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Original and Selected Papers.

LAC DYE.

BY E. B. SHUTTLEWORTH.

Although all are familiar with the purplish powder sold in our shops as lac dye, but few are acquainted with its history and application. It is generally supposed to bear some relation to shellac, and to be used as a red dye in a manner not generally understood by those not actually engaged in the operations of the dye-house. This seeming want of information is our apology for introducing a subject upon which we have little to offer which can, with a due sense of propriety, be termed original.

The substances known in commerce as *seed lac* and *shellac*, bear so close a relation to lac dye, that in giving a history of one, we must necessarily include that of them all. They are all derived from a common source—a substance known as *stick lac*, which we have never seen in this country, but which is sometimes found in other markets. We are not acquainted with any authority which describes with accuracy the manner in which stick lac is produced. By some it is said to be an exudation from certain trees; others maintain that it is secreted by an insect. This point we cannot determine, but, from the nature of the trees upon which it is found, we incline to the opinion that the resinous portion is of vegetable origin, while the coloring matter is certainly the production of the animal kingdom.

Stick lac is found as an incrustation upon the branches of certain trees—*Ficus Indica*, the banyan tree, *F. religiosa*, *Croton Lacciferum*, *Butea frondosa*, and *Rhamnus jujuba*, growing, principally in the eastern part of India, and, more particularly, in the districts of Bengal, Assam, Siam, and Pegu; a supply is also said to be obtained from the Malabar coast. The incrustation varies from a line to a quarter of an inch in thickness, but, occasionally it takes the form of a knotty excrescence, like that seen on plum trees, in this country. At first sight the lac appears to be devoid of regular structure, but closer investigation reveals the existence of numbers of small pores, or cells, which are as regularly distributed as in the honeycomb, although arranged somewhat differently. The incrustation of lac is, in fact, a structure of a similar nature with that formed by the bee, and answers a similar purpose, being used for the storing of provision, as well as for the protection of an infant colony.

The lac insect, *coccus lacca* or *c. ficus*, is one of the genus to which the cochineal and Kermes insects belong. It is described by Ure as being about the size of a louse, red, round, flat, with twelve abdominal circles, and six claws. The male insect is about twice this size, and is providently furnished with wings, as the fecundation of five thousand females depends upon his efforts. The female, previous to depositing her eggs, attaches herself to the twig on which the young brood is to be brought forth, and, by puncturing the bark, surrounds herself with the milky juice which exudes therefrom. This secretion is to serve the double purpose of providing nourishment and shelter for the young, which, in due time, issue from the eggs under the mother, and take possession of the cells provided for their reception, where, previous to full development, they elaborate the coloring matter which constitutes the tinctorial principle of lac dye. The usual number of the brood is between twenty and thirty, but many colonies of these exist upon the same branch; indeed, the name *laksha*, which signifies one hundred thousand, and is applied by the Hindoos to the habitations of these insects, would lead us to infer that the progeny is numerous.

The incrusted twigs, which constitute the stick lac of commerce, are collected by the natives before the brood has made its escape, as, at this time, the coloring matter is present in greatest quantity, probably from the presence of the bodies of the insects. The twigs are finally dried in the sun, and are then ready for exportation, or further manipulation, with a view to the purification of the resin, and the separation of the coloring matter. The following analysis, made by Dr. John, will give an idea of the composition of this crude lac:

An odorus common Resin	80
Resin insoluble in ether	20
Coloring matter, analagous to cochineal	4.50
Bitter balsamic matter	3.00
Pure yellow extract	4.50
Laccic acid	4.75
Fatty matter, like wax	3.00
Skin of the insects and coloring matter	2.50
Salts	1.25
Earths	0.75
Loss	4.75
	120.00

The extraction of the coloring matter is rudely effected by removing the stems and other woody matter from stick lac, coarsely pulverizing the resin, and subjecting it to the action of water, by which the greater portion of the coloring matter is dissolved. The watery solution is evaporated nearly to dryness, and the pulp is formed into cakes of about two inches square, and half an inch thick, which are, usually, stamped with the initials of the manufacturer's name, and, finally, dried in the sun. These cakes constitute lac dye as it comes into the hands of the drug grinders.

Before proceeding further, it may be necessary to mention that the washed lac of the previous operation is dried, and then takes the form familiarly known as *seed lac*. If a further purification is required, the seed lac is placed in coarse bags of about four feet long, and six inches in circumference; one of these bags is held by two men, who suspend it, for some short time, over a charcoal fire, until the lac is liquid enough to pass through the pores of the canvas. The bag is then twisted by the men at each end, and dragged over the smooth surface of a plaintain tree, which causes the resin to assume the form of the thin plates known as *shellac*.

To return to lac dye: we have said that the processes used for the extraction of the coloring matter were crude, and capable of improvement. This is obvious from an examination of the cakes, which rarely contain half their weight of coloring matter. We are not aware of any exact analysis having been published, but Tomlinson gives the composition as coloring matter 50, resin 25, and alumina, sulphate of lime, carbonate of lime and sand, 22 per cent. An attempt was made by Mr. Stephens, a surgeon of India, to precipitate the coloring matter by means of alum, and it is said that the lake produced, of which a quantity was forwarded to England, produced very fine colors.

We are not acquainted with any method for the estimation of lac dye, except the trial of a weighed sample by means of the color produced on a given weight of wool, and its comparison with the results of previous experiments. This is the method we always employ, and in the absence of one more exact, it answers a good purpose. Another plan which lately suggested itself for the determination of the coloring matter, consists in the treatment of, say, 100 grains of the dye, in very fine powder, with hydrochloric acid, followed by water, until all soluble matters are dissolved. The residue, when dried, should not exceed 50 grains. It will be necessary to have the dye in *fine* powder, from the fact that the contained resinous matter might shield the particles of coloring matter from the action of the acid. This hint might prove useful to drug grinders, who almost invariably grind too coarse, making an article difficult of solution.

The coloring principle of lac is but slightly soluble in water. When used for dyeing it is always necessary to employ an acid for solution. Various acids and mixtures have been tried, but hydrochloric has been found to give the best results. Three parts of hydrochloric acid sp. gr. 1.15 diluted with an equal weight of water are, usually, sufficient to dissolve eight parts of lac dye; the mixture should be allowed to stand twenty-four hours. The correct mordant is made by dissolving one part of feathered tin in twenty parts of hydrochloric acid. Twelve fluid ounces of this suffice for each pound of the solution of lac dye. The solution and mordant should be mixed before using. Some dyers modify the tint by the use of cream of tartar and sumach, in the bath.

The colors produced by lac dye are various shades of red and pink. It is used on the score of economy, as a substitute for cochineal, and the colors developed are but slightly inferior, possessing moreover, a decided advantage in not being so liable to discoloration by perspiration. The dye is not adapted for use on cotton, and is therefore confined to silk and wool.

On the Use of Tinfoil for Preserving Substances Liable to Change on Exposure to Air.*

BY ERNEST BAUDRIMONT.

Tin reduced to thin sheets has for many years been employed for preserving a great number of substances from the action of air and moisture. The thin leaves (foil) of this metal are essentially repellant to moisture. When cemented to the surface of damp walls, they protect the paperhangings which may be afterwards applied, and they are in like manner used for lining the interior of boxes and drawers in which dried medicinal leaves and flowers are kept. It has long been the practice to enclose chocolate in tinfoil, to prevent the fatty matter contained in it from soiling the paper which forms the outside wrapper; in the same way butter of cacao itself is preserved, and some sorts of sweetmeats, sausages, and cheese are among the articles similarly protected. Tobacco-pouches are lined with tinfoil to preserve the flavor and humidity of the tobacco. Cakes of opium are kept in a moist and uniform state by wrapping them in this material, and bisulphate of soda is kept in the same way, for use in making artificial Seltzer water with Briet's apparatus. Lastly, on account of the opacity of tinfoil to the rays of light, bottles are coated with it for the purpose of excluding light from vegetable substances which would be injured by its action.

Notwithstanding the knowledge of all these facts, it might be said that the application of tinfoil for the preservation of substances liable to change is still rather limited and there seemed to be a prospect of its admitting of a more general use than has hitherto been made of it. At the same time there was an absence of any precise experiments for the purpose of determining in a scientific manner the degree of impenetrability of tinfoil. Having been engaged for some time in the investigation of this subject, I have obtained the following results:—

For many years past I have observed that cacao butter, which readily becomes rancid even when kept in bottles into which it has been introduced in the melted state, if the bottles be opened from time to time, does not undergo the same change when moulded in tablets and wrapped in tinfoil. This fact, which was confirmed by many observations, and could only be explained by assuming the impenetrability of tinfoil to atmospheric air, formed the starting-point for some experiments in the same direction, which proved satisfactory. Thus, a piece of well-burned quicklime, enclosed in a double wrapper of tinfoil, was exposed to the atmosphere of the laboratory by the side of another similar piece which was exposed without protection. While the latter became slacked, that which was protected by the tinfoil, and weighed 92·2 grams on the 1st of December, 1867, had only gained 3 decigrams in weight at the expiration of one month, and after being kept until the 25th of March, 1868, it had only increased 94 grams. It had thus gained only 1·8 grams in four months. On being then taken out of its metallic envelope much heat was developed from absorption of moisture, and it fell into powder.

Satisfied by this experiment of the efficacy of tinfoil for preserving bodies from the action of air and moisture, it seemed probable that substances the most susceptible of change might be kept in the same way. It was found that substances so deliquescent as chloride of calcium and liver of sulphur, and efflorescent salts such as carbonate and sulphate of soda, remained almost unchanged when wrapped in tinfoil, increasing or diminishing only to a few thousandths of their weight in several weeks.

Other experiments were made of a more precise character. It is well known that fresh lemon become rapidly dried and ultimately hard when exposed to the air, and they also become perished and covered with mould. I had endeavoured to prevent this drying and moulding by placing the lemons in close vessels, in dry air, in sand, and also in bran, but none of these methods proved efficacious. Thus, for example, in twenty-one days the lemons lost on an average, 17·33 per cent. of their weight in sand, and 17·13 per cent in bran. Experiments were made for the purpose of ascertaining the effect of enveloping the fruit in tinfoil, and also of coating it with a film of collodion. Some of the fruit prepared in each way, and some unprepared, was weighed, exposed to the air, and again weighed at intervals of a month. This method was applied to lemons and oranges, and the following results were obtained:—

1. The unprepared fruit became rapidly dried. In two months the lemons had lost 42 per cent; of their weight, while oranges, in the same time, had lost 26 per cent.

2. Collodion, when applied to the fruit alone, exert but a feeble preservative influence in retarding spontaneous evaporation. In two months lemons coated with collodion had lost 29 per cent., and oranges 22·5 per cent.

3. Tinfoil almost entirely prevents the drying of the fruit. In two months lemons had only lost 1·58 per cent., and in three months 3·16 per cent. In one case the loss was only 0·92 per cent during the longer period. Oranges lost about 5 per cent. in two months. On the removal of the metallic envelope, the fruit was found to be as fresh and fragrant as when the experiments were commenced. These observations and experiments will tend to show the remarkable power of tinfoil in preserving substances enclosed in it from the influence of air and moisture derived from air, and may induce those who are interested in the subject to extend the application of this preservative means.

*From Jour. de Pharmacie et de Chemie.

The present Status of Potash Production.*

BY PROF. CHARLES P. WILLIAMS.

From being the most abundant and cheapest of the alkalies, potash has rapidly passed to the position of the dearest and most expensive, and one of the chief problems in technical chemistry is comprised in the efforts to lessen its consumption by the substitution of other bases, or to cheapen and increase its production by the utilization of the abundant raw materials offered by the mineral kingdom. The first step has in very many instances, been successfully accomplished by the employment of soda, ammonia or lime, as basic factors to accomplish a given result previously and almost exclusively brought about by potash. Thus, the pure potash alum has disappeared almost entirely from the markets, its place being assumed by a chemical equivalent in which at least one half of the original potash is replaced by ammonia—an ammonia potash alum. So also, the manufacture of the somewhat useful chlorate of potash was formerly effected by the passage of chlorine gas into potash solution—a process resulting in the production of five equivalents of the much less valuable and less useful chloride of potassium for each one equivalent of the desired salt. Now, a mixture of lime and potash is employed and chlorate of potash and chloride of calcium are produced. These two salts are much more readily separated by crystallization than were the two products of the old method, at the same time a great saving of potash is effected, forty-six parts of caustic alkali, producing nearly three hundred and twenty-three parts of chlorate, where formerly upwards of three hundred and thirty-six were required for the same operation.

In spite of these and similar substitutions, potash becomes scarcer and more expensive. We can not get rid of its use entirely. There are many important technical operations in which it is, as yet, a *sine qua non*, and some in which it must always remain such. In the production of a pure crystal glass, soda can not replace potash, since it imparts a greenish hue to the product. Nitrate of soda can not be substituted for saltpetre in the manufacture of gunpowder, though it has already taken off the burden from the nitrate of potash in very many of the operations of the manufacturing chemist. In the formation of the simple and compound cyanides potash will probably always be a requisite.

Hence, new sources of supply must be sought after and be made available. The slow process by which the vegetable kingdom extracts and assimilates the valuable potash from mineral matter must be replaced by the quicker changes of art operating on the same substances. The original forests of this country—one of the great centres from which potash has been sent into commerce—are so rapidly disappearing or finding such manifold uses and demands for their woods and

* From the Scientific American.

timbers that the old source of supply and means of production—that from the incineration of terrestrial vegetation—are fast losing their prominence by the supercedure of new raw materials and new methods of manipulation. We procure potash now by the incineration of marine and litoral plants, as well as by that of land vegetation. We derive it from inorganic nature by the decomposition of feldspar and other potash-bearing minerals, and by the treatment of certain material from the rock-salt mines of Prussia. Farther, even the animal kingdom has been placed in certain countries, under contribution towards the same end. Let us examine into these several sources, and arrive at the present status of potash production the world over, omitting, however, the old source of the ashes of land vegetation as being sufficiently familiar to require nothing further than mere mention.

The salt deposits which underlie the variegated sandstone of Stassfurt, Prussia, have a thickness of more than six hundred feet, and present marked differences in appearance and composition at various depths. Four distinct levels are easy to be recognized, and there are, according to Daubree, in the ascending order, as follows :—107 metres of beds of rock-salt separated by thin layers of water-free sulphate of lime (anhydrite) ; 31½ metres of rock-salt in beds separated by seams of polyhalite (hydrated sulphates of lime, magnesia and potash, containing from 15 to 26 per cent. of the last-named salt ; 28 metres of mixed rock-salt (70 per cent.) Kieserite (hydrated sulphate of magnesia, 17 per cent. of the mass) and carnallite (the potash salt—a double chloride of potassium and magnesium, 13 per cent.) ; on this last is superimposed the layer in which the carnallite forms 55 per cent., the rock-salt 25 per cent., and the kieserite 16 per cent., associated with several allied minerals, such as tachydrite, sylvite and kainite. "The explorations have developed the existence of a mass of carnallite equal to 6,000,000 tons of chloride of potassium." The quantity removed from two pits, one at Stassfurt and one at Anhalt, about half a mile distant from each other, has gradually increased from 2,500 tons in 1861 to 150,000 tons in 1866, and is now worked at thirteen establishments into chloride of potassium, which, at some of them, is converted into caustic potash and the carbonate, as well as into potash compounds designed for employment for fertilizing purposes. The effect of the opening of these deposits "has been greatly to diminish the cost of potash, to disturb its production from other sources, and to extend its use even to agricultural purposes. As yet, no other workable deposits of carnallite have been discovered, although it is found in small quantities in many other mines of rock-salt, and there is every reason to suppose it will be discovered in large quantities elsewhere." From 20,000 to 30,000 tons of 82 per cent. chloride are now annually produced at this locality and find ready sale in all parts of Europe, bringing in France, about $40 per ton.

Feldspar, containing say about 13 per cent. of potash, has been proposed as a source of one alkali. Lawrence suggests its extraction, in the form of the caustic or carbonate, by mixing the finely pulverized orthoclase with sawdust and straw, and arranging the mixture in heaps, which are to be dampened from time to time with urine or some other nitrogenous liquid. After undergoing for six months this process of decomposition through fermentation, the materials are mixed with a thick cream of lime, made into bricks, which are calcined at a high temperature By leaching this residue, the potash dissolves and silicate of lime, etc., remain behind.

Hack proposes to heat the mineral with lime, and to treat the calcined mass with water under a pressure of eight atmospheres, for the production of a strong lye, through which carbonic acid is passed for the precipitation of silica and alumina, and for the formation of carbonate of potassa. Meyer's plan is essentially the same as Hack's. Ward uses fluor spar along with lime for the decomposition of feldspar for obtaining the potash. None of these methods have as yet been utilized on a practical scale, but doubtless, in time some of them, as well as those of Wurtz and Tilghman, for extracting the alkali as chloride or sulphate from green sand marl or feldspar, will become technically importanc.

From about twenty-two tons of wet seaweed there are, on the average, produced somewhat more than five hundred pounds of chloride of potassium in addition to bromide, iodine and various soda salts. This source of potash has, however, since the discovery of the Stassfurt deposits, become of minor importance, but the weeds still continue to be collected, mainly for the extraction of the bromine and the iodine, more especially for that of the latter. In 1862, when American "ashes" were selling at thirteen and a half cents per pound, the chloride from this source corresponding to 49 per cent. of anhydrous potassa, costs about one hundred dollars per ton, making the real potash cost nine and one half cents per pound.

About twenty-five years ago it was suggested by Dubrunfaut that the molasses from the manufacture of beet-root sugar could be utilized in the direction of the production of potash compounds, by first converting the uncrystallizable sugar into alcohol, which is distilled off, and subsequently evaporating the liquor to dryness and incinerating the residue. According to Payen, the ash of this molasses contains 49.88 per cent. of potash soluble in water, and 1.7 per cent insoluble. This plan was first carried into practice at the distillery of Serret & Co., but has since been adopted on a large scale at several places in both France and Germany. The establishment at Waghauseln, Baden, annually produces upwards of 300 tons of commercial potashes, containing from 88 to 94 per cent. pure carbonate of potassa.

In 1862, Dr. Hoffman, in his report on the London Exhibition, called attention to a new source of potash utilized in certain parts of France, more especially at the great seats of the woollen manufacture, as Rheims, Fourmies and Elbœuf. Here the liquors in which more than 27,000,000 kilog. of sheep's wool are washed are bought for the "suint" they contain. This "suint" is a compound of potash with a peculiar nitrogenous animal acid, about which but little is known, which was first pointed out by Chevreul as forming no less than a third of the weight of raw merino wool, and a somewhat less proportion of ordinary, coarser wools. It forms on the average about fifteen per cent. of the weight of raw fleece and is exceedingly soluble in cold water. The washings of the amount of fleece above given would give, according to J. Lawrence Smith, about 1,167,750 kilog. of pure potash, worth, at the average rate of American potashes, from $400,000 to $450,000. The process of extraction is a simple one, and consists simply in boiling the washing liquor down to dryness and calcining the residue, which somewhat resembles baked molasses in appearance, in retorts with the production of gas, tar, and ammonical liquid, together with a coke-like substance which is leached. From the solution thus obtained, sulphate, chloride and carbonate of potassa, *free from corresponding soda compounds*, are separated by continued evaporation.

Unguentum Sabinæ.*

BY T. H. BATEMAN.

To judge from the limited demand for this ointment, it does not now find much favor among the medical professisn generally, although, in the opinion of some eminent surgeons, forming one of the best external irritants and escharotics we have, acting much more efficiently in keeping open blisters, etc., than does the ung. elemi. of the British Pharmacopœia, which, to some extent, has taken its place.

Looking at this ointment from a pharmaceutical point of view, it is exceedingly unsatisfactory ; the specimen I have before me (supplied by a London wholesale house) is perfectly rancid, and resembles in appearance "old green elder ointment."

Dr. Royle says, "When made in a porcelain vessel, or a water-bath, it is of a yellowish-green colour, efficient and active, and will keep good for a long time," which it certainly does not, as far as my experience goes.

The B. P. orders fresh savin-tops, collected in spring, to be used, thus compelling manufacturers to make their year's stock at once, which is decidedly objectionable, as it is thus frequently sent out rancid. Although this condition does not in any way interfere with its effect as an irritant, yet it prevents its coming under the category of "elegant preparations."

Pharmacentists (excepting those in a large way) are in the habit of trusting to their wholesale druggists for it, the demand as a rule, being too small to justify their making even the quantity ordered in the Pharmacopœia ; besides, made on a small scale, it is exceedingly wasteful, the savin-tops being so bulky as to render it difficult to strain the ointment from them.

For satisfaction's sake I have prepared some myself, adopting the somewhat modified formula, which differs only from the B. P. in the addition to gum benzoin :—

Fresh Savin-tops (bruised)..... 8 oz.
Yellow Wax.......................... 3 oz.
Prepared Lard.......................10 oz.
Gum Benzoin (coarse powder) 1 oz.

Melt the wax and lard on a water-bath, add the gum benzoin, and digest for half an hour, constantly stirring, then add the savin-tops, and further digest for twenty minutes; lastly, strain with pressure through calico or flannel, stirring occasionally until cold.

Resulting ointment, pale yellowish-green, with the odour of savin distinctly marked, which odour I have failed to detect in most, if not all bought specimens. The addition of gum benzoin (judging from its preserva-

*From the Pharmaceutical Journal, London.

tive effect on other ointments) will, in this case I hope, tend to prevent any decided change from taking place.

Manby Grove, Stratford, June 2nd, 1870.

Iodide of Calcium, and Syrup of Iodide of Calcium.*

BY OTTMAR EBERBACH.

Having had, on numerous occasions, to use the chemical specialities called iodide of lime and syrup of iodide of lime, and finding that the articles sold under these very unchemical names were not simple chemical combinations, (as for example, iodide of iron or syrup of iodide of iron,) but mixtures (the former a mechanical mixture of iodine and quicklime, the latter of the two distinct chemical combinations, called iodide of calcium and iodate of oxide of calcium; altogether different in their medical proprieties,) as I was desirous to obtain a preparation in strict accordance with the above title, and at the instigation of Prof. Sager, M.D., I investigated the matter, with the following results:

The preparation, called iodide of lime, is a mechanical mixture of iodine and quicklime, which, when put into hot water, undergoes a chemical reaction, forming iodide of calcium and iodate of the oxide of calcium, as illustrated by the following equation:

$$6CaO + 6I = 5CaI + CaO.IO^5$$

These combinations are both contained in the so called syrup of iodide of lime. To prepare the iodide of calcium free of the iodate of oxide of calcium, there are different methods, the most practical of which is as follows:—prepare first a solution of the protoiodide of iron, by mixing iodine with a small excess of iron and sufficient water; let this stand until the solution assumes a pale green color; filter, and add to the filtrate one third as much iodine as had been used to make the solution of protoiodide of iron; heat to the boiling point, and add sufficient milk of lime to precipitate all of the iron, which precipitates in the form of Wheeler's granular magnetic oxide of iron, according to the following equation:

$$FeI + Fe_2I_3 + 4CaO = FeO.Fe_2O_3 + 4CaI.$$

To obtain the iodide of calcium filter the solution, and evaporate the filtrate with the exclusion of air, as carbonic acid has the tendency to decompose it. Out of the concentrated solution it crystalizes in the form of needles; by evaporating to dryness it forms a white fusible mass. It is soluble in alcohol, very deliquescent, and decomposes when fused in contact with air, form oxide of calcium and free iodine. To make the syrup of iodide of calcium, the following formula is proposed by us. Take of:

Iodine,	4 oz.
Iron, (in form of wire)	7½ dr.
Distilled water,	q. s.
Milk of Lime, (fresh)	q. s.
Sugar,	28 oz.
Simple Syrup,	q. s.

Mix 3 oz. of the iodine, with the iron, and 4 oz. of water, in a thin flask with long neck; shake occasionally until the reaction has ceased and the solution assumes a pale green color; filter the solution and add the remainder of iodine; heat to the boiling point and add milk of lime until all of the iron is precipitated; filter and wash the pricipitate with hot water until all the iodide is washed out, then bring the whole to the measure of 20 oz.; add the sugar and dissolve by a gentle heat; to the solution add enough simple syrup to make it measure 40 oz.; mix thoroughly and fill into 2 oz. bottles well corked.

The syrup is a transparent colorless liquid which does not tinge starch paper blue. Mixed with sulphuric acid it gives a white precipitate of sulphate of oxide of calcium and turns the supernatant liquid brown, which, by heating, emits violet vapors of iodine.

*From the Michigan University Medical Journal.

On a Solution of Morphia for Hypodermic Injection.

The mode of administering opiates hypodermically, whereby a much less dose proves efficacious, and the derangement of the stomach and other disagreeable effects, when taken by the mouth, are avoided, has almost become universal in cases where these objections would tend to prohibit their use. To quote Sir William Jenner: "Who that has suffered from a painful local affection can think of the alleviation to his sufferings which followed on the subcutaneous injection of an anodyne, without gratitude."

The solution for the purpose should be an aqueous one, neutral if possible, and of such strength that six minims contain a maximum dose. The syringe commonly used is graduated up to six minims. In addition to this graduation, some have the piston worked by a screw, of which so many turns are equal to a minim; others are worked by pressure in the ordinary manner.

A solution of morphia—one grain in six minims, the most convenient strength—may be made by first dissolving one drachm of the acetate (recently prepared) in about four fluid drachms of hot distilled water, adding a drop or two of diluted acetic acid, if the solution be not complete. Filter into a graduated measure while hot, and, the fluid being all passed through, wash the filter by sprinkling over it sufficient distilled water, that the whole filtered product, when cold, may measure exactly six fluid drachms.

It is important that the acetate of morphia be recently prepared. It has then, as found in commerce, a faint acetic odor, and is an almost pure white dry powder. If of a pale brownish-grey color and having a somewhat musky odor—characteristic of age—it will be less soluble. This is not due to the loss by volatilization of acetic acid merely, as this loss, if replaced, and a complete solution effected by applying heat—the strength of one grains in six minims being adhered to—the solution, probably on account of the salt having undergone some molecular change by keeping, will, when cold, become a mass of feathery crystals.

The solution should not be kept long. When prepared as above, it is almost void of color, but gradually changes to a vinegar-brown. If the acetate of morphia be not quite fresh, this color is produced in the solution when first prepared.

When there is not much demand for the acetate, it will be impossible to have it *always* recently prepared. In such cases it would be better to prepare the solution direct from pure morphia and acetic acid, using 25 per cent. less than would be required of the acetate, to allow for the combined acetic acid.

To make six fluid drachms of the solution in this manner, forty-five grains of morphia and about four fluid drachms of diluted acetic acid will be required. Mix them in a small flask or ordinary ounce phial, and apply the heat of a water bath till dissolved, adding a drop or two more of the acid, if necessary, being careful that the solution at last is neutral or only slightly acid.. Filter as directed above, and add sufficient distilled water to make six fluid drachms. In this solution one grain of pure morphia will have been dissolved in eight minims, and it will contain one grain of the acetate in six minims.

Other salts of morphia might be used with advantage. Among these, the so-called bimeconate is very soluble, and makes a tolerably stable solution. Injected, it appears to be quite as active as the acetate, although it represents about one-fourth less of pure morphia; but being uncrystallizable its composition as generally made may not be so uniform. The citrate is likewise a very soluble salt.

The hydroclorate and sulphate require upwards of sixteen parts of water to hold them in solution. This prohibits their use for injecting hypodermically, as a large dose could not be conveniently administered by the syringe in modern use. As regards the sulphate, this statement is opposed to the statement of Abl. quoted in Gmelin's *Chemistry*, and Storer's, *Dictionary of Solubilities*, that it is soluble in two parts of water at 18·75° C. (about 66° F.) From repeated experiments, both with the freshly-prepared salt and others, I find this to be an error. This salt of morphia, which is easily crystallizable and very stable, is most preferred in the United States.—*Pharmaceutical Jour. Lond.*

Manufacture of Red Lead from Nitrate of Lead.

M. Pichon.—After referring to the fact that the red lead (minium) of commerce almost always contains some metallic lead and some oxide of lead (massicot), incompletely oxidized, the author proposes to take nitrate of lead and granulated metallic lead in the proportions of one equiv. of nitrate to four of metal; these materials are placed in a cast-iron caldron, lined inside with lead; water having been added, the mixture is heated to 60° or 80°; after two hours time a yellow sandy mass is found to have settled at the bottom of the vessel; the liquid should then be decanted into a leaden vessel, wherein the nitrate of lead soon crystallizes; after the crystals have been drained they are decomposed by means of heat, by being placed for that purpose into retorts similar to those in use for the manufacture of nitric acid; the acid vapors given off are condensed by suitable means, and the oxide of lead, which is deep black-coloured and perfectly homogeneous, thus obtained is employed for the manufacture of red lead instead of massicot; the red lead thus produced is, according to the author, perfectly homogeneous, free from lead, and its composition is $3PbO_4 + PbO_2$; there is a difference of opinion as regards the formula to be assigned to minium—$PbO_2 + {}_2PbO$ (Dumas); Pb_2O_3PbO (Winkelblech); $Pb_2O_3,4PbO$ (Longchamp); Pb_4O_5 (Mulder).—*Revue Hebdom. Chem. News.*

ONTARIO COLLEGE OF PHARMACY

PRESIDENT, - - - WM. ELLIOT, ESQ.

The regular meetings of the College take place on the FIRST FRIDAY *evening of each month, at the Mechanics' Institute, when, after the transaction of business, there is a paper read, or discussion engaged in, upon subjects of interest and value to the members.*

The College admits as members, Chemists and Druggists of good standing, and their assistants and apprentices, as associates, on payment of the following fees:

Principals, - - - - - $4 00 per Annum
Assistants & Apprentices, 2 00 "

The JOURNAL *is furnished* FREE *to all members.*

Parties wishing to join the College may send their names for proposal to any of the members of the College. A copy of the Constitution and By-laws of the College will be furnished on application.

HENRY J. ROSE, *Secretary.*

THE CANADIAN

Pharmaceutical Journal.

E. B. SHUTTLEWORTH, EDITOR.

TORONTO, ONT., SEPTEMBER, 1870.

Correspondence and general communications, of a character suited to the objects of this JOURNAL, are invited, and will always be welcome. The writer's name should accompany his communication, but not necessarily for publication.

Subscriptions will not be acknowledged by letter, as our sending the paper may be taken as sufficient evidence of the receipt of the money.

All communications connected with the paper to be addressed, post-paid,

"EDITOR CANADIAN PHARMACEUTICAL JOURNAL TORONTO."

WE should like to call the attention of our friends to a much neglected feature in the JOURNAL, the development of which would be a source of gratification to ourselves, as well as our patrons. One of the primary objects in the establishment of the JOURNAL was the providing of a medium through which an interchange of information, and ideas, might be made. It was though that, by this means, much might be done to the building up of a truly scientific practice of pharmacy in the country. Every druggist, in the pursuit of his calling, meets with facts which are of value, and which may not have been observed by others. It is to the interest of all that these observations be recorded and verified; or perhaps improved upon, to the benefit of all concerned. To let slip these facts is bad enough, but to keep the light under a bushel, hiding away any little stock of knowledge arising from original research, or experiment, is altogether unworthy of these enlightened days. Even when viewed in the light of personal gain, there is little policy shown by the adoption of such a course, and but little advantage is gained. In nine cases out of ten, the observation is stowed away in the note book, or the memory, and becomes so mildewed, by age, as to become altogether obscured, and lost sight of.

We do not think, however, that many of our readers belong to the narrow-minded and miserly class to which we have alluded, but incline to the opinion that our communications are limited in number from the fact that our friends do not rightly appreciate the value of the information which they might impart. We have, sometimes, spoken to those of our acquaintances who, in the exercise of their daily avocation must meet occasionally, with new facts. On alluding to the propriety of committing these experiences to print, we almost invariably receive the same answer—such and such a thing is not worth writing about. This is a mistake; the most trifling item, if it be not generally known, is worth recording—the slightest improvement is another step nearer perfection. If the camphor pills won't roll, and a drop of castor oil removes the difficulty, give the fact publicity, and it may be the means of saving hundreds of hours of valuable time, and no end of annoyance.

We occasionally meet with the excuse—at all times a bad one—that time cannot be spared for writing. Of course, our friends know their own business best, and we would only remind them of the old adage, "Where there's a will there's a way," and hope that the inclination will not be wanting.

Again we say, give us a helping hand. The JOURNAL was not instituted, nor is it carried on, for selfish purposes, but for the mutual benefit of all. We solicit, then, the cooperation of our friends, especially those connected with the College, and trust that our request will meet with a ready response.

Cultivation of Ipecac in India.

The cultivation of ipecacuanha has been attempted in India, but so far with but limited success. Mr. Anderson, the superintendent of the Botanical Gardens, Calcutta, obtained, in 1866, a plant from the Royal Gardens at Kew. This plant has died, but seven other plants, propagated artificially from the original one, are still in existence, though growing very slowly. Mr. Clarke, in the Indian *Medical Gazette*, says: "It is very possible that when the plant once gets up, it may not prove slow growing, and that when we once have plants that seed, it may not prove slow of propagation; but I fear many days will elapse before any produce is likely to be obtained." We trust the attempt will ultimately prove successful, and this is not unlikely, when we remember the difficulty with which the cultivation of cinchona was at first attended, and the progress that is now being made. According to a late report, the number of cinchona plants at Darjeeling, alone, exceeds 3,000,000; some of the plants being nineteen feet high.

Preparation of Liquor Plumbi Subacet. by the Cold Process.

M. Nerning (*Jour. de Pharmacie*) proposes to obviate the formation of a precipitate of insoluble basic acetate, by shaking together the litharge, acetate of lead and water, without the employment of heat. After the expiration of twenty-four hours the liquor is filtered, and, if kept in well stoppered bottles, is said to remain clear for a length of time. If we remember rightly, most of the foreign Pharmacopœias recommend a prolonged digestion, at a *gentle* heat; and Wittstein, long ago pointed out the disadvantages of boiling the solution, at the same time calling attention to the fact that the solution could be made with an equal certainty of dissolving the oxide, without the employment of heat beyond the ordinary temperature of the air.

New Agent for the Removal of Iron Stains from Fabrics.

A writer in the *Chemical News* says that the following method is not attended with the usual bad results, in regard to the destruction of the fibre, which, on account of prolonged contact, ensue when oxalic acid, or salt of sorrel are used. The stain must be touched with yellow sulphide of ammonium, by which it will be immediately blackened; after the lapse of a minute or so, wash out the excess of sulphide, and treat the black spot with dilute muriatic acid, by which it is entirely removed; finally, wash well with water.

New Stain for Woods.

A correspondent of the *Scientific American* says, that butternut may be stained in imitation of black walnut by washing it over with liquor calcis. Cherry, treated in a similar manner, is said to resemble mahogany. Other woods had not been tried.

ATTEMPTS are being made in various parts of Canada to push a business with the unsuspecting or ignorant, by the sale of so-called patent rights, for the manufacture and vending of certain forms of sulphurous acid, or its salts, to be used for antiseptic purposes. It is needless to say that, as the preservative action of these agents has been known and recognized throughout the civilized world for many years, it would be impossible for any person to patent their use in this country.

It is, however, possible to contrive a new name for the compounds, and to affix printed directions, which may be copyrighted. This has been the course pursued, and some of the names adopted are certainly original enough—*Liquid Ozone*, for instance. As we know there is considerable effort being made to delude parties into the purchase of these "patent rights," we insert this note to put our readers on their guard.

The publication of the American edition of the *Chemical News* has been discontinued, or rather it has been merged into a new form called the *American Chemist*. It is under the editorial charge of Dr. Chandler and Mr. W. H. Chandler, and is in most respects an independent publication, although the greater bulk of the matter appears as published in the *Chemical News*. The *American Chemist* is published by Messrs. W. Baldwin & Co., New York, at the former price—$5 per annum.

The July number marked the commencement of a new series of the *Pharmaceutical Journal and Transactions*, of London, England. For many years the journal has been under the editorial charge of Prof. Redwood, and up to last month has been issued monthly. It is now published in weekly numbers, and by a decision of the Council, the editorship has been transferred to Mr. Benjamin H. Paul, Ph.D., F.C.S., who obtained twelve votes, Dr. Redwood obtaining seven; the remaining candidate, was not successful in obtaining any support.

We are pleased to notice the election of Mr. J. C. Brough, the well known editor of the *Chemist and Druggist*, to the office of Principal Librarian and Superintendent of the London Institution, a post which has previously been held by several eminent men, including the celebrated Greek scholar, Porson. Mr. Brough has, of course, to resign his connection with the *Chemist and Druggist*, but promises to continue contributions to its pages, and to assist in its further development.

Notes and Queries.

Reducer.—Fusion of Silver. —(1) The melting point of silver is about 1850° Fahr.; that is, at a full red heat. (2) When pure silver is retained for some time at this temperature, it absorbs oxygen equal to twenty-two times its bulk. On the cooling of the metal, this gas is expelled, giving rise to the "spirting" to which you refer. If the silver contains a small percentage of copper, the absorption of oxygen is prevented. You may have remarked that it is, principally, from metal reduced from samples of well-washed chloride that the expulsion of gas takes place. (3) Silver may be most readily freed from copper, when in a melted state, by projecting upon its surface small portions of nitrate of potash, or borax; by this means all the baser metals are oxidized, and will be retained by the flux. (4) Silver is volatile at a high temperature; the loss from this cause is, however, but slight, but by the violence of the boiling of the contents of a heated crucible, particles of silver may be mechanically carried over. The presence of arsenic or antimony increases the volatility of silver, and by prolonged contact with the chlorides of the alkaline metals, a considerable loss may be sustained from the formation of chloride of silver, which mixes with the flux.

Dr. McL.—We have handed your communication to the Committee on Legislation, who will doubtless return it for publication, with such remarks as they think necessary to prevent a misunderstanding of the points urged.

M. D.—Cinchonine vs. Quinine.—In the face of such conflicting evidence, it would indeed be difficult for us to determine the relative value of these two alkaloids in the treatment of intermittent fevers. By some authorities, the action of each is described as quite similar; this is denied by others, who affirm that there is a marked diversity, and that one can never become a substitute for the other. Dr. Daniell, a surgeon in charge of troops at Sierra Leone, says, in a letter to Prof. Bentley, published some time ago, (*Phar. Jour.*, 1863,) that a large quantity of cinchonine was furnished for the purpose of testing its remedial powers, and also of ascertaining whether it could not be used as an economical substitute for quinine. The doctor had ample scope for experiment, but after a faithful trial, the cinchonine had to be abandoned, from the pain and cerebral distubances produced. Other investigators realized similar results. At one time, during the Southern rebellion, the writer was in charge of a regiment, consisting of some seven hundred men, who were principally engaged in the swamps of Southern Tennessee. Fevers of the remittent and intermittent type were, of course, very prevalent, and the consumption of quinine was consequently considerable—often amounting to one and a half to two ounces per day. A small lot of sulphate of cinchonine, consisting of some thirty ounces, was received from the Medical Department, with orders to test and report on its value as a substitute for quinine. We gave it a fair trial—as far as trifling with the health of the men would allow—but found it by no means equal to quinine. Doses of thirty grains to a drachm were ineffectual in cases where the effects of twelve grains of quinine were decided and prompt. About one half the cinchonine was thus consumed in unsatisfactory experiments; the remainder we had not conscience to use, in urgent cases, but had it mixed with a quantity of *spiritus frumenti*, by way of "bitters." So ended our experience with cinchonine. There is, however, no lack of evidence on the other side of the question. In a work on quinine and anti-periodics, by Dr. Macpherson, Surgeon-General in the East Indies, it is stated that the effects produced are precisely analagous to those of quinine, the same cerebral disturbances being produced, and in the same degree; its power, compared to that of quinine, being, however, as one to three. Briquet (*Traité Therapeutique Quinquina*) bears similar testimony. He says that the power is from one-third to one-fourth. Pareira says: "When we take into consideration the analogy of composition and of chemical properties of these two alkaloids, we are led to suspect analogy of physiological effects. When they were, in the first instance, submitted to examination, cinchonia and its salts were thought, principally on the evidence of Chomel, to be much inferior to quinia and its salts. But the subsequent observations of Dufour, Petroz, Potier, Bally, Nieuwenhuis, Mariani, Bleynie, and others, have proved that the disulphates of the alkaloids may be substituted for each other. Nay, Bally gives the preference to the disulphate of cinchonia, on the ground that it is less irritating than the disulphate of quinia." In the presence of so much evidence, we must leave the subject to your own experimenting. Experience is the best teacher.

R. M.—Preparation of Iodoform.—A good form is found in Wittstein:—2 parts of carbonate of potash, 2 parts of iodine, 1 part of alcohol of 90 per cent., and 5 parts of water are put into a retort, the latter placed in a water bath after attaching a receiver, and heated until its liquid contents are entirely colourless. A sand bath may be used, but in this care must be taken that the temperature is not more than sufficient to keep up the most gentle evolution of gas; the receiver must, during the operation, be well cooled. When the retort is quite cool its contents are poured into the receiver, the latter emptied into a cylindrical glass, and allowed to subside; the mass of yellow scales are collected on a filter, well washed with water, and dried by pressing several times between filtering paper. The yield is about 17 per cent. or $\frac{1}{6}$ the weight of the iodine used. Iodoform forms lemon-yellow laminated scales, which magnified appear more or less as six-sided plates; it is soft to the touch, and of an aromatic smell, like saffron, or rather, perhaps, like a mixture of iodine and chloroform; its taste is similar, but becoming disagreeably strong of iodine; it volatilizes slightly at the ordinary temperature, at 212° Fah. quickly and without decomposition (consequently it is readily drawn over with water), fuses at 240° Fah.—248° Fah. to a brown liquid, but with partial decomposition into iodine vapour, ioduretted hydrogen and residual carbon, which, strongly heated in the air, leaves no residue. Water shaken with iodoform acquires, in a very slight degree, its odour and taste, it dissolves only 1-13000th part; on the other hand, 1 part of iodoform is soluble in 80 parts of cold, and in 12 parts of boiling alcohol, of 80 per cent., and still more readily in boiling ether. The alcoholic solution varies from a straw colour to sulphur-yellow, the etheral is golden-yellow; both solutions have a neutral reaction, with a sweetish etheral taste, but afterwards a continuous burning one of iodine. Aqueous solution of potash, when warm, has no action on iodoform, whilst an alcoholic solution quickly decomposes it into formiate of potash and iodide of potassium:—

1 at. C_2HI_3, and 4 at. KO, form
1 at. $KO+C_2HO_3$, and 3 at. KI.

ONTARIO COLLEGE OF PHARMACY.

The regular monthly meeting was held at the usual place, on Friday evening, 9th inst.

The Vice-President occupied the chair.

After routine business, the following new members were elected:

A. C. Slavin, M. D............Orillia.
W. J. Dyas.. ....Lucan.

ASSOCIATES.

Preston Lambert..............Toronto.
J. J. Hall.......................Woodstock.
E. B. Borland.................Fenelon Falls.
C. P. Geary.....................St. Thomas.
David Miller...................Paris.

A Communication received by the Secretary, regarding the subjects of the proposed examinations, was referred to the report of the Committee on Text Books, to be found in the May number of the JOURNAL; and an application for membership was laid aside for endorsation.

The Chairman said there was evidently some misapprehension as to the hour for the meeting to commence, as he understood one or two members had gone away, having come at eight o'clock, half-past being the time, and there was a little allowance to be made for those who found that hour rather early.

The Secretary said that by some error in the report of last meeting, the discussion on the subject proposed by Mr. Brydon was announced for this evening, while those present would remember it was appointed for the October meeting, when it was hoped all would be prepared to discuss the subject.

The meeting adjourned.

H. J. ROSE, Secretary.

The English Commercial Soda Test.

Mr. John Pattinson writes as follows to the *Chemical News*, in regard to a common source of error in alkalimetrical determinations of sodas:—

My attention has lately been drawn to a strange error made by some analysts in attempting to apply the English commercial test for soda to samples of alkali, soda-ash, &c., the result of which error is to make the test indicate from 1 to 1½ per cent. more soda than the sample contains by the proper English test. It is well known that this (the English soda test) had its origin in the early days of the soda trade—when chemists believed the equivalent of soda to be 32, and that of carbonate of soda 54; and that, consequently, test acid was made so that 40 parts of sulphuric acid neutralized 54 parts of carbonate of soda equal to 32 of soda. This method of testing has always been, and still is, used by the soda trade throughout England; and it is a custom well understood by both buyers and sellers. It indicates 0.66 per cent. more soda in a 50 per cent. alkali, than the rigidly correct test based on the new equivalent 31 would indicate. It is certainly desirable, for the sake of scientific accuracy, that the correct equivalent, 31, should be used in testing; but seeing that manufacturers have expended their capital in plant, and made their contracts for their various materials on the understanding that a product containing a certain percentage of soda would be obtained, and, seeing that there are other commercial customs of the trade still in force, which tell as much against the manufacturer as the test does in his favor—such, for instance, as that of not charging for fractions of percentages, it is more the province of an association like the Alkali Manufacturers' Association, than that of an analytical chemist, to make alterations in trade usages affecting such vast interests. Certainly, if any alteration be made at all by chemists, it should be made in the direction of scientific accuracy, and not in the contrary direction, as in the case to which I have referred. The error, I find, arises in this way: The test-acid is made so as to indicate the exact amount of soda according to the new and correct equivalent 31—that is, that 40 parts of sulphuric acid should neutralize 53 parts of carbonate of soda, equal to 31 parts of soda.

To convert the results obtained by this test-acid into the English commercial soda-test, it is incorrectly assumed that the 31 parts of soda are equal to 32,—in other words, that the 53 parts of carbonate of soda contain 32 parts of soda. This is where the error lies; for, according to the correct English test, 54 parts of carbonate of soda, and not 53, contain 32 of soda; and, therefore, by the English test, 53 parts of carbonate of soda contain only 31·41 of soda. By thus mixing up the old and the new systems of equivalents, a sample of soda-ash which, by the correct English test, contains 59·66 per cent. would be returned as containing 51·61 per cent. of soda. A sample of caustic soda which, by the correct Enlish test, would contain 75·0 per cent. of soda would, by this erroneous method, indicate 76·4 per cent. It is only necessary to point out this error in order that it may be avoided and guarded against by any of your readers interested in the buying and selling of alkali.

The New Patent Laws of the United States.

It may be useful to some of our readers to learn something in regard to the new Patent laws. We subjoin the following from the *Scientific American*:

The advocates of the free trade system, if they did not succeed at the late session of Congress in realizing all their aims, certainly made a clean sweep so far as patents are concerned.

This country is now thrown freely open to all foreigners in respect to patents, and the peoples of all countries may come or send here and compete with American genius and industry on the most favorable terms.

The law which required foreigners to put and continue their inventions on sale in this country, within eighteen months after obtaining their patents, has been repealed, and foreigners, like our citizens, may choose their own time for working their patents.

Another provision of the new law permits a foreigner to patent his invention here at any time, ever after it has been introduced and patented abroad for years, provided it has not been used here for more than two years prior to application for an American patent.

The old law prohibited the grant of a patent for any foreign invention that had been brought into use here, even for a day, prior to application for a patent.

In the same way the new law also throws open to foreigners the right to take out patents for designs, and as this virtually includes all the new figures and pattern for every description of fibrous and textile goods, such as carpets, silks, laces, calicoes, trimmings, etc., the law becomes important to our home manufacturers.

The following is the provision of the new statute in relation to design pattern:

"Any person who, by his own industry, genius, efforts, and expense, has invented or produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief any new and original for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture, to be painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful, and original shape or configuration of any article of manufacture, the same not having been known or used by others before his invention or production thereof, and patented or described in any printed publication, may, upon payment of the duty required by law, and other due proceedings had the same as in cases of inventions or discoveries, obtain a patent therefor."

The Government fee for a design patent is $10 for 3½ years, $15 for 7 years, and $30 for 14 years, with privileges for extension.

Another novel provision of the new law consists in the registration of trade-marks. When a patent has been granted for the article or the pattern, a further security may be obtained in the shape of a patent upon the trade-mark that is placed upon the article or goods. The following is the law for trade-marks:

"Any person or firm domiciled in the United States, and any corporation created by the authority of the United States, or of any state or territory thereof, and any person, firm or corporation resident of or located in any foreign country which by treaty or convention affords similar privileges to citizens of the United States, and who are entitled to the exclusive use of any lawful trade-marks, or who intend to adopt and use any trade-mark for exclusive use within the United States, may obtain protection for such lawful trade-mark, by complying with the following requirements, to wit:"

The Government fee for registration of a trade-mark is $25. Duration 30 years, with privilege of renewal.

One effect of the above new laws will be to put an end to that extensive class of American industries which has grown up and flourished by the manufacture of articles and goods copied from foreign sources. All who undertake such reproductions without consent of the foreign originator, will be liable to be interfered with at any time, by the grant of a patent, and the stoppage of their works.

Another effect of these laws will be to compel our citizens to invent their own designs, and thereby artistic invention on our own soil will perhaps be encouraged.

We have in preparation, to be issued in a few days, a new edition of our widely-known instruction book. It will contain the new patent laws, with full directions for those who wish to avail themselves of its benefits. We shall be happy to forward copies of this book *gratis* to all who will send us their names with the stamps to pay the postage—four cents.

The Mullein Plant.

The *Druggists' Circular* gives the following information in regard to that very common plant, the mullein—*Verbascum thapsus*:—

Mullein is a biennial plant, with a straight, tall, stout, woolly, generally simple stem, occasionally with one or two branches above, winged by the decurrent bases of the leaves, and from three to five feet high. The leaves are alternate, oblong, acute, rough, and densely tomentose on both sides. The flowers are a golden yellow color, rotate; nearly sessile, and are arranged in a dense, spiked, club-shaped receme; calyx five-parted and downy; corolla five-lobed, rotate.

Mullein is common to the United States, growing in recent clearings, along the sides of roads, in slovenly fields, etc., flowering from June to August. Some botanists consider it to have been introduced from Europe. The leaves and flowers are the parts used. They have a faint, rather pleasant odor, resembling that of a mild narcotic, and a somewhat bitterish, albuminous taste, and yield their virtues to boiling water. Mullein is demulcent, diuretic, anodyne, and anti-spasmodic. The infusion is useful in coughs, catarrh, hæmoptysis, diarrhœa, dysentery, and piles. Its diuretic properties are rather weak, yet it is very useful in allaying the acridity of urine which is present in many diseases. It may be boiled in milk, sweetened, and rendered more palatable by the addition of aromatics, for internal use, especially bowel complaints. A fomentation of the leaves also forms an excellent local application for inflamed piles, ulcers, and tumors. The leaves and pith of the stalk form a valuable cataplasm in white swellings, and, infused in hot vinegar or water, it makes an excellent poultice to be applied to the throat in cynache tonsillaris, cynache maligna, and mumps. The seeds, it is said, will pass rapidly through the intestines, and have been successfully used in intestinal obstructions. They are narcotic, and have been used in asthma, infantile convulsions, and to poison fish. The infusion may be drank freely. The flowers, placed in a well-corked bottle, and exposed to the sun, are said to yield an excellent relaxing oil.

Insects as Food.

The Rev. Dr. Nash is publishing in *Zion's Herald* a series of articles on "Insect Life." On the subject of food he says:

"Man does not refuse to use insects as food. Even we, highly civilized as we are, do not reject the lobster, the crab, or the shrimp, which, though not strictly insects, are only articulate animals, and, until recently, were classed with insects by our best entomologists. Now the Arab would be disgusted to see us feeding on lobster salad; yet he finds great delight in masticating a locust. In both the Indies epicures eat the grub of the palm weevil, which is as large as your thumb; and Sir John La Forey concurs in opinion with the ancient Greeks mentioned by Ælian as esteeming a roasted grub very delicious food.

"Pliny tells that the Romans regarded the lossus--probabaly the larva of *Prionus Corarius*, found in the oak—a very great delicacy. In Jamaica, and in the Mauritius, the grub of the *Prionus Damicornus*, which is as large as a man's finger, forms an article of food. The Mexican Indians prepare a drink from a beetle (the *Cicindela curveia*), by macerating in water and spirits.

"Locusts are an article of food in many parts of the world. The Ethiopians were called locust-eaters on this account by the Romans. The Arabs make them into bread, first grinding or pounding them, and then mixing them with their flour. They not unfrequently eat them boiled or stewed. The Hottentots esteem them highly, and grow fat on them. They all make their eggs into soup. Their traditions teach that they are indebted to some great conjurer for the coming of the locust. He lives a long way northward, they say, and removes a huge stone from the mouth of a deep pit, so that the locusts escape and fly to them for food. The Moors of Barbary prefer them to pigeons.

"*Cicadæ*, according to Athenus and Aristotle, were highly relished among the ancient Greeks. Pliny says the Parthians used them freely for food. Our native Indians were fond of them, as were those of New South Wales.

"The Chinese, who cannot afford to waste any edible thing, cook and eat the chrysalis of the silk worm and the larva of the hawk moth. The caterpillars of butterflies are eaten by the natives of New Holland, and also the body of the butterfly called bugong.

"Ants have their places with articles of human diet. Hottentots eat them raw and boiled. East Indians mix them with flour and convert them into popular pastry. In India, ants are used to flavor brandy.

"In Ceylon, bees are used for food. In New Caledonia the people eat a large spider, *Arachnis edulis*, esteeming it a luxury. Reaumer says he knew a young German lady who ate spiders. It is recorded that Anna Maria Schurement ate them like nuts, and declared they were not unlike that fruit in taste. Lalande, the celebrated astronomer, was equally fond of these delicacies; and Rosel knew a German who spread them on his bread like butter. Humboldt caps the clamax of these edible monstrosities, assuring us that he has seen Indian children drag centipedes, eighteen inches long and more than half an inch broad from their holes and devour them.

"While these curious facts illustrate the adge that there is no accounting for tastes, they also show that insects are useful as food for man, and that in great extremities he might be saved from destruction by placing them among his articles of diet. But I have written enough on the uses of insects—enough to show that the Great Architect of nature did not create these curious little animals in such vast numbers without a purpose. Small as they are, and contemptable as they appear their countless numbers and varied powers to do both good and evil, constitute them one of the most important forces in the economy of nature. By merely destroying a few classes of insect-fauna, and thereby permitting the others to multiply indefinitely, the Almighty Ruler could bring about the entire destruction of the human race in a surprisingly brief space of time."

A New Antiperiodic.

Dr. Lorinser, of Vienna, gives in the *Wiener Medizinische Wochenschrift*, for May 14th, the results of a number of observations made regarding the effect of a new remedy for intermittent fever. The remedy is the tincture of the leaves of the *Eucalyptus globulus*, a plant of the natural order *Myrtaceæ*. In 1869, Dr. Lorinser made some experiments, the result of which he published; but he was brought to a standstill by a want of a supply of the medicine. The plant has since been cultivated by Herr Lamatsch, an apothecary; and a sufficient quantity of tincture has been made from the leaves to supply a number of medical men in the districts of the Theiss and Danube, and in the Banat. The records of fifty-three cases of intermittent fever in which the eucalyptus was administered have been communicated to Dr. Lorinser; and he gives very brief outlines of each, with the following summary of the results obtained. Of the fifty-three patients, forty-three were completely cured; in five, there was a relapse in consequence of a failure of the supply of the tincture of eucalyptus, and quinine had to be employed; two of the cases were not true ague; in one case, neither the eucalyptus nor quinine cured; in one, the medicine (as well as other remedies) was vomited; and in one the patient would not allow the treatment to be continued. In eleven of the cases, quinine had been used without effect; and nine of these were cured by the eucalyptus. There was return of the fever in ten cases, at intervals varying from one to four weeks, in five of these quinine had to be used in consequence of their being no tincture of eucalyptus, and in the other five the eucalyptus was successfully employed. The tincture is said to be easily made, and to have a pleasant aromatic taste; it acts favorably on the digestive organs. Dr. Lorinser believes that in it we have a valuable remedy for intermittent fever. It may be so; but, considering the comparative failure of the substances which have hitherto been recommended as substitutes for cinchona and quinine, still more extended and careful observation will be necessary before recognizing the claims of the eucalyptus globulus to rank as an antiperiodic on which dependence can be placed. The districts which Dr. Lorinser has chosen for testing the effect of the remedy are, we believe, well fitted for the purpose--intermittent fever being very prevalent in them.—*Phila. Med. and Surg. Rep.*

The Arsenic Eaters of Styria.

Men of science who traversed Styria have long reported the fact that there were people in Styria who consumed arsenic. However, this statement was denied by others, who affirmed that the white mineral they ate was nothing but chalk.

Prompted by the importance of this subject, the royal medical counsel, Dr. Von Vest, occasioned the issue of a circular to the physicians of Styria, requesting them to communicate their experiences with regard thereto. Seventeen reports were obtained, from which the following is an extract :

The principal seat of the arsenic eaters—according to these—is in the northern and northwestern part; the southern part, however, is free from them. The district of Hartberg, in the former, counts not less than forty individuals who indulge in that habit. From the various sorts of arsenic, the white arsenic, or ratsbane, is mostly taken; less so the commercial yellow, and still less the natural red arsenic, or orpiment. The arsenic eaters begin with a dose the size of a millet, and increase this quantity gradually to the dose the size of a pea, the weight of these quantities being 0,22, 0,56, and 0,62 grains avoirdupois, respectively.

These doses are either taken daily, or every other day, or only once or twice a week. In the district of Hartberg the custom prevails to suspend this unwise usage at the time of the new moon, to commence at the time when she is on her increase with the relative smallest dose, and to increase with it to the time of the full moon. From this period the quantity is diminished, but aloes are taken in increased doses till strong diarrhœa is produced. Directly after the administering of arsenic, most people abstain from drinking, and with regard to aliment some prefer pastry to meat, while others abstain from the taking of fat. However, the majority will take all kinds of food, indulging also considerably in the use of alcoholic beverages. Older persons who have been accustomed to that habit from their boyhood feel a sensation of warmth in their stomach shortly after taking the poison, complaining only of dizziness in the head after excessive use.

The ratsbane eaters belong mostly to the lower classes—wood cleavers, stable grooms, charcoal burners, and wood warts. They fall into that habit at the early age of fifteen, and continue it until the ages of seventy and seventy-six. Although the female sex is not averse to it, the majority belong to the male sex. They are generally strong and healthy persons, courageous, pugnacious, and of strong sexual dispositions. The reason of this habit is very probably attributable to the fact of its apparent favorable action upon horses. If requested to explain the reason of their indulging in it, they will say that it is to make them strong and healthy. —*Phil. Med. and Surg. Reporter.*

Alcoholate of Chloral.

The following abstract is taken from the report of a commission appointed by the Société de Pharmacie of Paris, to inquire into the cause of the differences in the characters presented by the chloral hydrate prepared according to the respective methods of MM. Roussin and Personne.

The preparation obtained by the former of these two chemists is now declared to be a compound not of water, but of alcohol with the anhydrous chloral. It can be prepared with great facility by a method similar to that adopted for the production of the hydrate; that is to say, one molecule of the anhydrous chloral (147½ parts) is added to one molecule of absolute alcohol (46 parts.)

The combination is effected with the disengagement of considerable heat, and the product on cooling solidifies, after a few minutes agitation, to a mass of crystals.

The amount of chlorine in this compound was found by experiment 55.49 and 55.43 per cent.

The formula, C^2HCl^3O,C^2H^6O, requires 55.0, whilst that of the hydrate, C_2HCl_3O, H^2O, requires 64.3 per cent. On distilling the hydrate with water and caustic potash, a distillate was obtained, which, after removal of the whole of the chloroform produced, was found to consist solely of pure water; whilst the alcoholate yielded a liquid in the receiver which, after separation of the last traces of chloroform, yielded a proportion of alcohol corresponding very nearly with the amount, 23.7 per cent, indicated by theory as resulting from the decomposition of the body already formulated; C^2HCl^3O, C^2H^6O+K HO, yielding

C_2HCl_3	+	$KCHO_2$	+	C^2H^6O
Chloroform.		Formate of Potash.		Alcohol.

The alcoholate melts at a temperature a little above the fusion point of the hydrate. Between the boiling points there is a greater interval; the hydrate boiling at about 97° C., the alcoholate at about 113.5°; and whilst the density of the hydrate is 1.57, that of the alcoholate is 1.34.

Add to these characters the differences observable in crystalline structure—the hydrate deliquescent and having somewhat the aspect of loaf-sugar; the alcoholate consisting of much larger and translucent crystals, which do not abstract moisture—and it will be easy to distinguish these two bodies from each other.

It is worthy of observation, that whilst the hydrate contains 88.8 per cent. of chloral, the alcoholate contains only 76.3 per cent., and is, therefore, probably less active than the hydrate—*Pharm. Jour. London.*

Use of Sarsaparilla in Syphilis.

Dr. T. Clifford Allbutt states (*Practitioner*, May 1870) that the antisyphilitic effects of sarsaparilla depend upon the dose in which it is given, and that given in adequate doses it is one of our best remedies. It has been used in the Leeds Infirmary for at least a quarter of a century, in the form of decoction, and it is made there in large quantities. "Of this decoction, which differs only in unimportant details from the compound decoction of the Pharmacopœia, we administer from four to ten ounces three times a day, or prescribe some such quantity as a pint or a pint and a half to be taken at will during the twenty-four hours. This medication is expensive, no doubt, but that treatment is the cheapest which most quickly cures the patient. The cases in which sarsaparilla is most useful are cases in which the system is thoroughly infected with syphilis, during the tertiary and visceral modes of its appearance.

"In persons who are in a thoroughly cachectic state, who have lost flesh and strength and who are suffering from sluggish ulcerations and indolent gummata, the sarsaparilla is really of very great value. I believe there is scarcely a practitioner among my readers who will not rejoice to hear of a remedy which will help him to cleanse and to re-establish old syphilitic patients—patients whose constitutions have been undermined by want of nourishment or by excesses, who have gone through many courses of mercury, whose irritable mucous membranes will not bear any more iodide of potassium, and who are so sallow, so worn, so broken down, so eaten up by disease, as to seem fit only for the grave. These persons clear up on such quantities of sarsaparilla as I have named, and it is here that the drug fills so important a gap. It need not, and it will not, supersede mercury and iodide of potassium in straightforward cases, but it has its place where these means have failed, or where they are on some grounds to be avoided. How far we are right in claiming this important place for sarsaparilla can only be known after an extended use of the drug according to our method by the profession at large.

Action of Sulphureted Hydrogen on the System.

Max Schaffner has recently made some observations on the action of sulphureted hydrogen that are worthy of publication, as the facts are not generally known.

When a workman remains for days or weeks in an atmosphere containing a very small quantity of sulphureted hydrogen, the symptoms are loss of appetite and headache. The sudden respiration of a large quantity of the gas produces immediate insensibility, as if the person had been shot by a bullet, all the muscles become rigid and motionless, the eyes are staring, and the lungs give out a rustling sound. Brought into the open air, and the head washed with cold water, the patient revives in a few minutes, and complains of lassitude, but not of any pain. Too long delay in such an atmosphere would be certain death, and probably a painless one. In one instance a workman who had been rendered insensible by the gas, on his recovery had his combativeness so much aroused that he attacked the bystanders, and was with difficulty kept in bounds. The action of the gas upon the eyes is to inflame them; they become red and swollen, and finally closed, with severe pain. As a remedy, a wash composed of one-third of a grain of corrosive sublimate in three ounces of water, was applied.

A mixture of air and sulphureted hydrogen is remarkably explosive. A wire heated red hot and allowed to cool until its color is dark, is sufficiently hot to occasion the explosion of the mixture. The presence of a small quantity of water vapor will prevent the ignition of the gases. Great care should be observed in factories where sulphureted hydrogen is likely to be produced, as its action is subtile, and liable to occasion unexpected explosions as well as loss of life from its poisonous effects upon the system.—*Scientific American.*

The Origin of the Word Avoirdupois.

It is generally accepted that this term is derived from the French, *avoir-du-poids* (to have weight), and the French also write it in this manner; but no clue is given by this explanation to the origin of the word, as applied to a class of weights.

We find this term for the first time in the fourteenth century, in an act of Edward III. (statute I.,) where it is written "averdeboiz" and "haberdepois." At first, a certain class of goods was understood thereby; then the weight used for them; and, finally, the ordinary weight of commerce. In another act of Edward III. we read, for instance, "Wool and all kinds of avoirdupois" (that is, avoirdupois goods). To these avoirdupois-wares belonged wine and corn. "Averdupois" is met with in more recent times, but all the older forms seem to point to the fact that it originated from the English "average," which meant proportionality, equipoise (formerly poize, and in the old French, *poise*,) signifying weight, equilibrium, or balance. To poise (formerly to poize) meant figuratively "to weigh."

The saying, for instance, still prevails, "The weight of a hair will turn the scales between their avoirdupois." Averdupois or avoirdupois may have been synonymous with average poise, signifying common weight; avoirdupois-goods were synonymous with ordinary goods. This derivation seems to be the most natural one; and it is confirmed by the acceptation of the English commission of weights and measures, according to which avoirdupois consists of a corruption of the barbaric Latin word *areria*, which means coarse or common goods, and the French word *poids* (weight). The word Troy, for the other kind of weight, is derived from Troja Nova (New Troy), a name which was given to London by the monk-authors of the middle ages, whose belief it was that this city had been founded by Trojan exiles Trojan or troy-weight is, therefore, synonymous with London weight.—*Manufacturer and Builder.*

Death from Strychnia by Prescription.

In the *American Journal of Pharmacy* for July, Charles Bullock reports a case of death consequent on the last dose of the following prescription, the vial being drained by it:

R. Strychniæ muriat., gr. iss.
Liq. ferri iodid., dr. vj.
Syr. Zingiberis, q. s. ut ft. fl. oz. iij.
M. Sig.—Dose, a tea-spoonful.

The patient had partial paralysis, and after using the portion prescribed, had it renewed, increasing the dose by half a tea-spoonful. An hour after draining the vial he was seized with tonic spasms, which were relieved by the proper remedies, but the prostration was so great as to cause death in a few hours afterward. A jury of experts pronounced the death due to strychnia; and finding that the pharmaceutist had simply mixed the ingredients and stirred them with a spatula, they censured for improper manipulation. They also censured the physician indirectly, by finding that the ingredients of the prescription are subject to such chemical changes as render the strychnia liable to be precipitated, and thus an overdose of strychnia may be given unless the vial be shaken. It appears that an iodide of strychnia, almost insoluble, is likely to be precipitated from the solution in question, and that it possesses the qualities of strychnia, notwithstanding the well-known fact that iodine is, to a certain extent, an antidote for strychnia. Mr. Bullock concludes his comments with the well-judged caution to prescribers, that when strychnia is to be administered in full doses, it is best to give it uncombined.—*Pacific Medical and Surgical Journal.*

Ferrated Wine of Wild Cherry.

R. Cortex prun. Virg. contus..... 12 oz.
Amygdalæ dulc..................... 2 "
Ferri oxid. hydrat................ ½ "
Sacch. alba....................... 12 "
Ferri. citratis, Alcoholis, Aqua font — of each sufficient.

First exhaust the bark of its tonic principles with the alcoholic menstruum, and evaporate the resulting alcoholic tincture carefully, to expel the alcohol. and then mix the residue with six ounces of water, and add the hydrated sesquioxide of iron; allow it to macerate for six hours, occasionally agitating, and filter into a bottle containing an emulsion of the almonds (amygd. dulcis two ounces, aqua pura six ounces). When the reaction has ceased between the emulsion and amygdalin, it is again filtered and the sugar added, and for every ounce thus to be prepared add 24 grains of citrate of iron, previously dissolved in water sufficient to make the whole fluid extract measure twenty-four fluid ounces. The addition of iron to the bitter principle and hydrocyanic acid of the simple extract of wild cherry, we think should render it much more efficient as a tonic, and greatly add to the value of the preparation.—*Druggists' Cir.*

Iodine from Chili Saltpeter.

Professor Wagner, in his reports, says that the manufacture of iodine from Chili saltpeter already amounts to 30,000 lbs. per annum. The method invented by Thiercelin for its reclaimation from the crude material is as follows: The mother liquors resulting from the manufacture of saltpeter are treated with a mixture of sulphurous acid and sulphite of soda, in proper proportion, and the iodine will be precipitated as a black powder. The precipitated iodine is put into earthen jars on the bottom of which are layers of quartz sand, fine at the top, and coarse at the bottom; from this it is removed by earthen spoons into boxes lined with gypsum, and a greater part of the water thus removed. It is sometimes sold in this impure state or further purified by sublimation.—*Scientific American.*

On the Action of Sugar on Cinchona Barks.

In the *Union Pharmaceutique* an article occurs which draws attention to a proposed modification in the method of preparing quinine into wine. In a note on *the action of sugar in the preparation of cinchona bark*, M. F. Defresne confined himself to proving the easy solubility of cinchona red in saccharine fluids. The present article sets forth the interest which would be attached to a study of the solvent action of sugar on the compounds of alkaloids. It is proposed that quinine wine be prepared by the simple maceration of powdered cinchona in a dilute syrup, and subsequent filtration. With rapidity of execution this process unites the advantage of avoiding the addition of alcohol to the wine. The quantity of sugar may be so small as to be unnoticed; the bitterness is equal to that of ordinary quinine wine. A sample exposed for fifteen days experienced no alteration. The comparative analysis of samples of wine prepared by each process furnished sufficiently accordent results.—*Chemists and Druggist.*

On a Variety of Dextrine Insoluble in Water.

Musculus describes, in the *Journal de Pharmacie et de Chimie*, a variety of dextrine insoluble in water. He had prepared this substance by heating starch grains with glacial acetic acid, the product retaining the organization of the starch grains from which it was obtained, although chemically altered. This insoluble variety may be rendered soluble by heating ten or twelve hours to 212° Fahr. By evaporation, a yellow powder analogous to ordinary dextrine is obtained. By stopping the evaporation when a syrupy consistence has been obtained, and allowing the concentrated solution to strain for some days, an insoluble matter is deposited, which may be washed with several quantities of water, and which consist of insoluble dextrine, having however, lost the structure of the starch grains, examination indicating nothing more than an amorphous powder.—*Chemist and Druggist.*

On the Prevention of Mouldiness in Solutions of Tartaric Acid.

Mr. W. H. Wood has made experiments with the view of discovering a method of preventing the mouldiness which occurs in aqueous solutions of tartaric acid, shortly after their preparation; he communicates a preliminary note on the subject to the *Chemical News*. The author found that a single drop of creosote effected the preservation of an ounce solution of one part acid and two parts water. In Bowman's "Practical Chemistry" a similar method is mentioned, where it is stated that the mouldiness "may be prevented by adding a very minute quantity of carbolic acid. . . . ." Mr. Wood further discovered, that if a solution of tartaric acid in water, whether mouldy or not, be filtered, and then boiled for a short time (say ten minutes) it will not afterwards become mouldy, whether corked or stoppered up in a bottle, or left exposed to the air. Further experiments are promised.—*Chemist and Druggist.*

Production of Sulphate of Sodium from Gypsum.

H. Remoch describes a method by which he has succeeded in preparing sulphate of soda from gypsum. He mixes two parts of sulphate of lime or gypsum with one part of carbonate of ammonia; on pouring water over this mixture, complete decomposition of the gypsum ensues, sulphate of ammonia and carbonate of lime being formed. The sulphate of ammonia is, in its turn, decomposed by means of common salt, the result being the formation of sulphate of soda and chloride of ammonium, the latter salt being reconverted into carbonate of ammonia by treatment with chalk.

Improved Formula for Chalk Mixture.

To obviate unpleasant and dangerous souring of chalk mixture as commonly prepared, glycerine may be substituted for the sugar, according to the following formula:—R. Cretæ Preparat, Glycerini āā ℥ ss.; Pulv. G. Acaciæ, ℨ ij.; Aquæ. Cinnam., Aquæ, āā ℥ iv. Rub well together until thoroughly mixed. This mixture will keep during a whole summer. The glycerine exerts positively a soothing effect upon the bowels, as well as in some degree arresting fermentation.—*Boston Journal of Chemistry.*

Peruvian Bismuth.

The increasing price of bismuth which has heretofore been almost exclusively obtained in Saxony has caused search to be made for this metal in other countries, which has resulted in bringing Peruvian bismuth into the market. According to Berth it contains:

Bismuth	93.36
Antimony with a little tin	4 57
Copper with a little iron	2.06

This metal is superior to the Saxon, as it contains no arsenic or sulphur.—*Journal of App. Chemistry.*

Purification of Chloral Hydrate.

Prof. F. A. Fluckiger states that much of the commercial chloral hydrate is impure, and unfit for use until purified. It is usually met with in irrgular masses containing moisture, and having a sharp, pungent odor, indicating partial decomposition. The salt may be readily purified by dissolving it in *pure* bisulphide of carbon (soluble in forty-five parts of the menstruum at 18° C.) and allowing the salt to re-crystallize by the spontaneous evaporation of the solvent. The product appears in colorless prismatic crystals, not hygroscopic, and free from acid reaction.—*Pharm. Cent. Halle in Pharmacist.*

Extract of Calabar Bean.

J. B. Enz recommends the following process for preparing this extract: Reduce the bean to a moderately fine powder, and macerate in alcohol, sp. gr. 830, for ten days; then transfer the powder to a percolator and pass through alcohol until the percolate becomes colorless. Mix the tincture obtained by maceration with the percolate, distil off the alcohol, and evaporate the residue, over a water bath, to the proper consistence. The yield of extract is about two per cent.—*Pharm. Cent. Halle in Pharmacist.*

New Use for Hyposulphite of Soda.—It is said that experiments made with this salt have proved it to be very superior for washing linen to the carbonate of soda now in use; it has no corrosive action, and does not cause a yellow coloring of the fabrics after some time. Borax, largely used in the Netherlands and Belgium, is a better substitute still, and, by its use, white fabrics assume an agreeable bluish hue, which, in many instances, renders the subsequent use of washing blue unnecessary.

Miscellaneous, &c.

The Bullet-cure for Ileus.

The old remedy for colic, of a bullet or quicksilver taken into the stomach, has been revived, in a modified form, by Dr. Maydieu, of Argent, France. In the *Journal de Med. Pratique*, Dr. M. declares that, after seventeen years of the ordinary treatment, in which he always failed, he has been invariably successful in the twelve cases which he has treated with *shot*. He mixes No. 5 shot, after careful washing, with olive oil sufficient to cover them, and gives a desertspoonful every half hour. In five or six hours the vomiting ceases, gases are expelled, and the bowels are moved. Warm baths, fomentations, and injections of milk and honey are always superadded. *Apropos* of this treatment, we take the liberty of telling a little anecdote. Some forty years ago a travelling preacher in England was taken sick with colic, in the house of a good old lady where he was spending the night. The good lady brought a bullet, which, after warming, she induced him to swallow. He was soon relieved from pain, and then began to reflect on the course of the bullet, and at least suggested to his nurse a doubt whether a body so heavy could find its way through the intestinal labyrinth, fearing that it would lodge there permanently. "You need not be the least afraid," said the lady cheeringly, "for that very bullet has gone through me at least twenty times!"—*Pacific Med. and Surg. Journal.*

Adulteration of Catechu.

J. Tissandier.—It is a well-known fact that catechu is too often adulterated; and the sophisticated substance has often injuriously affected various operations wherein it is employed, especially dyeing and calico-printing. According to this author, genuine catechu, when exhausted by means of ether, loses 53 per cent. of weight, leaving, after drying, 47 per cent. of residue. A mixture of catechu and alum gives a white precipitate with nitric acid and with chloride of barium.

Antidote to Carbolic Acid.

Sweet oil or castor oil swallowed in large quantities is recommended as the most efficient antidote to carbolic acid, when it has been taken in poisonous doses.

Trade Report.

The past month has been one of considerable activity with wholesale houses. Orders have been numerous, and business has been well sustained throughout.

A reference to our prices current shows a considerable advance in regard to some classes of goods; while others, owing to increased demand, are scarcely obtainable. This is the case with quinine; the manufacturers having to refuse numbers of large orders. We omit, altogether, quotations for this article. Bismuth and its preparations are higher. Opium has, as usual, been fluctuating, and at present is steadily advancing. Owing to the war in Europe, the price of Bromide Potassium is much higher. Solazzi licorice, at date of last advices from London was quite out of market. Gentian is held at advanced rates, and cardamoms have gone up to an extreme figure.

Antim. tart, balsam cobaiba, and tolu, cort. sassafras, oil wintergreen, cod liver oil, castor oil, sal. Epsom, and leptandrin are all quoted lower.

The demand for dyestuffs has been very large, and prices, with the exception of best Dutch madder, which is slightly lower, remain at former figures.

Oils have not been in such active demand, and prices are a little easier. Cod, and pale and straw seals are lower; genuine sperm is held at $2.15 to $2.25.

Paints, as last month, with the exception of genuine lead, in oil, which has fallen to $2.30.

WHOLESALE PRICES CURRENT.—SEPTEMBER, 1870.

Drugs, Medicines, &c.	$ c.	$ c.
Acid, Acetic, fort	0 12 @	0 11
" Benzoic, pure	0 25	0 35
" Citric	0 75	0 85
" Muriatic	0 05	0 07
" Nitric	0 11½	0 15
" Oxalic do	0 24	0 30
" Sulphuric	0 03¾	0 07
" Tartaric, pulv.	0 39	0 45
Ammon., carb. casks	0 18½	0 19
" " jars	0 18½	0 20
" Liquor, 880	0 18	0 25
" Muriate	0 12½	0 15
" Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
" Nitrous	0 27	0 30
" Sulphuric	0 42	0 50
Antim. Crude, pulv	0 14	0 15
" Tart. "	0 46	0 55
Alcohol, 95%	1 77½	1 87½
Arrowroot, Jamaica	0 25	0 22
" Bermuda	0 45	0 65
Alum	0 02½	0 03½
Balsam, Canada	0 24	0 30
" Copaiba	0 75	0 80
" Peru	3 80	4 00
" Tolu	1 10	1 30
Bark, Bayberry, pulv	0 20	0 25
" Canella, "	0 17	0 20
" Peruvian, yel. pulv	0 42	0 45
" " red "	1 50	1 60
" Slippery Elm, g. b.	0 18	0 20
" " flour, pkt's	0 28	0 32
" Sassafras	0 12	0 15
Berries, Cubebs, ground	0 25	0 35
" Juniper	0 05	0 06
Beans, Tonquin	0 60	1 10
" Vanilla	14 00	15 50
Bismuth, Alb.	4 80	5 00
" Carb.	4 80	5 00
Camphor, Crude	0 35	0 45
" Refined	0 45	0 55
Cantharides	1 50	1 60
" Powdered	1 55	1 65
Charcoal, Animal	0 04	0 06
" Wood, pow'd	0 12	0 15
Chiretta	0 25	0 30
Chloroform	1 25	1 50
Cochineal, S. G	0 85	1 00
" Black	1 30	1 75
Colocynth, Pulv.	0 80	0 95
Collodion	0 67	0 70
Elaterium ...oz.	4 50	5 00
Ergot	0 70	0 80
Extract, Belladonna	2 00	2 20
" Colocynth, Co.	1 25	1 75
" Gentian	0 50	0 60
" Hemlock, Ang.	1 12	1 25
" Henbane, "	3 75	4 00
" Jalap	5 00	5 50
" Mandrake	1 75	2 00
" Nux Vomic...oz	0 60	0 70
" Opium ... "	Variable.	
" Rhubarb	7 50	—
" Sarsap. Hon. Co	1 00	1 20
" " Jam. Co	3 25	3 70
" Taraxicum, Ang	0 70	0 80
Flowers, Arnica	0 25	0 35
" Chamomile	0 30	0 40
Gum, Aloes, Barb. extra	0 70	0 80
" " " good	0 42	0 50
" " Cape	0 15	0 20
" " " pow'd	0 25	0 30
" " Socot.	0 50	0 75
" " " pulv.	0 90	1 00
" Arabic, white	0 60	0 65
" " " pow'd	0 57	0 65
" " sorts	0 34	0 37
" " " pow'd	0 50	0 60
" " com. Gedda	0 13	0 16
" Assafœtida	0 31	0 35
" British or Dextrine	0 13	0 15
" Benzoin	0 48	0 55
" Catechu	0 15	0 20
" " pow'd	0 25	0 30
" Euphorb, pulv	0 32	0 40
" Gamboge	1 40	1 60
" Guaiacum	0 32	0 50
" Myrrh	0 48	0 60
" Sang Dracon	0 60	0 70
" Scammony, pow'd	5 60	—
" " Virg. "	14 50	—
" Shellac, Orange.	26	0 38

Drugs, Medicines, &c. *Continued.*	$ c.	$ c.
Gum, Shellac, liver	0 30 @	0 35
" Storax	0 65	0 75
" Tragacanth, flake	0 80	0 90
" " common	0 35	0 40
Galls	0 32	0 37
Gelatine, Cox's, 6d.	1 10	1 20
Glycerine, com.	0 28	0 30
" Vienna	0 30	0 40
" Price's	0 65	0 75
Honey, Canada, best	0 17	0 20
" Lower Canada	0 15	0 18
Iron, Carb. Precip.	0 20	0 25
" " Sacchar	0 40	0 45
" Citrate Ammon	0 90	1 00
" " & Quinine oz.	0 43	0 48
" " & Strychnine "	0 17	0 25
" Sulphate, pure	0 08	0 10
Iodine, good	4 50	5 00
" Resublimed	5 60	6 00
Jalapin ...oz.	1 40	1 60
Kreosote	1 60	1 70
Leaves, Buchu	0 25	0 30
" Foxglove	0 25	0 30
" Henbane	0 35	0 40
" Senna, Alex	0 30	0 60
" " E. I.	0 12½	0 20
" " Tinnevilly	0 20	0 30
" Uva Ursi	0 15	0 20
Lime, Carbolate ...brl.	5 50	—
" Chloride	0 04½	0 06
" Sulphate,	0 08	0 12½
Lint, Taylor's best	1 20	1 25
Lead, Acetate	0 14	0 17
Leptandrin ...oz.	1 00	—
Liq. Bismuthi	0 50	0 75
" Opii, Battley's	6 60	8 00
Lye, Concentrated	1 50	2 00
Liquorice, Solazzi	0 42	0 45
" Cassano	0 23	0 30
" Other brands	0 14	0 25
Liquorice, Refined	0 35 @	0 45
" " Hessin's doz	2 00	
Magnesia, Carb ...1 oz.	0 20	0 25
" " ...4 "	0 17	0 20
" Calcined	0 65	0 75
" Citrate...gran.	0 37	0 50
Mercury	0 65	0 75
" Bichlor	0 70	0 80
" Biniodid...oz.	0 25	0 35
" Chloride	0 90	1 00
" C. Chalk	0 45	0 60
" Nit. Oxyd	0 90	1 00
Morphia, Acet	6 00	—
" Mur	6 00	7 00
" Sulph.	6 20	—
Musk, Pure gram...oz.	21 00	—
" Canton	1 00	1 20
Oil, Almonds, sweet	0 43	0 55
" " bitter	14 00	15 00
" Aniseed	3 60	4 50
" Bergamot, super.	5 70	6 50
" Carraway	4 00	4 20
" Cassia	2 50	3 00
" Castor, E. I.	0 14½	0 16
" " Crystal	0 22	0 25
" " Italian	0 26	0 28
" Citronella	1 60	1 85
" Cloves, Ang.	1 00	1 10
" Cod Liver	1 40	1 50
" Croton	1 70	2 00
" Geranium, pure, oz.	2 00	2 20
" Juniper Wood	0 80	1 00
" " Berries	6 00	7 00
" Lavand, Ang	19 20	20 00
" " Exot	1 40	1 60
" Lemon, super.	3 30	3 60
" " ord.	2 60	2 80
" Orange	3 00	3 20
" Origanum	0 65	0 75
" Peppermint, Ang.	15 00	17 00
" " Amer.	4 00	4 20
" Rose, virgin	7 75	8 00
" " good	4 40	5 50
" Sassafras	0 85	0 95
" Wintergreen	6 00	6 50
" Wormwood, pure	5 80	50
Ointment, blue	0 65	0 70
Opium, Turkey,	9 50	10 50
" " pulv	11 40	12 00
Orange Peel, opt.	0 43	0 50
" " good	0 12½	0 20
Pill, Blue, Mass	0 70	0 75

Drugs, Medicines, &c. *Continued.*	$ c.	$ c.
Potash, Bi-chrom	0 15 @	0 20
" Bi-tart.	0 25	0 28
" Carbonate	0 16	0 20
" Chlorate	0 40	0 45
" Nitrate	8 50	9 00
Potassium, Bromide	1 80	1 90
" Cyanide	0 65	0 75
" Iodide	3 80	4 50
" Sulphuret	0 25	0 35
Pepsin, Boudault's... oz.	1 25	1 50
" Houghton's, doz	8 00	9 00
" Morson's. ....oz.	0 85	1 10
Phosphorus	0 75	0 85
Podophyllin	0 50	0 60
Quinine, Pelletier's	0 00	—
" Howard's	0 00	0 00
" " 100oz. case	0 00	—
" " 25 oz. tin	0 00	—
Root, Colomba	0 14	0 20
" Curcuma, grd	0 12½	0 17
" Dandelion,	0 25	0 35
" Elecampane	0 14	0 17
" Gentian	0 10	0 12½
" " pulv.	0 15	0 20
" Hellebore, pulv	0 17	0 25
" Ipecaac "	2 40	2 60
" Jalap, Vera Cruz	1 55	2 —
" " Tampico	0 90	1 —
" Liquorice, select	0 13	0 17
" " pow'd	0 15	0 20
" Mandrake, "	0 20	0 25
" Orris "	0 20	0 25
" Rhubarb, Turky	4 40	5 50
" " E. I., China.	1 25	2 00
" " " pulv.	1 40	2 50
" " " " 2nd	1 30	1 50
" " French	0 75	—
" Sarsap., Hond	0 45	0 50
" " Jam.	0 75	0 80
" Squills	0 10	0 15½
" Senega	0 97	1 00
" Spigelia	0 35	0 40
Sal., Epsom	2 50	3 00
" Rochelle	0 28	0 35
" Soda	0 01¾	0 03
Seed, Anise	0 16	0 30
" Canary	0 05	0 06
" Cardamon	4 10	5 75
" Fenugreek, gr'd	0 10	0 15
" Hemp	0 05½	0 05½
" Mustard, white	0 14	0 16
Saffron, Amer.	3 00	3 50
" Spanish	15 00	16 00
Santonine	10 50	12 00
Sago	0 07½	0 09
Silver, Nitrate, cash	14 50	16 50
Soap, Castile, mottled	0 11½	0 14
Soda Ash	0 03	0 04
" Bicarb. Newcastle.	3 75	4 00
" " Howard's.	0 14	0 16
" Caustic	0 04	0 05
Spirits Ammon., arom	0 25	0 35
Strychnine, Crystals	2 30	2 75
Sulphur, Precip.	0 10	0 12½
" Sublimed	0 4	0 05
" Roll	0 03	0 04½
Tamarinds	0 15	0 20
Tapioca	0 15	0 18
Veratria ...oz.	0 25	0 30
Vinegar, Wine, pure	0 55	0 60
Verdigris,	0 35	0 40
" Pow'd	0 45	0 50
Wax, White, pure	0 90	0 95
Zinc, Chloride ...oz.	0 20	0 25
" Sulphate, pure.	0 10	0 15
" " com.	0 06	0 10
Dyestuffs.		
Annatto	0 40 @	0 60
Analine, Magenta, cryst	5 50	—
" " liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitriol, pure	0 08	0 10
Camwood, pure	0 06¾	0 09
Copperas, green	0 01½	0 02½
Cudbear	0 16	0 25
Fustic, Cuban	0 02½	0 04
Indigo, Bengal	2 40	2 50
" Madras	1 05	1 20
" Extract	0 28	0 35
Japonica	0 05½	0 06½
Lacdye, pow'd	0 35	0 40
Logwood	0 02	0 03

Dyestuffs—*Continued*	$ c.	$ c.
Logwood, Camp	0 02 @	02½
" Extract	0 10½	0 14
" " 1lb bxs	0 14	—
" " ½lb "	0 15	—
Madder, best Dutch	0 15	0 18
" 2nd quality	0 14½	0 16
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
Spices.		
Allspice	0 08½ @	0 10
Cassia	0 42	0 50
Cloves	0 12½	0 15
Cayenne	0 18	0 25
Ginger, E. I.	0 12	0 14
" Jam	0 25	0 30
Mace	1 35	1 40
Mustard, com	0 20	0 25
" D. S.	0 40	0 45
Nutmegs	0 70	0 75
Pepper, Black	0 14	0 15
" White	0 20	0 22
Paints, Dry.		
Black, Lamp, com	0 07 @	0 08
" " 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
" Red	0 05½	0 10
Green, Brunswick	0 07	0 10
" Chrome	0 20	0 25
" Paris	0 30	0 35
" Magnesia	0 20	0 25
Litharge	0 08	0 09
Pink, Rose	0 12½	0 15
Red Lead	0 06½	0 08
" Venetian	0 02½	0 03½
Sienna, B. & G.	0 10	0 15
Umber, "	0 07	0 10
Vermillion, English	0 95	1 00
" American	0 25	0 35
Whiting	0 85	1 25
White Lead, dry, gen.	0 07½	0 09
" " " No. 1.	0 06½	0 08
" " " No. 2.	0 05½	0 07
Yellow Chrome	0 12½	0 35
" Ochre	0 02½	0 03½
Zinc White, Star	0 10	0 12
Colors, in Oil.		
Blue Paint	0 12 @	0 15
Fire Proof Paint	0 06	0 08
Green, Paris	0 32	0 37½
Red, Venetian	0 07	0 10
Patent Dryers, 1lb tins.	0 14½	0 16
Putty	0 03¾	0 04½
Yellow Ochre	0 08	0 12
White Lead, gen. 25lb tins	2 30	—
" " No. 1 "	2 10	—
" " No. 2 "	1 90	—
" " No. 3 "	1 65	—
" " Com. "	1 30	—
White Zinc, Snow	2 75	3 25
Naval Stores.		
Black Pitch	4 50 @	5 50
Rosin, Strained	3 75	4 50
" Clear, pale	5 75	10 00
Spirits Turpentine	0 52	0 60
Tar Wood	3 40	4 00
Oils.		
Cod	0 65 @	0 70
Lard, extra	1 45	—
" No. 1	1 12½	—
" No. 2	1 00	—
Linseed, Raw	0 77½	0 80
" Boiled	0 82½	0 85
Olive, Common	1 30	1 35
" Salad	1 80	2 30
" " Pints, cases	4 20	4 40
" " Quarts	3 60	3 00
Seal Oil, Pale	0 77½	0 80
" " Straw	0 72½	0 75
Sesame Salad	1 30	1 35
Sperm, genuine		
Whale, refined		