DRUGS, MEDICINES, &c.—*Cont'd*	$ c.	$ c
Orange Peel, opt.	0 35	0 36
" good	0 15	0 20
Pill, Blue, Mass	0 90	1 00
Potash, Bi-chrom	0 14	0 16
Bi-tart	0 30	0 32
Carbonate	0 13	0 15
Chlorate	0 27	0 30
Nitrate	8 00	9 00
Potassium, Bromide	70	0 80
Cyanide	0 55	0 60
Iodide	2 75	2 90
Sulphuret	0 25	0 35
Pepsin, Boudault's oz	1 25	—
Houghton's doz.	8 00	9 00
Morson's oz.	0 85	1 10
Phosphorus	1 10	1 20
Podophyllin	0 50	0 60
Quinine, Pelletier's	—	2 45
Howard's	3 45	—
" 100 oz. case.	3 40	—
" 25 oz. tin..	3 40	—
Root, Colombo	0 13	0 20
Curcuma, grd	0 12½	0 17
Dandelion	0 17	0 20
Elecampane	0 16	0 17
Gentian	0 08	0 10
" pulv	0 15	0 20
Hellebore, pulv	0 25	0 00
Ipecac, "	1 30	1 40
Jalap, Vera Cruz	90	1 15
" Tampico	0 70	1 00
Liquorice, select	0 12	0 13
" powdered	0 15	0 20
Mandrake "	0 20	0 25
Orris, "	0 20	0 25
Rhubarb, Turkey	2 10	2 25
" E. I	1 00	1 10
" " pulv	1 10	1 20
" " 2nd	0 60	0 70
" French	0 75	—
Sarsap., Hond	0 38	0 50
" Jam	0 95	1 00
Squills	0 10	0 15½
Senega	0 80	9 90
Spigelia	0 30	0 32
Salts, Epsom	2 00	2 50
Rochelle	0 30	0 32
Soda	0 01½	0 02
Seed, Anise	0 13	0 16
Canary	0 07½	0 08
Cardamon	1 75	1 85
Fenugreek, g'd	0 08	0 09
Hemp	0 06½	—
Mustard, white	0 16	0 17
Saffron, American	0 50	0 60
Spanish	10 00	11 00
Santonine	15 00	15 50
Sago	0 08	0 09
Silver, Nitrate Cash	14 90	16 00
Soap, Castile, mottled	0 11	0 14
Soda, Ash	0 03¾	0 05
Bicarb. Newcastle	4 00	4 25
" Howard's	0 14	0 16
Caustic	0 03¾	0 04
Spirits Ammon., arom	0 38	0 40
Strychnine, Crystals	1 70	1 80
Sulphur. Precip	0 12	0 13
Sublimed	0 03½	0 05
Roll	0 03	0 04½
Vinegar, Wine, pure	0 55	0 60
Verdigris	0 35	0 40
Wax, White, pure	0 70	0 80
Zinc. Chloride oz	0 10	0 15
Sulphate, pure	0 10	0 15
" common	0 06	0 10
DYESTUFFS.		
Annatto	0 35 @	0 60
Aniline, Magenta, cryst	2 00	2 60
" liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 07½	0 09
Camwood	0 07	0 08
Copperas, Green	0 01½	0 02
Cudbear	0 16	0 25
Fustic, Cuban	0 03	0 04
Indigo, Bengal	2 40	2 50
Madras	0 75	0 80
Extract	0 26	0 30

DYESTUFFS—*Continued.*		
Japonica	0 06½	0 07
Lacdye, powdered	0 33	0 38
Logwood	0 02½	0 03
Logwood, Camp	0 02¾	0 03
Extract	0 12	0 13
" 1 lb. bxs	0 15	—
" ½ lb. "	0 16	—
Madder, best Dutch	0 09	0 10
2nd quality	0 08	0 09
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
SPICES.		
Allspice	0 13 @	0 14
Cassia	0 25	0 28
Cloves	0 48	0 50
Cayenne	0 17	0 20
Ginger, E. I	0 14	0 15
Jam	0 25	0 30
Mace	1 10	1 10
Mustard, com	0 20	0 25
Nutmegs	1 00	1 05
Pepper, Black	0 15	0 16
White	0 26	0 28
PAINTS, DRY.		
Black, Lamp, com	0 09 @	0 10
" refined	0 25	0 30
Blue, Celestial	0 08	0 12
Prussian	0 65	0 75
Brown, Vandyke	0 10	0 12½
Chalk, White	0 01	0 01½
Green, Brunswick	0 07	0 10
Chrome	0 16	0 25
Paris	0 26	0 28
Magnesia	0 20	0 25
Litharge	0 07	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 06¾	0 08
Venetian	0 02½	0 03
Sienna, B. & G	0 07	0 08
Umber	0 07	0 10
Vermillion, English	0 90	1 00
American	0 25	0 35
Whiting	0 85	1 00
White Lead, dry, gen	0 08½	0 09
" " No. 1	0 07	0 08
" " No. 2	0 05	0 07
Yellow Chrome	0 09	0 15
" Ochre	0 02½	0 03½
Zinc White, Star	0 09	0 11
COLORS, IN OIL.		
Blue Paint	0 12 @	0 15
Fire Proof Paint	0 06	0 08
Green, Paris	0 30	0 37½
Red, Venetian	0 07	0 10
Patent Dryers, 1 lb tins	0 10	0 12
Putty	0 03¾	0 04½
Yellow Ochre	0 08	0 12
White Lead, gen. 25 lb. tins	2 20	—
" No. 1	1 65	—
" No. 2	1 70	—
" No. 3	1 45	—
" com	1 30	—
White Zinc, Snow	2 50	2 75
NAVAL STORES.		
Black Pitch	3 00 @	3 25
Rosin, Strained	3 75	4 00
Clear, pale	4 50	6 00
Spirits Turpentine Imp Gall	0 75	0 78
Tar Wood	4 50	4 75
OILS.		
Cod Imp. Gall	0 84 @	0 86
Lard, extra	1 25	1 27
No. 1 "	1 14	1 16
No. 2 "	1 02	1 05
Linseed, Raw per 7½ lbs	0 60	0 61
Boiled "	0 64	0 55
Olive, Common Imp. Gall	1 26	1 30
Salad "	2 04	2 10
" Pints, cases	4 00	4 20
" Quarts	3 25	3 50
Seal Oil, Pale Imp. Gall	0 96	1 00
Straw "	0 90	0 95
Sesame Salad "	1 56	1 60
Sperm, genuine "	2 70	2 75
Whale refined	0 00	0 00