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CANADIAN

# PHARMACEUTICAL JOURNAL

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## Original and Selected Papers.

### PHARMACEUTICAL NOTES.

BY E. B. SHUTTLEWORTH.

YIELD OF EXTRACT FROM HYOSCYAMUS OF CANADIAN GROWTH.

The hyoscyamus plant is not indigenous to Canada, or, indeed, to any part of this continent, it may, however, be frequently found in the vicinity of our cities and towns, whither it has probably found its way from Europe. It appears to be an attendant on civilization, but is still of a somewhat lonely habit, choosing those places, which, once the scene of activity, are now secluded and desolate. By the deserted roadside; in waste and unfrequented places, or near old ruins it flourishes in the greatest luxuriance. It is stated in the *London Pharmacopœia* that the plant which thus grows spontaneously amongst old rubbish, and on the highway, is to be preferred to that cultivated in gardens.

The naturalized hyoscyamus appears to be of the biennial variety, and flowers about the middle of June. In England it arrives at maturity somewhat earlier in the season, the time of flowering being stated as occurring during May or June.

In the early part of the past summer a considerable quantity was observed to be growing on some waste ground surrounding an old building near this city. After a few hours search, a couple of

boys succeeding in collecting 225 pounds of the flowering herb. It was determined to treat this for extract in the manner indicated by the *British Pharmacopœia.* The entire plant was well bruised by being passed through a cider mill. The juice was then thoroughly extracted by a powerful press and heated to 130° F. to separate the green coloring matter, which was reserved. The residue was heated to 200° F. to coagulate albumen, again filtered, and the clear liquor evaporated by a gentle heat until of a syrupy consistence. The reserved coloring matter was now added and the whole brought down to the form of a pilular extract. The product weighed 7½ pounds, which is equal to 3.33 per cent of the fresh herb. The appearance of the extract was similar to that of the best samples of English manufacture, but the odor was slightly different, and rather more fœtid.

In comparing this result with that obtained by English operators the yield of extract is found to be stated as considerably higher. Brande* gives the product as ranging between 4 to 5 pounds from 112 lbs. of the fresh herb. Squire† tabulates the result of actual experiment as follows:

| | Weight. lb. | Yield of Extract. lb. oz. |
|---|---|---|
| Leaves, fine summits of stalks) Flowers and seed vessels. .....) | 70 | 4 10 |
| Stalks..... ..... ..... | 35 | 15 |
| Waste leaves, dirt, &c..... | 3½ | — |
| Loss of weight from evaporation. | 3½ | — |
| | 112 | 5 9 |

Of the medicinal value of the Canadian extract the writer has had no opportunity of judging, nor was any estimation made of its alkaloidal strength.

### FLD. EXT. LOBELIA IN FURUNCLE.

Although the application of local remedies for the purpose of preventing or dispersing incipient boils may not be in accordance with sound theory, it is often desirable to cut the career of such troublesome and painful affections as short as possible. An employee in the establishment with which the writer is connected was

*Dictionary of Materia Medica and Pharmacy, p. 312.

†Pharmaceutical Transactions, p. 197.

a veritable furuncular martyr, equalling Job in suffering, but unlike that worthy was sadly deficient in the matter of patience. Having undergone several unsuccessful courses of internal medication, however judicious I will not say, but, at all events, including the celebrated remedy so popular with the late Mr. Sqeers of Dotheboys Hall—the patient at last applied to me. Knowing that tincture of lobelia had been recommended for the dispersion of felons and whitlows, and as some of the fluid extract was just being bottled I told him to apply a little of it to two very promising abscesses which were in process of establishment on his neck. The application was made and repeated several times during the day, with the effect of driving away the boils; nor did they again make their appearance. During the two years that have elapsed since this incident I have had numerous opportunities of trying this remedy, and except in the more advanced stages of furuncle, with invariable success. It might be that lobelia could be employed with advantage for some of the purposes for which iodine is now employed, thereby avoiding the unsightly discolorations of the skin caused by the latter substance.

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## GUN COTTON AND ITS PREPARATIONS.*

BY CHARLES H. MITCHELL.

From an Inaugural Essay by the Author.

A number of experiments were tried, with a view of ascertaining the relative proportions of cotton and acids, together with the proper time for maceration necessary to produce a cotton which should combine the largest yield with the highest explosive power and solubility. The following formula was at length adopted:

| | |
|---|---|
| Raw Cotton | 2 parts. |
| Carbonate Potassa | 1 " |
| Distilled Water | 100 " |

Boil for several hours, adding water to keep up the measure; then wash until free from any alkali, and dry. Then take of:

| | |
|---|---|
| Purified Cotton | 7 oz. av. |
| Nitrous Acid,† s. g. 1·42 | 4 pts. |
| Sulphuric Acid, " 1·84 | 4 " |

*From the American Journal of Pharmacy, June 1872.

†Nitric, saturated with nitrous acid.—ED. AMER. JOUR. PHARM.

Mix the acids in a stone jar capable of holding 2 gals., and when cooled to about 80° Fahr., immerse the cotton in small portions at a time; cover the jar and allow to stand 4 days in a moderately cool place (temp., 50° to 70° Fahr.). Then wash the cotton in small portions, in hot water, to remove the principal part of the acid; pack in a conical glass percolator, and pour on distilled water until the washings are not affected by sol. chloride barium.; drain and dry. Yield, 11 oz. av.

This cotton is perfectly white, of a harsh, gritty fibre, very explosive, leaving scarcely any ash, soluble in ether, ether fortior, acetic ether, glacial acetic acid, and in mixture of alcohol and ether, varying from 1 part ether to 3 parts alcohol to pure ether itself. If a cotton superior to this is desired, it may be obtained by treating this cotton with an additional proportion of the mixed acids, washing and dry as before. The cotton gains about one per ct. in weight, becomes perfectly soluble, and is so free from any ash as to scarcely scorch a sheet of white paper it may be burnt on. Both this and the previous gun cotton may be ignited on gunpowder without exploding it. The advantages claimed for this cotton over that of the U. S. P. are that it is perfectly soluble, very explosive, cheap, its manufacture is much more easy, requiring but little time and attention, and turning out a superior product with large yield and less cost.

The subject of collodion next claims our attention, it being the most important pharmaceutical preparation of gun cotton. The applicability of gun cotton in ethereal solution to the dressing of wounds, inflamed surfaces, &c., was first made known by Dr. Horace Maynard, of Boston. Its valuable properties soon commanded attention, and at once supplied a want long felt in the medical profession. No better formula for collodion can be found than that of the U. S. P. Using the cotton prepared as before mentioned, it left nothing to be desired.

Collodion can also be made the vehicle for other medicines. Those remedies which are used externally, of course, can only be administered in this manner. Having made a number of experiments on this subject, I present the following formulæ, several of which I think are new:

### Styptics.

*Styptic Collodion.*

| | |
|---|---|
| R. Tannin | ℥ij. |
| Stronger Alcohol | f ℥iv. |
| " Ether | f ℥xii. |
| Soluble Cotton | ℥j ℈ij. |
| Canada Balsam | ℥j. |

Introduce the cotton into a suitable bottle, pour on it 2 fluidounces of alcohol, shake well; then add 10 fluidounces of the ether, agitate frequently until dissolved. Dissolve the tannic acid in a mixture of the remainder of the alcohol and ether, mix with the first liquid, add the balsam, allow to stand until clear; then pour off.

*Collodion with Sesquichloride of Iron.*

| | | |
|---|---|---|
| ℞. | Sesquichloride of Iron | ℥j grs iv. |
| | Stronger Alcohol | f ℥iv. |
| | " Ether | f ℥xij. |
| | Soluble Cotton | ℥j grs. iv. |

Into a suitable bottle introduce the cotton, pour on 2 fluidounces of the alcohol, and shake well; then add the ether, and agitate frequently until dissolved. Dissolve the sesquichloride of iron in the balance of the alcohol; mix with the prepared collodion.

## Anodynes.

*Collodion with Aconite.*

| | | |
|---|---|---|
| ℞. | Pulv. Acontite Root | ℥ij. |
| | Ether | f ℥vj. |
| | Soluble Cotton | ℥j grs. iv. |
| | Stronger Alcohol | q. s. |

Mix the ether with 2 fluidounces of alcohol, moisten the aconite with 1 fluidounce of this, pack in a percolator and percolate with the balance, pouring on *q. s.* alcohol to recover 8 fluidounces, in which dissolve the cotton.

*Collodion with Belladonna.*

| | | |
|---|---|---|
| ℞. | Powdered Belladonna Root | ℥ij. |
| | Ether | f ℥vj. |
| | Alcohol | q. s. |
| | Gun Cotton | ℥j grs. iv. |

Mix the ether with 2 fluidounces of alcohol, moisten the belladonna with 1 fluidounce of this, pack in a percolator and percolate with the balance, pouring on *q. s.* alcohol to recover 8 fluidounces, in which dissolve the cotton.

## Antiseptics and Disinfectants.

*Collodion with Carbolic Acid.*

| | | |
|---|---|---|
| ℞. | Carbolic Acid | ℥j. |
| | Ether | f ℥vj. |
| | Stronger Alcohol | f ℥ij. |
| | Gun Cotton | ℥j grs. iv. |

Dissolve the gun cotton in the ether and alcohol mixed, and then add the carbolic acid.

*Collodion with Sulphocarbolate of Zinc.*

| | | |
|---|---|---|
| ℞. | Sulphocarbolate of Zinc | ℥j. |
| | Ether | f ℥vj. |
| | Stronger Alcohol | f ℥ij. |
| | Gun Cotton | ℥j grs. iv. |

Introduce the cotton into a suitable bottle, add 1 fluidounce alcohol, shake well; add the ether, and agitate frequently until dissolved. Dissolve the zinc salt in the balance of the alcohol, and mix with the prepared collodion.

*Collodion with Thymol.*

| | |
|---|---|
| ℞. Thymol | ʒj. |
| Ether | f ʒvi. |
| Stronger Alcohol | f ʒij. |
| Gun Cotton | ʒj grs. iv. |

Dissolve the cotton in a mixture of ether with part of the alcohol, dissolve the thymol in the balance of the alcohol, and mix.

STIMULANTS IN CUTANEOUS DISEASES.

*Collodion with Iodide of Mercury.*

| | |
|---|---|
| ℞. Mercuric Iodide | ʒj. |
| Potassium Iodide | ʒss. |
| Alcohol | f ʒiv. |
| Ether | f ʒiv. |
| Gun Cotton | ʒj grs. iv. |

Triturate the iodides together in a mortar, add the alcohol boiling, and rub until they are completely dissolved. Then add the gun cotton, lastly the ether, and agitate frequently until the cotton is all dissolved.

STIMULANTS AND RUBEFACIENTS.

*Collodion with Arnica.*

| | |
|---|---|
| ℞. Pulv. Arnica | ʒiv. |
| Ether | f ʒxij. |
| Stronger Alcohol | q. s. |
| Gun Cotton | ʒij grs. viij. |

Mix the ether with 4 fluidounces alcohol. Moisten the arnica with *q. s.* of this, pack in a percolator and pour on the balance, following with alcohol until 16 fluidounces of tincture have been recovered; to this add the cotton, and agitate frequently until dissolved.

*Collodion with Capsicum.*

| | |
|---|---|
| ℞. Grd. Capsicum | ʒiv. |
| Ether | f ʒxij. |
| Stronger Alcohol | q. s. |
| Gun Cotton | 100 grs. |

Proceed as in collodion with arnica, recovering 16 fluidounces of tincture, in which dissolve the gun cotton.

*Collodion with Mezereon.*

| | |
|---|---|
| ℞. Mezereon | ʒiv. |
| Ether | f ʒxij*ℓ* |
| Alcohol | q. s. |
| Gun Cotton | 128 grs. |

Mix the ether with 4 fluidounces of strong alcohol, and in this allow the mezereon to macerate one week. Drain, pack tightly in a conical percolator, pour on the separated liquid, and follow with enough alcohol to recover 16 fluidounces of tincture, in which dissolve the cotton.

*Collodion with Savin.*

| | |
|---|---|
| ℞. Powd. Savin Leaves | ℥iv. |
| Ether | f xij. |
| Alcohol | q. s. |
| Gun Cotton | grs. 128. |

Proceed in same manner as collodion with capsicum.

*Collodion with Black Pepper.*

| | |
|---|---|
| ℞. Grd. Blk. Pepper | ℥iv. |
| Ether | f ℥xij. |
| Alcohol | q. s. |
| Gun Cotton | 128 grs. |

Proceed in the same manner as in collodion with capsicum.

VESICANTS.

*Collodion with Cantharides.*

| | |
|---|---|
| ℞. Powd. Cantharides | ℥iv. |
| Ether | f ℥xij. |
| Stronger Alcohol | q. s. |
| Gun Cotton | 80 grs. |

Moisten the cantharides with a small portion of the ether, and pack in a conical percolator. Then pour on the balance of the ether, mixed with 4 fluidounces alcohol, and follow with enough alcohol to recover 16 fluidounces, in which dissolve the gun cotton.

These collodions can be used as substitutes for many of the officinal plasters, having the advantage of occupying a small bulk, ready adaptability to any surface, and powerful therapeutic action.

I have endeavored, as far as possible, to give some practical information on a branch of pharmacy of which comparatively little is known. The subject is, I think, an important one, since gun cotton and collodion occupy a high position in both medicine and the useful arts, and to its elaboration and useful application too much study cannot be devoted.

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## TO DETERMINE THE VALUE OF COCHINEAL.

BY DR. CRACE CALVERT.

It is often advisable before buying cochineal to determine its tinctorial power. This may be ascertained by two or three methods. In the first, equal weights of the cochineal to be assayed, and of one of known value, are treated with alcohol or a solution of alum. The solutions thus obtained are poured into tubes and placed in a colorimeter. This is an oblong box, which has two apertures at each end and two on the top, in a direct line with the end apertures.

The tubes are placed through the openings on the top, and on looking through the end apertures, any difference in intensity of color between the two liquids can be observed. If a difference is detected, alcohol or water is added to the stronger liquor until there is perfect uniformity of tint. According to the amount of dilution required is the relative value of the cochineals.

A good process was published by the late Dr. Penny, of Glasgow. It consists in exhausting a gramme of cochineal with fifty grammes of potash solution, and this extract is further diluted with one hundred grammes of water. The solution thus obtained is mixed with graduated solution of ferricyanide of potassium (one gramme of salt to 200 grammes of water) till its color changes to a dark brown. A solution of bleaching powder of known strength can also be used for the same purpose. The best method consists in dyeing equal surfaces of flannel in a bath composed as follows:—

*For Scarlet Tints.*

| | | |
|---|---|---|
| Water | 1250 | grams. |
| Cream of Tartar | 2 | " |
| Tin Composition | 2 | " |
| Cochineal | 1 | " |

*For Crimson Tints.*

| | | |
|---|---|---|
| Water | 1250 | grams. |
| Cream of Tartar | 0·75 | " |
| Alum | 1·60 | " |
| Cochineal | 1 | " |

The pieces are then washed and dried, and by a comparison of the relative intensity of shade the value of the cochineal is determined.—*London Pharm. Jour.*

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## COMPARATIVE EXPERIMENTS ON THE PREVENTION OF PUTREFACTION.*

BY DR. F. CRACE CALVERT, F.R.S.

To carry out this series of experiments, small test-tubes were thoroughly cleansed and heated to dull redness. Into each was placed 26 grms. of a solution of albumen containing one part of white of egg to 4 parts of pure distilled water, prepared as described in my paper on protoplasmic life. To this was added 1-1000th, or 0·026 grms., of each of the substances, the action of which I desired to study.

* Abstract of a paper read before the Royal Society, and published in the Chemical News.

The reasons why I employed one part in 1,000 are twofold. First, the employment of larger proportions would, in some instances, have coagulated the albumen; secondly, it would have increased the difficulty of observing the relative powers of the most efficacious antiseptics in preventing the development of the germs of putrefaction or decay.

A drop was taken from each of the tubes, and examined under a microscope having a magnifying power of 800 diameters. This operation was repeated daily with the contents of each tube for thirty-nine days, and from time to time for eighty days. During this time, the tubes were kept in a room the temperature of which did not vary more than 3°, viz., from 12·5° C. to 15·5° C.

In order the better to show the influence of the antiseptics used, I examined two specimens of the same solution at the same time, one of which was kept in the laboratory, the other in the open air.

A marked difference was observed in the result; the one kept outside becoming impregnated with animal life in less than half the time required by the other, while as many vibrios were developed in six days in the tube kept outside as were developed in thirty days in the tube in the laboratory.

A summary of the results of the experiment is given in the following table, in which the substances are grouped according to their chemical nature :—

1. *Standard Solutions.*

| | Days required for development of | |
|---|---|---|
| | Fungi. | Vibrois. |
| Albumen kept in laboratory for comparison..... | 18 | 12 |
| Albumen exposed outside laboratory..... | None | 5 |
| 2. *Acids.* | | |
| Sulphurous acid..... | 21 | 11 |
| Sulphuric acid..... | 9 | 9 |
| Nitric acid..... | 10 | 10 |
| Arsenious acid..... | 18 | 22 |
| Acetic acid..... | 9 | 30 |
| Prussic acid..... | None | 9 |
| 3. *Alkalies.* | | |
| Caustic soda ..... | 18 | 24 |
| Caustic potash..... | 16 | 26 |
| Caustic ammonia ..... | 20 | 24 |
| Caustic lime ..... | None | 13 |
| 4. *Chlorine Compounds.* | | |
| Solution of chlorine..... | 22 | 7 |
| Chloride of sodium ..... | 19 | 14 |

| | | |
|---|---|---|
| Chloride of calcium | 18 | 7 |
| Chloride of aluminium | 21 | 10 |
| Chloride of zinc | 53 | None |
| Bichloride of mercury | 81 | None |
| Chloride of lime | 16 | 9 |
| Chlorate of potash | 19 | 17 |
| *5. Sulphur Compounds.* | | |
| Sulphate of lime | 19 | 9 |
| Protosulphate of iron | 15 | 7 |
| Bisulphite of lime | 18 | 11 |
| Hyposulphite of soda | 18 | 11 |
| *6. Phosphates.* | | |
| Phosphate of soda | 17 | 13 |
| Phosphate of lime | 22 | 7 |
| 7. | | |
| Permanganate of potash | 22 | 9 |
| *8. Tar Series.* | | |
| Carbolic acid | None | None |
| Cresylic acid | None | None |
| *9. Sulphocarbolates.* | | |
| Sulphocarbolate of potash | 17 | 18 |
| Sulphocarbolate of soda | 19 | 18 |
| Sulphcarbolate of zinc | 17 | None. |
| 10. | | |
| Sulphate of quinine | None | 25 |
| Picric acid | 19 | 17 |
| Pepper | None | 8 |
| Turpentine | 42 | 14 |
| 11. | | |
| Charcoal | 21 | 9 |

In comparing the results described in the above table, the substances can be classed under four distinct heads, viz.:—those which prevent the development of protoplasmic and fungus life; those which prevent the production of vibrio life, but do not prevent the appearance of fungus life; those which permit the production of vibrio life, but prevent the appearance of fungus life; and those which do not prevent the appearance of either protoplasmic or fungus life.

The first class contains only two substances, carbolic and cresylic acids.

In the second class, also, there are only two compounds, chloride of zinc, and bichloride of mercury.

In the third class there are five substances, sulphate of quinine, pepper, turpentine, and prussic acid.

In the fourth class are included the remaining twenty-five substances.

The acids, while not preventing the production of vibrio life, have a marked tendency to promote the growth of fungus life. This is especially noticeable in the case of sulphuric and acetic acids.

Alkalies, on the contary, are not favorable to the production of fungus life, but promote the development of vibrios.

The chloride of zinc and mercury, while completely presenting the development of animalcules, do not entirely prevent fungus life; but I would call special attention to the interesting and unexpected results obtained in the cases of chlorine and bleaching powder. When used in the proportion above stated they do not prevent the production of vibrio life. In order to do so they must be employed in excess; and I have ascertained by a distinct series of experiments, that large quantities of bleaching powder are necessary. I found that part of the carbon was converted into carbonic acid, and part of the nitrogen was liberated.

If, however, the bleaching-powder be not in excess, the animal matter will still readily enter into putrefaction. The assumption on which its employment as a disinfectant has been based, namely, that the affinity of the chlorine for hydrogen is so great as to destroy the germs, is erroneous.

The next class to which I would call attention is the tar series, where neither the carbolic nor the cresylic acid fluids give any signs of vibrionic or fungus life during the whole eighty days during which the experiment was conducted.

The results obtained with sulphate of quinine, pepper, and turpentine deserve notice. None of them prevent the development of vibrio life; but sulphate of quinine and pepper entirely prevent the appearance of fungi. This fact, together with the remarkable efficacy of sulphate of quinine in cases of intermittent fever, would lead to the supposition that this class of disease is due to the introduction into the system of fungus-germs; and this is rendered the more probable if we bear in mind that these fevers are prevalent only in low marshy situations, where vegetable decay abounds, and never appear to any extent in dry climates, even in the midst of dense populations, where ventilation is bad, and putrefaction is rife.

The results obtained in the case of charcoal show that it possesses no antiseptic properties, but that it prevents the emanation of putrid gases, owing to its extraordinary porosity, which condenses the gases, thus bringing them into contact with the oxygen of the atmosphere, which is simultaneously condensed.

The above results have been confirmed by a second series.

A series of experiments was also undertaken, substituting gelatine for albumen, and was continued for forty-seven days.

Vibrios appeared in two days in the standard gelatine solution,

and bacteria after four or five; and during the whole time of the experiment, life was far more abundant than in the albumen solution. A distinct putrid smell was emitted after twenty-six days.

With bleaching-powder it took twenty days for life to appear, instead of seven, as in the case of albumen; while at no time during the twenty-nine days which remained life was abundant. No putrid odor was emitted; but a mouldy one could be detected on the thirtieth day.

With chlorine solution vibrio life was only observed after forty days; no putrid or mouldy smell was given off at any time.

The protosulphate of iron gave, with this solution, results quite different from those with albumen, in which, it will be remembered, vibrios appeared in seven days, and fungi after fifteen: whilst, with gelatine, neither protoplasmic nor fungous life appeared during the time the experiments were continued.

Another substance, arsenious acid, also presented a marked difference in its action in the two solutions; for although with albumen, twenty-two days elapsed before vibrios were present, and eighteen before fungi, with gelatine animal life appeared after two days, and at no time did any fungi exist. The effects of the other substances with gelatine were so similar to those with albumen that it is unnecessary to state them here.

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## ON POWDERED CAMPHOR.*

BY JOHN C. LOWD.

QUERY 2.—How may camphor be reduced to a fine powder, and retained in the pulverulent condition?

The query on this subject having been referred to the writer, he hereby submits to your honorable body the result of an experiment.

The various methods for reducing camphor to a fine powder, suggested by different writers, are singularly deficient. The objections are the expense and incomplete results, through the moist condition of the powder when precipitated from an alcoholic solution, renders it unavailable for the purposes for which it is largely employed in the manufacture of errhines, tooth powders, &c.

Camphor possesses the advantageous property of resublimation without losing any of its valuable qualities. This furnishes a suggestive hint capable or being carried out in the preparation of a fine powder. The method I have tried with complete success, consists of vaporizing the camphor from a retort into a large chamber, and its collection in the form of a fine dry powder.

* Proceedings Amer. Phar. Assoc., 1871.

The apparatus used consists of a four-wick lamp, containing one pint of alcohol; a copper retort four inches in diameter by ten inches high, having a curved neck fourteen inches long and two inches in diameter; a chamber or receiver made of strong paper, rendered impervious by any suitable sizing. The paper is stretched upon a light frame of wood, so as to form a cubical chamber of three feet in length, breadth, and height, with an aperture on one side within a foot of the top, in order to receive the neck of the retort. Care must be taken to lute around the joint where the retort connects with the receiver, on account of the inflammability of the vapor. The quantity used is one pound of the camphor, and the time required to sublime it about thirty minutes.

The advantages of this process are its availibility and economy, the perfect condition of the powder as to its purity, dryness, and degree of fineness. It will retain its pulverulent condition if kept in full bottles, well corked, in a cool place.

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## SUBSTITUTION OF CARBOLIC OR PHENIC ACID FOR CREASOTE.

COMMUNICATED BY MR. T. N. R. MORSON, LONDON.

The value of the wood creasote of Reichenbach as a remedial agent, and its employment in the preservation of articles used as food, has been fully proved during the forty years we have been manufacturers of this article.

Of late years its reputation has suffered from the substitution of carbolic or phenic acid for true creasote; and as no good test to distinguish these bodies has been published (and those of our Pharmacopœia are for this purpose useless), we shall feel obliged by your publishing a very simple means for distinguishing these two bodies, which my son, Mr. Thos. Morson, has discovered in making some experiments on adulterated samples submitted to us. This test is glycerine, in which true creasote is *insoluble*. Carbolic or phenic acid, on the contrary, *dissolves in all proportions*, and any large amount of this latter substance, if mixed with true creasote, will render the creasote soluble.

The danger of substituting the carbolic or phenic acid for creasote to be used internally or for food is well known.

To test a suspected sample, mix it with an equal quantity of pure glycerine. If they unite and make a clear solution, the substance is carbolic acid, or in greater part consists of it.

* Reprinted from the Pharmaceutical Journal for May 18, 1872.

## A RAPID METHOD OF PREPARING MERCURIAL OINTMENT.

M. Lucien Lebeuf states that the following process yields a preparation in all respects identical with the mercurial ointment of the Codex.

| | | |
|---|---|---|
| Take of Ether | 4 | grms. |
| Benzoin | 20 | " |
| Oil of sweet almond | 5 | " |

Dissolve and filter.

Put 1 kilogramme of mercury in a wide-mouth glass-stoppered jar of 5 to 6 times capacity of the mercury and tincture. Add the tincture and shake briskly, from time to time removing the stopper to allow the vapor of ether to escape. When the mercury has been reduced to an exceedingly fine powder, decant the major part of the supernatant liquid, and again shake vigorously until a grey mass is obtained, having the consistency and unctuosity of an ointment. This stage of the preparation is a very important one, and care must be exercised, as the more the mercury is divided the less time will its extinction in the fat require. Take then 920 grammes of lard and 80 grammes of wax, and melt them together with a mild heat. When the mixture is cold, put a little of it in a mortar, and put on it the divided mercury. Immediately triturate vigorously, rinsing frequently the bottle which has contained the mercury with a part of the decanted tincture, adding it each time to the contents of the mortar. After a vigorous trituration of from 40 to 50† the ether should be evaporated and the mercury extinguished. The remainder of the lard may be now added, and the whole well triturated for from 15 to 20 minutes.—*Revue de Therapeut. Med.-Chir.* Feb. 1, 1872, *in New Remedies.*

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## THE NATURAL HISTORY AND COMMERCE OF SPONGES.

BY JOHN GIBSON.*

Every schoolboy knows that a tree and a dog belong respectively to the vegetable and animal kingdoms; but much older and wiser heads have been puzzled for centuries in trying to settle definitely to which of these two kingdoms sponges belong; and although the great majority of zoologists have now relegated them to the domains of animality, still there are many who hold that they are more at

*Read at the Meeting of North British Branch of the Pharmaceutical Society, April 18th, 1872, and published in the Pharm. Jour. and Trans., April 27, 1872.

† (Minutes)?—ED.

home among the plants, while a third party maintains that their true position is to be found in a *terra incognita*, lying somewhere between these two; that, in fact, the sponge is neither a plant nor an animal, but a living organism in which we find certain characteristics of both. It is curious to observe how opinion on this vexed question has vacillated from the remote past down to the present time. Aristotle, who was the first to make the sponge an object of scientific investigation, speaks of it as an animal. "The sponge," he says, "is a stationary or rooted animal." The same opinion was held by Pliny, who also tells us that in his time some writers divided sponges into male and female. That our earliest biologists should have placed sponges among animals seems somewhat remarkable. The outward marks—which, in those early days of scientific inquiry, were mainly relied on—such as their fixedness, their want of sensation, and their indefiniteness of shape, all seeming to point to their connection with the vegetable kingdom. Aristotle's views held undisputed sway through the dark ages, or to put it more correctly, the sponge in those times continued to discharge the practical duties of the *toilette*, and no unpractical questions regarding its nature seem ever to have been asked. With the revival of learning in the sixteenth century, however, the question was once more raised; the tide of scientific opinion set in strongly against Aristotle's view, and the sponges were now placed by general consent among plants, and even characterized as the most imperfect of their class. This remained the prevalent opinion down to modern times; thus we find Linnæus, in an early edition of his 'Systema Naturæ,' arranging the sponges among the cryptogamous algæ. About this time, however, Ellis and others succeeded in demonstrating the animal nature of zoophytes in general; again the views of the ancient writers were adopted, and in the twelfth edition of his great work, Linnæus arranges the sponges among animal zoophytes. This opinion has, since that time, been the prevalent one; while, since the publication in the Edinburgh 'Philosophical Journal," of Dr. Grant's investigations on the structure and functions of the sponge, it may be said to have become almost universal. Regarding the sponge, then, as belonging to the Protozoa—the lowest of the animal sub-kingdoms—let us observe how it plays its humble part in the economy of nature.

The article known to commerce as the sponge, and which consists for the most part of a mass of delicate horny fibres interlaced with each other so as to form a rude sort of net-work, though in belongs to, yet does not constitue the animal. It is merely a framework on which the living part is supported, and corresponding somewhat to the skeleton of the higher animals. Those horny fibres are so arranged as to form regular canals, which permeate the sponge in every direction, and open on its surface in what zoologists term *pores* and *oscula*. The name of *pores* is given to the numberless

small openings, while that of *oscula* is applied to those larger apertures which occur at rarer intervals on the surface of the sponge. It will afterwards be seen that the *pores* and *oscula* have very important, though entirely different functions to perform. In many of the sponges also, little needle-like bodies known as spicules are found scattered through the mass. These can be most readily obtained by burning a piece of sponge, when they are left behind, and from the variety of fantastic shapes which they assume, form beautiful microscopic objects. Their presence, however, in any sponge is fatal to its value as an article of commerce. In the living state every fibre of the horny framework is covered over with a coating of gelatinous matter of a brownish-yellow color, and in other respects somewhat resembling the white of an egg. This is the substance known as protoplasm, and which Professor Huxley regards as the physical basis of life. As living sponge is but an immense aggregation of minute bodies of this protoplasm, it may be well to notice some of the results of recent investigation on this substance, and specially as regards its modes of occurrence in nature. It is a true living fluid, for when allowed to escape from the cell in which it is confined, it moves about and gives all the signs of possessing life. It occurs in both the vegetable and animal kingdoms, existing in the former as the inner wall or primordial utricle, which is essentially the vital portion of every cell. In the latter it forms the most important constituent of the blood. Examine a drop of blood under the microscope, and it will be seen to consist of certain bodies known as red and colorless corpuscles respectively, floating in a colorless fluid. Separate a red corpuscle from its fellows, and it makes no motion; it passively assumes whatever shape you may impress upon it. Then place a single colorless corpuscle under the microscope, and, unlike the former, it will be seen to be ever changing its form, like a very Proteus. These colorless corpuscles consist of pure protoplasm. But this substance, which thus seems to carry on a subordinately independent life in the liquid element of our blood, is also found leading an entirely independent existance outside, not only in the aggregated form as in the sponge, but also as a separate solitary creature in the Amœba. This creature is found attached to vegetable growths in stagnant waters, and when looked at through the microscope behaves exactly as did the colorless corpuscle in the blood, or the protoplasm of the inner wall of the cell. It exhibits a constantly changing shape and has thus earned the name of Amœba, from a Greek work signifying change. This creature has been the subject of much and minute investigation, and yet no trace has been detected of what can properly be termed organized structure. It has no mouth, no gullet, no stomach and no intestine, and yet it gets hungry and eats; in grows, and therefore it must digest. How then is the work of nutrition which we always associate with the possession of the above organs performed in a creature apparently

so structureless as the Amœba? Simply by its becoming for the time being, all mouth, then all stomach, and lastly all intestine. When the Amœba finds itself in the neighborhood of something fit for food, it brings itself into contact with it, and then no matter at what part of its body this contact takes place, there it opens up,—an extemporized mouth is formed, and its victim, sometimes larger than itself, is gradually swallowed. Its food being thus engulfed, the creature now takes upon itself the duties of a stomach, and the foreign body is gradually dissolved, until the entire soluble portion is abstracted; the insoluble remnant has now to be dealt with, and the Amœba by virtue of a certain power of contraction which it is believed to possess, assumes the functions of an intestine, presses the effete matter from its interior towards its surface, when the animal again opens up and allows such matter to escape. But to return to our sponge; it has already been said that the gelatinous substance lining its canals is protoplasm. Any one may satisfy himself upon this point by getting a piece of living sponge from the Edinburgh and Glasgow canal, where the *Spongilla fluviatilis* abounds. Taking a thin section of this and placing it under the microscope, the canals will then be seen to be filled with a fleshy substance made of a number of little bodies. Isolate one of these, and it will be found to exhibit phenomena in every way similar to what has just been described as belonging to the Amœba. Living sponge is thus an assemblage of amœba-like protoplasms supported on a network of delicate fibres. Unlike those creatures, however, the protoplasms of the sponge are fixed, the entire colony remaining permanently rooted; and being thus unable to go in search of food, they are solely dependent for their subsistence on the nutritious particles that may happen to come within their reach; and this bring us to consider the functions of the pores and oscula on the surface of the sponge. Dr. Grant, after long continued observations, discovered that there was a constant flow of water into the smaller openings or pores, and that there was as regular an outflow of water from the larger apertures or oscula. He also found that the water from the oscula, had in its course through the sponge, been deprived of its oxygen and its nutritious ingredients, while, on the other hand, it had become charged with the effete materials of digestion. It was thus shown that, by some means or other, water laden with nutritive matter was made to enter by the pores, and that passing along the canals, it surrendered its valuable contents to the little protoplasms arranged along the sides; that sweeping on, it gathered up the effete matter constantly being given off, and then entering the wider passages, its course got turned, and now moving towards the surface was at last ejected from the oscula. The means by which these opposite currents are produced has been the subject of much controversy, but Dr. Grant has shown that in many cases at least they are produced by the action of vibratile cilia. These

cilia are minute, hair-like bodies found on certain parts of all animals, but occurring in greatest abundance among the lower forms of animal life. They are constantly in motion while the creature lives, and even continue to move for some time after life has become extinct: The cause of this motion is attributed to waves in the protoplasm to which the cilia are attached. Dr. Grant believes fhat such cilia exist in all sponges, though from their minuteness in certain species, we have not yet been able to discover their presence.

A living sponge may thus be fitly described as a large and populous city, all honey-combed over with innumerable streets and lanes, and whose protoplasmic inhabitants ever sit, like Eastern shopkeepers, out doors, and make their living by picking up whatever treasure fortune may put in their way. Nor are they totally uprovided with instruments for seizing their prey. In common with the Amœba, they have the power of sending out prolongations of their own substance, known as *pseudopodia*, or false feet; and casting these across the watery channel, they lie in wait for the unfortunate animalcule that has just been allured by the ever-waving cilia to enter in at the outside pore, heedless of the shattered remains of fellow animalcules that are being constantly ejected from the neighboring osculum. With regard to their mode of propagation, the parent sponge throws off little masses of protoplasm, which are taken up by the current passing along the canals, and sent out into the world of waters through the oscula. They float about in the water by means of cilia, specially developed for this stage of their existence, and for some time show considerable activity. Their appetite at this season also appears to be enormous. On this point, Mr. Carter, of Bombay, furnishes us with some interesting particulars. In one case "he saw one of these proteans approach a gelatinous body, something like a sluggish or dead one of its kind, and equal to itself in size, and having lengthened itself out so as to encircle it, send processes over and under it from both sides, which uniting with each other, at last ended in a complete approximation of the opposite folds of the cell wall throughout their whole extent, and in the enclosure of the object within the duplicature. Even while the protean was thus spreading out its substance into a mere film to surround so large an object, a tubular prolongation was sent out by it in another direction to seize and enclose in the same way a large germ which was lying near it. After having secured both objects, the protean pursued its course rather more slowly than before, but still shooting out its dentiform processes with much activity. It took about three-quarters of an hour to perform these two acts." Mr. Dallas, in his work on Natural History, also states: "That not unfrequently combats take place between two of these singular creatures, when, if the size of the combatants be nearly equal, they merely twist about for a short time and then separate, but if there be any great disparity in bulk, the larger one

swallows up his antagonist without remorse." After leading this roaming life for a while, they gradually lose their cilia, settle down and get attached to some object at the bottom, where they begin to build up their skeletons, and assume the form of sponges.

*(To be continued.)*

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## PREPARATION OF A VERY ACTIVE CANTHARIDAL PLASTER.*

BY PROF. G. DRAGENDORFF, OF DORPAT, RUSSIA.

Apothecaries frequently complain that some cantharides do not furnish an active blistering plaster; that the same furnish, even when treated with acetic ether, an extract so poor in cantharidin, that with its aid no good Drouott's blistering tissue can be produced. In most cases the opinion is expressed that the flies contain too small a per centage of canthardin. My experience teaches me to discredit the latter opinion. It is possible to obtain good preparations even from such apparently poor cantharides, it being only necessary to thoroughly extract the cantharidin they contain.

A few observations show how poorly this is commonly accomplished. According to my experience the amount of cantharidin in Spanish flies varies from 0.27 to 0 5 per cent. The coating of a vesicating tissue 20 c m. long and twelve wide requires about 25 grm. plaster substance, containing usually about 6 grm. powdered Spanish flies, furnishing at least 0.016 cantharidin. 0.00002 grm. cantharidin suffice for a blistering surface of a square centimeter, or 0.0048 grm. for 240 square centimeters, or less than one-third of the smallest quantity that may be considered present in the plaster. Mechanical causes may partly be found to be the ones that prevent a thorough action of the plaster. A plaster of poor adhesiveness, not being in close contact is not in the condition necessary for the absorption of the cantharidin. It is also a mistake of several pharmacopœias to permit the use of coarsely-powdered cantharides, the quantity of cantharidin in which is not uniformly distributed in the plaster, even if the power is heated for a long time with the oil.

Other causes, unnoticed heretofore, also weigh heavily in this direction. The cantharidin is present in the Spanish flies in several different combinations, in which it is firmly held. This we may see, as mentioned already in my "Contributions to Toxicological Chemistry," in the difficult behavior of flies towards various solvents. Cantharides with about 0.3 per cent of cantharidin yield to water,

*From the Pharmacist, April, 1872.

even after repeated boiling with fresh portions of the same, only about half of their cantharidin, while the remainder is only yielded to potassa lye. In the same manner, alcohol, chloroform, and ether, dissolve only 30 per cent of the blistering substance. If all the cantharidin is to be extracted, bases like potassa or soda must be employed, which form easily soluble salts with the cantharidin. Together with Masing, I demonstrated years ago that the salts thus formed are energetic blistering agents. During the past two years, reference has occasionally been made to our observation, especially by Delpech and Guichard, recommending the cantharidates of soda and potassa as vesicants.

Without alluding to this further, I would say that by the aid of soda or potassa the entire amount of cantharidin contained in the flies may be rendered active. The finely-powdered flies are mixed to a paste with diluted alkaline lye of about 1.1 sp. gr., heated in water-bath for 25 to 30 minutes, when sufficient muriatic acid is added, to have a trifling surplus of the same, and the whole mass is dried rapidly in the water-bath. The residue, which we may call "prepared cantharides," is powdered anew and employed for the preparation of the plaster, or for the extract with acetic ether for use upon tissue. The small quantity of potassium or sodium chloride present, is in no case injurious. The cantharidin is now present in the mixture in a free state. In a drug store in this city, where my proposition has been followed, no complaints have been made about the preparation.

Even for the preparation of the pure cantharidin, the above mentioned process is worthy of attention As I mentioned before, ether, alcohol, etc., dissolve from the cantharides, not "prepared," only a fraction of the cantharidin present.

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*Chloral Hydrat* fulfils a novel indication in the hands of Dr. C. S. Strother, of Barnesville, Ga., that of counter-irritant and local anodyne. In this "new departure" it is said to be excellent in neuralgia, pleurodynia, rheumatism, gastralgia, nausea and vomiting. A saturated aqueous solution of the chloral is applied over the seat of pain with slight friction; and glycerine, olive oil or sweet cream is used as a subsequent dressing. There will in most instances be enough of the chloral absorbed to produce a considerable anodyne effect, in addition to the rubefacient action.—*Phila. Med. and Surg. Rep.*

# XYLOL, THE NEW REMEDY FOR SMALL-POX.*

BY C. R. C. TICHBORNE, F.C.S., M.R.I.A.

Xylol, xylene, or ethyl-benzine as it has been respectively called, is one of a homologous series of hydrocarbons, of which the well-known benzine and toluene form the two first. These hydrocarbons are all formed from coal tar naphtha. Xylol was first procured by Hugo Muller, but its nitro-compound had previously been discovered by Warren De la Rue in 1856. Coal tar naphtha is submitted to fractional distillation until the part which boils at 141° is separated, this is submitted to the action of fuming sulphuric acid, which dissolves the xylol and leaves the other hydrocarbons. The xylol is then separated by distillation from this mixture.

Xylol is said to have been used by Dr. Zuelzer, the Senior Physician at the Charite Hospital at Berlin, with great success in cases of small-pox. The theory of its action would appear to be that xylol is taken up by the blood, and and acts as a disinfectant. The vapor seems to the writer to possess faint, and not very well marked, anæsthetic properties—this may be due to the presence of a small quantity of benzol, or other hydrocarbons. The antiseptic properties of this group of compounds are well known, and thus probably the specific action of this one. The boiling point is variously stated at 139° to 140°. The specimens examined by the writer, generally commenced to boil at about 135° C. The specific gravity was ·866.

It is said that the purity of xylol is of importance, but unfortunately there is no very ready method by which the ordinary practitioner might detect its purity. It should be soluble in fuming sulphuric acid, but it is not soluble in the ordinary sulphuric acid of the Pharmacopœia.

It has a faint odor something like benzol, and an aromatic taste. The dose is three to five drops for children; ten to fifteen drops for adults every hour to every three hours. It is quite harmless in reasonable doses. In Berlin it is given in capsules. As it is very insoluble, the best method of giving it would be in an emulsion of almonds. When once assimilated it is rapidly oxidized in the body, this fact being demonstrated by the production of a peculiar odor in the urine, which, however, is quite distinct from xylol itself.

*From the Medical Press and Circular, London.

# Editorial.

## TRADE IN DRUGS BY UNQUALIFIED PERSONS.

"Cannot something be done to prevent general store-keepers from selling drugs and poisons, without having previously obtained a license or being registered? My business is seriously interfered with by one party here who sells nearly all the common drugs, hellebore, &c."

The above extract is taken from a letter received by the Registrar, and which has been handed to us with a request that we call attention to the subject in the JOURNAL, and offer some explanation of what appears to be a common source of complaint, more especially amongst druggists residing in the smaller towns. Having received a considerable number of letters of similar import to that quoted above, we are prepared to believe that the existing state of things is quite sufficient to cause the dissatisfaction of those who have complied with all the requirements of the law, and who still derive no advantage from its protection. Admitting, then, the extent of the evil as stated by our correspondents, it remains for us to point out the conditions which affect its continuance, and, if possible, suggest a remedy.

The law on the subject is exceedingly simple and explicit. It is declared unlawful for any unregistered person to keep open shop for the dispensing, retailing or compounding of poisons; or to sell any poison named in certain lists; or to assume any of the titles common to pharmacists. Any persons transgressing in any of these particulars shall for the first offence incur a penalty not exceeding twenty dollars and costs, which may be recovered before any two justices of the peace or police magistrate, on the oath of one or more witnesses. In any case of prosecution it is incumbent upon the defendant to prove that he is entitled to the rights of a pharmacist, and the only admissable proof on this point is the production of the Registrar's certificate.

It will be seen that the law is no-wise at fault, but points out the course of action with uncommon precision. The ordinarily tardy course of legal procedure is cut short by the limitation of the evidence to certain particulars, and the whole operation is one of the

greatest simplicity. In only one respect could the provisions of the act be rendered easier of application, and that would be in the appointment of an Inspector of Pharmacies. This course was suggested at the time the act was drafted, but it was learned that the Government would not consider any measure of the kind which necessitated the creation of new officers. Consequently, this suggestion had to be abandoned. We confidently look forward to the time when such an officer may be appointed, and his duties extended not only to druggists, but to drugs themselves. In the meantime, however, we shall have to be content with things as they are, and we may comfort ourselves with the assurance that neither in England, or in any of the United States, more protection exists for the druggist than is the case in Canada.

Considerable misapprehension appears to exist regarding the duties of the College in this matter. It would certainly be an impossibility under present financial circumstances, for the College to assume the entire responsibility of prosecuting offenders; nor would such a course be consistent with the object for which the College was designed. It might be that to that end some assistance might be offered, and, indeed, is at present offered, through the Committee on Infringements appointed last session. Such assistance must necessarily be limited to the tendering of legal advice, or pecuniary assistance. As the case stands, neither of these are required.

As the fault lies not in the law, nor can it be chargeable to the College, with whom does it rest? We answer, with those members who see the law trangressed, daily, before their eyes, and while suffering themselves through such transgression, are yet unwilling to do their duty. If complaints are made before those parties who are duly qualified to act decisively in the matter, we think the illegal trade in poisons would very soon cease to exist.

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# Editorial Summary.

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Corn Cobs as a Source of Potash.—According to Herbert Hazard, (*Am. Jour. Pharm.*) 100 parts of air-dried corn cobs contain 0·795 part of carbonate of potash. It is suggested that the refuse cobs be collected and burnt, and also that the ashes of those

used as fuel at the various shelling mills be utilized as a source of potash. It is said that this might be easily done at the principal shipping points of the corn growing sections. In 1871 the corn crop of the United States amounted to 1,100,000,000 bushels. This amount would represent adout 7,700,000 tons of cobs, which containing three-quarters per cent of carbonate of potash would, if utilized in the manner indicated, yield the enormous quantity of 115,500,000 pounds of the salt. It will be readily be conceded that the value of this is an item worth considering, more especially as the present sources of potash are rapidly failing.

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Remedy for Catarrh.—The German correspondent of the *Chemist and Druggist*, writing from Dresden, notices a new remedy for that most annoying of complaints—a cold in the head. The application has been found very successful, and is very simple and not unpleasant to the patient. It is prepared in the following manner. A wide-mouth glass stoppered bottle is filled with amianth, or better with cotton, and then the following mixture is poured on, so that the cotton or amianth is perfectly saturated with it :—

Acid. carbolic puriss., 5·0 (80 grains).
Liq. Ammon. caustic, 6.0 (90 grains).
(spec. gravity 0·960.)
Aquæ distillat, 10·0 (℥ij., 40 grains).
Spirit. Vini. rectificatiss (80 grains).

The vapours are drawn into the nose frequently during the day, and now and then inhaled into the mouth. A medical gentleman of Stettin, who is renowned not only for his skill as a physician, but likewise for the tremendous catarrh that troubles him regularly every winter, has used this olfactorium anticatarrhoicum with perfect success on his own person, and afterwards on many of his patients, and recommends it highly.

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Syrupus Cubebæ.—C. L. Mitchell, (*Am. Jour. Pharm.*) proposes the following formulæ for the preparation of a syrup of cubebs which has been found an elegant as well as efficacious remedy in diseases of the throat and lungs :—

| | |
|---|---|
| Fld. Ext. Cubebs | f℥ij |
| Carb. Magnesia | f℥ss. |
| Sugar Powd | ℥xij. |
| Orange Flower Water | f℥ij. |
| Water | q. s. |
| Ess. Oil Almonds | gtt. j. |

Rub up the fld. ext. with the carb. magnesia and then add ʒij. of the powd. sugar in small portions. When thoroughly mixed add gradually first the orange flower water and then fʒvij. water, constantly triturating the mixture until the sugar is dissolved. Filter and add q. s. water through the filter to measure fʒxj., in which dissolve the balance of the sugar without heat. Add the oil almonds cut in a little alcohol, and again filter, adding, if necessary, q. s. water through the filter to measure 1 pt. The dose of this syrup is fʒj—iv. and it may be given in even larger doses if desired. It may also be made by using the officinal oleoresin in the proper proportion in place of the fluid extract.

# Practical Formulæ.

*Pharaoh's Serpents' Eggs* may be made in the following way: Take mercury and dissolve it in moderately dilute nitric acid, by means of heat, taking care, however, that there always be an excess of metallic mercury remaining; decant the solution, and pour it into a solution of sulphocyanide of ammonium or potassium; equal weights of both will answer. A precipitate will fall to the bottom of the jar, which is to be collected on a filter and washed two or three times with water, after which it is put into a warm place to dry. Take for every pound of this material one ounce of gum tragacanth which has been soaked in hot water. When the gum is completely softened, it is to be transferred to a mortar, and the pulverized and dried precipitate gradually mixed with it by means of a little water, so as to present a somewhat dry pill mass, from this pellets of the desired size are formed by hand, put on a piece of glass and dried again; they are then ready for use. A substitute, said to be as good as the above, and superior in not being poisonous, is prepared in the following way:

Take Bichromate of potassa..... 2 parts.
Nitrate of potassa..... 1 part.
White sugar..... 3 parts.

Pulverize each of the ingredients separately, and then mix them thoroughly. Make small paper cones of the desired size, and press the mixture into them. They are now ready for use, but must be kept from light and moisture.—*Drug. Circular.*

*Varnish to Imitate Ground Glass.*—To make a varnish to imitate ground glass, dissolve 90 grains of sandarac and 20 grains of mastic in two ounces of washed methylated ether, and add, in

small quantities, a sufficiency of benzine to make it dry with a suitable grain—too little making the varnish too transparent, and excess making it crapy. The quantity of benzine required depends upon its quality—from half an ounce to an ounce and a half or even more; but the best results are got with a medium quality. It is important to use washed ether, free from spirit.—T. GARRATT *in Brit. Jour. of Photography.*

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# Selections.

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TURBID WINE OF COLCHICUM SEEDS contains, according to Vulpius, a large number of minute yeast cells, originating, probably, from the nitrogenated principles of the seeds. They will readily pass through the filter, but may be removed by agitating the turbid wine with finely powdered colchicum seeds, in the proportion of 1000 to 1, and filtering immediately and repeatedly through the same filter, after which it will remain clear for many months.—*Pharm. Centr. Halle*, 1872, *No.* 10.

*Ferrous Sulphate*, precipitated by alcohol, contains less water of crystallization than the crystallized salt, and loses a portion of it readily on exposure to dry atmosphere. G. H. Barckhausen found that 1 gramme of the crystallized salt required 17·2 c. c. of a solution of chlorinated lime for oxidation, while the same quantity of the precipitated salt, immediately after drying, required 18·8 c. c.; after four hours' exposure at the ordinary temperature, 19·5 c. c., after one hour's exposure to about 80° F., (25 to 27° C.) 20·6 c. c., and after another hour, 21.4 c. c. of the same solution of chlorinated lime were necessary for complete oxidation.—*Archiv d. Pharm.* 1871, *Dec.*, 197. *in Am. Jour. Pharm.*

TESTING ETHYLIC AND ACETIC ETHERS for ALCOHOL, by C. Frederking.—In a graduated glass tube equal volumes of ether and anhydrous glycerin are thoroughly mixed; the alcohol obtained in the ether is taken up by the glycerin, and its volume increased, whereas that of the ether decreases by the amount of alcohol contained in it. Ether may therefore be deprived of water as well as alcohol previous to its rectification, in order to produce it pure, and the glycerin mixed with the water or alcohol may again be obtained pure by evaporation. In this manner essential oils may also be tested with glycerin, for the amount of alcohol fraudulently added.—*Polyt. Centralblatt*, 1871, *p.* 728, *abstracted in Pharmacist.*

PREPARATION OF COLLODIUM.—The process which has been for years successfully used in the laboratory of the university of Munich is as follows: 30 grm. finely powdered saltpetre and 30 grm. sulphuric acid are mixed in a glass cylinder by means of a glass rod until the former is dissolved, 2 grm. cotton are then added and the whole well stirred for five minutes. After washing with much water, then with alcohol and drying, the cotton dissolves readily in a mixture of equal parts of alcohol and ether, and the solution leaves on evaporation a perfectly transparent film. The presence of much nitric acid in the oil of vitriol seems to render the

collodium film opaque. The preparation, at one operation, of a larger quantity of collodium cotton than 30 grammes appears to alter somewhat the optical behaviour of the collodium; and the same result is obtained if the last traces of acid are removed by ammonia.—*N. Repert. f. Pharm.*, 1872, N. 1, p. 6, in *Am. Jour. Phar.*

DIGITALIS AN ANAPHRODISIAC.—M. Gourvat is publishing, in the *Gaz. Med. de Paris*, a series of papers on the action of digitalis. In a late number (Dec. 23rd, 1871) we find the following:—"When the digitalis or digitaline is administered for some time to a man in full possession of sexual powers, the latter become gradually weakened, the propensities disappear, the liquor seminis diminishes by degrees, and may at last vanish altogether. These results are explained by the antiplastic and lowering action of digitalis. The antiphlogistic properties of the drug are the secret of its good effect in spermatorrhœa. With women, digitalis and digitaline excite strong, regular and intermittent uterine contractions, and control metrorrhagia; hence digitalis is employed in exciting abortion. (Tardieu.) It is probable that digitalis acts as an anaphrodisiac in women also, inducing, by long-continued use, impotence and sterility. In men it hinders the secretion of the liquor seminis, and in women it may interfere with the development of the Graafian vesicles, the propagation of the species being thus doubly retarded."—*Lancet, Jan.* 13, 1872.

POISONING BY VANILLA-ICES.—The German medical journals call attention to the circumstance that several cases of poisoning by vanilla-ices have in late years occurred in Paris, Altona, Munich, Vienna, and other places. Maurer has recently related an instance in which, after the use of these ices, a large family suffered from the symptoms described as having been present in the other cases, viz., frequent vomiting, diarrhea, assuming in some of the patients a choleriform character. All the patients recovered. What the nature of the poison is, has not yet been ascertained. In two observations on the remaining portions of the poisonous ices, traces of lead, iron, and tin were present; but the combination of lactic acid with oxide of tin has been ascertained not to be poisonous. Schroff believes that the poison is produced by the use of cashew-nut oil to besmear the vanilla-pods.—*Phila. Med. and Surg. Rep.*

PREPARATION OF PURE METALLIC SILVER.—Dr. Grager.—The author dissolves the alloy of silver in nitric acid, taking care to use as small a quantity as possible; the solution is then transferred to a large-sized porcelain basin, and gradually neutralized with previously lixiviated chalk free from chlorine. The neutralized liquid is next boiled, and chalk again added to it, while boiling, until the fluid has become colorless (in order to test more accurately, a drop of the liquid is poured on a piece of white filtering paper, and next to that drop is placed one of a solution of ferrocyanide of potassium; as long as the well-known red coloration, copper reaction, hereby ensues, chalk is added). The fluid is next filtered, to separate the carbonate of copper, and the filtrate (a solution of nitrate of silver and nitrate of lime) is again boiled, and either further treated with carbonate of lime or, better still, with carbonate of soda; the bright yellow colored precipitate thereby ensuing, a mixture of carbonate of silver and carbonate of lime, is washed, dried and ignited, leaving a greyish white mass of metallic silver mixed with carbonate of lime; this mixture is treated with dilute hydrochloric acid, washed with distilled water, and then fused along with borax, yielding pure silver. The bright green-colored carbonate of copper can be used as a pigment for painting purposes.—*Dingler's Polyt. Jour., in Chem. News, March*, 1872.

## BUSINESS MEMORANDA.

Mr. J. Walker has purchased the business formerly carried on by Messrs. Cull & Engels, Mitchell.

Mr. Charles Mole has commenced business in Frank Street, Strathroy.

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## NOTICE TO MEMBERS AND ASSOCIATES.

Members and associates who are in arrears in respect of fees due to the College are respectfully notified that the JOURNAL will be discontinued after the present number, without such fees are promptly remitted to the Registrar. The next issue of the JOURNAL commences a new volume, and our order to the printer will be governed by the number of entries on the Registrar's list, on the fifteenth of this month. Back numbers will therefore not be guaranteed.

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## TRADE REPORT.

Business has continued very good during the month, and payments have slightly improved. We have no great changes to notify, but, generally speaking, prices are slightly easier, especially in heavy chemicals. This is attributable to the presence of large importations, some of which were secured before the extreme advances took place. Holders in some cases are willing to realize at relatively less than manufacturers' prices in England.

Chamomiles, Cape aloes, gum assafœtida, oil citronella, and oil orange are quoted higher.

Oil bergamot, and oil lemon are quoted somewhat lower, but are likely to command higher rates again, cantharides we also quote easier.

Spices generally maintain high and advancing prices.

Naval stores are easier and still falling.

Oils are all very firm at advanced prices.

| DRUGS, MEDICINES, &c. | $ c. | | $ c. |
|---|---|---|---|
| Acid, Acetic, fort | 0 12 | @ | 0 14 |
| Benzoic, pure | 0 25 | | 0 35 |
| Citric | 1 15 | | 1 20 |
| Muriatic | 0 04 | | 0 06 |
| Nitric | 0 11½ | | 0 15 |
| Oxalic | 0 35 | | 0 35 |
| Sulphuric | 0 03¾ | | 0 07 |
| Tartaric, pulv | 0 50 | | 0 50 |
| Ammon, carb. casks | 0 21 | | 0 22 |
| " jars | 0 21 | | 0 22 |
| Liquor, 880 | 0 20 | | 0 25 |
| Muriate | 0 12½ | | 0 15 |
| Nitrate | 0 45 | | 0 60 |
| Æther, Acetic | 0 45 | | 0 50 |
| Nitrous | 0 35 | | 0 37 |
| Sulphuric | 0 48 | | 0 50 |
| Antim. Crude, pulv | 0 13 | | 0 17 |
| Tart " | 0 56 | | 0 60 |
| Alcohol, 95 per ct.....Cash | 1 60 | | 1 72 |
| Arrowroot, Jamaica | 0 18 | | 0 22 |
| Bermuda | 0 45 | | 0 65 |
| Alum | 0 02¾ | | 0 03½ |
| Balsam, Canada | 0 40 | | 0 42 |
| Copaiba | 0 77 | | 0 80 |
| Peru | 3 80 | | 4 00 |
| Tolu | 0 90 | | 1 00 |
| Bark, Bayberry, pulv | 0 18 | | 0 20 |
| Canella | 0 17 | | 0 20 |
| Peruvian, yel. pulv | 0 42 | | 0 50 |
| " red " | 2 10 | | 2 20 |
| Slippery Elm, g. b | 0 15 | | 0 20 |
| " flour, packets | 0 28 | | 0 32 |
| Sassafras | 0 12 | | 0 15 |
| Berries, Cubebs, ground | 0 20 | | 0 25 |
| Juniper | 0 06 | | 0 10 |
| Beans, Tonquin | 0 62 | | 1 10 |
| Vanilla | 18 00 | | 19 00 |
| Bismuth, Alb | 4 00 | | 5 00 |
| Carb. | 4 00 | | 5 00 |
| Camphor, Crude | 0 38 | | 0 40 |
| Refined | 0 50 | | 0 55 |
| Cantharides | 2 80 | | 3 00 |
| Powdered | 2 90 | | 3 10 |
| Charcoal, Animal | 0 04 | | 0 06 |
| Wood, powdered | 0 10 | | 0 15 |
| Chiretta | 0 20 | | 0 30 |
| Chloroform | 1 25 | | 1 65 |
| Cochineal, S. G | 0 80 | | 0 95 |
| Black | 1 10 | | 1 20 |
| Colocynth, pulv | 0 50 | | 0 60 |
| Clolodion | 0 67 | | 0 70 |
| Elaterium oz | 4 50 | | 5 00 |
| Ergot | 0 65 | | 0 75 |
| Extract Belladonna | 2 20 | | 2 50 |
| Colocynth, Co | 1 25 | | 1 75 |
| Gentian | 0 50 | | 0 60 |
| Hemlock, Ang | 1 12 | | 1 25 |
| Henbane, " | 1 70 | | 2 00 |
| Jalap | 5 00 | | 5 50 |
| Mandrake | 1 75 | | 2 00 |
| Nux Vomic oz | 0 60 | | 0 70 |
| Opium oz | 1 10 | | — |
| 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 32 | | 0 40 |
| Gum, Aloes, Barb. extra | 0 70 | | 0 80 |
| " " good | 0 38 | | 0 50 |
| " Cape | 0 16 | | 0 20 |
| " " powdered | 0 20 | | 0 30 |
| " Socot | 0 52 | | 80 |
| " " pulv | 0 60 | | 90 |
| Arabic, White | 0 60 | | 0 65 |
| " " powdered | 0 50 | | 0 75 |
| " sorts | 0 28 | | 0 30 |
| " " powdered | 0 42 | | 0 50 |
| " com. Gedda | 0 13 | | 0 16 |
| Assafœtida | 0 32 | | 0 42 |
| British or Dextrine | 0 13 | | 0 15 |
| Benzoin | 0 48 | | 0 55 |
| Catechu | 0 12 | | 0 15 |
| " powdered | 0 25 | | 0 30 |
| Euphorb, pulv | 0 32 | | 0 40 |
| Gamboge | 1 05 | | 1 20 |
| Guaiacum | 0 25 | | 0 78 |
| Myrrh | 0 42 | | 0 60 |

| DRUGS, MEDICINES, &c.—*Contd.* | $ c. | | $ c. |
|---|---|---|---|
| Sang Dracon | 0 60 | | 0 70 |
| Scammony, powdered | 6 50 | | 6 75 |
| " Virg. " | 14 50 | | — |
| Shellac, Orange | 0 55 | | 0 60 |
| Gum, Shellac, live r | 0 50 | | 0 52 |
| Storax | 0 65 | | 0 75 |
| Tragacanth, flake | 1 10 | | 1 40 |
| " common | 0 35 | | 0 40 |
| Galls | 0 27 | | 0 32 |
| Gelatine, Cox's 6d | 1 10 | | 1 20 |
| Glycerine, common | 0 30 | | 0 35 |
| Vienna | 0 30 | | 0 40 |
| Prices | 0 60 | | 0 75 |
| Honey, Canada, best | 0 15 | | 0 17 |
| Lower Canada | 0 14 | | 0 16 |
| Iron, Carb. Precip | 0 17 | | 0 20 |
| " Sacchar | 0 40 | | 0 55 |
| Citrate Ammon | 1 45 | | 1 50 |
| " & Quinine, oz | 0 56 | | 0 60 |
| " & Strychine " | 0 17 | | 0 25 |
| Sulphate, pure | 0 08 | | 0 10 |
| Iodine, good | 12 50 | | — |
| Resublimed | 16 25 | | — |
| Jalapin | 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 15 |
| Lime, Carbolate brl | 5 50 | | — |
| Chloride | 0 06 | | 0 07 |
| Sulphate | 0 08 | | 0 12½ |
| Lead, Acetate | 0 14 | | 0 15 |
| Leptandrin oz. | 0 60 | | — |
| Liq. Bismuth | 0 50 | | 0 75 |
| Lye, Concentrated | 1 75 | | 2 00 |
| Liquorice, Solazzi | 0 50 | | 0 55 |
| Cassano | 0 23 | | 0 40 |
| Other brands | 0 14 | | 0 25 |
| Liquorice, Refined | 0 35 | | 0 45 |
| Magnesia, Carb. 1 oz. | 0 20 | | 0 25 |
| " 4 oz. | 0 17 | | 0 20 |
| Calcined | 0 65 | | 0 75 |
| Citrate gran. | 0 45 | | 0 50 |
| Mercury | 1 00 | | 1 15 |
| Bichlor | 1 00 | | — |
| Chloride | 1 25 | | — |
| C. Chalk | 0 60 | | — |
| Nit. Oxyd | 1 25 | | — |
| Morphia Acet | 3 65 | | 4 00 |
| Mur. | 3 65 | | 4 00 |
| Sulph | 3 80 | | 4 20 |
| Musk, pure grain oz | 22 00 | | — |
| Canton | 0 90 | | 1 20 |
| Oil, Amonds, sweet | 0 50 | | 0 52 |
| " bitter | 14 00 | | 15 00 |
| Aniseed | 4 25 | | 4 50 |
| Bergamot, super | 5 25 | | 5 50 |
| Carraway | 4 00 | | 4 20 |
| Cassia | 2 20 | | 2 50 |
| Castor, E. I | 0 15 | | 0 15 |
| Crystal | 0 22 | | 0 25 |
| Italian | 0 26 | | 0 28 |
| Citronella | 1 20 | | 1 50 |
| Cloves, Ang | 1 15 | | 1 30 |
| Cod Liver | 1 20 | | 1 50 |
| Croton | 2 00 | | 2 10 |
| Juniper Wood | 0 80 | | 1 00 |
| Berries | 6 00 | | 7 00 |
| Lavand, Ang oz. | 0 90 | | 1 00 |
| Exotic | 1 40 | | 1 60 |
| Lemon, super | 5 25 | | 5 50 |
| ord | 3 20 | | 3 40 |
| Orange | 5 25 | | 5 50 |
| Origanum | 0 65 | | 0 75 |
| Peppermint Ang | 13 00 | | 14 40 |
| " Amer | 3 25 | | 3 50 |
| Rose, Virgin | 6 50 | | 7 00 |
| " good | 5 00 | | 5 50 |
| Sassafras | 1 15 | | 1 40 |
| Wintergreen | 6 00 | | 6 50 |
| Wormwood, pure | 4 00 | | 6 50 |
| Ointment, blue | 0 76 | | 0 80 |
| Opium, Turkey | 6 50 | | 6 75 |
| pulv | 9 00 | | 10 00 |

| DRUGS, MEDICINES, &c.—*Cont'd* | $ c. | $ c |
|---|---|---|
| Orange Peel, opt. | 0 30 | 0 36 |
| " good | 0 12½ | 0 20 |
| Pill, Blue, Mass. | 0 80 | 0 85 |
| Potash, Bi.chrom | 0 23 | 0 27 |
| Bi-tart | 0 30 | 0 32 |
| Carbonate | 0 14 | 0 20 |
| Chlorate | 0 65 | 0 70 |
| Nitrate | 10 50 | 11 00 |
| Potassium, Bromide | 1 50 | 1 60 |
| Cyanide | 0 75 | 0 80 |
| Iodide | 11 50 | 11 75 |
| Sulphuret | 0 25 | 0 35 |
| Pepsin, Boudault's oz | 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 | — | 2 25 |
| Howard's | 2 35 | — |
| " 100 oz. case. | 2 35 | — |
| " 25 oz. tin. | 2 30 | — |
| Root, Colombo | 0 13 | 0 20 |
| Curcuma, grd | 0 12½ | 0 17 |
| Dandelion | 0 17 | 0 20 |
| Elecampane | 0 16 | 0 17 |
| Gentian | 0 10 | 0 12½ |
| " pulv | 0 15 | 0 20 |
| Hellebore, pulv | 0 17 | 0 20 |
| Ipecac, " | 2 20 | 2 30 |
| Jalap, Vera Cruz | 1 10 | 1 25 |
| " Tampico | 0 90 | 1 00 |
| Liquorice, select | 0 12 | 0 13 |
| " powdered | 0 15 | 0 20 |
| Mandrake " | 0 20 | 0 25 |
| Orris, " | 0 20 | 0 25 |
| Rhubarb, Turkey | 2 80 | 3 00 |
| " E. I | 1 10 | 1 20 |
| " " pulv | 1 20 | 1 30 |
| " " 2nd | 0 60 | 1 00 |
| " French | 0 75 | — |
| Sarsap., Hond | 0 40 | 0 45 |
| " Jam | 0 88 | 0 90 |
| Squills | 0 10 | 0 15½ |
| Senega | 1 35 | 1 50 |
| Spigelia | 0 40 | 0 45 |
| Sal. Epsom | 2 25 | 3 00 |
| Rochelle | 0 30 | 0 35 |
| Soda | 0 02½ | 0 03 |
| Seed, Apise | 0 13 | 0 16 |
| Canary | 0 05 | 0 06 |
| Cardamon | 3 50 | 2 — |
| Fe ugreek, g'd | 0 09 | 0 10 |
| Hemp | 0 06½ | — |
| Mustard, white | 0 14 | 0 16 |
| Saffron, American | 2 00 | 2 50 |
| Spanish | 16 00 | 17 00 |
| Santonine | 9 00 | 10 00 |
| Sago | 0 07½ | 0 09 |
| Silver, Nitrate Cash | 14 85 | 16 50 |
| Soap Castile, mottled | 0 10 | 0 14 |
| Soda Ash | 0 04 | 0 05 |
| Bicarb. Newcastle | 6 0 | 6 25 |
| " Howard's | 0 14 | 0 16 |
| Caustic | 0 05½ | 6 00 |
| Spirits Ammon., arom | 0 25 | 0 35 |
| Strychnine, Crystals | 2 20 | 2 50 |
| Sulphur, Precip | 0 10 | 0 12½ |
| Sublimed | 0 03½ | 0 05 |
| Roll | 0 03 | 0 04½ |
| Vinegar, Wine, pure | 0 55 | 0 60 |
| Verdigris | 0 35 | 0 40 |
| Wax, White, pure | 0 75 | 0 80 |
| Zinc. Chloride oz | 0 10 | 0 15 |
| Sulphate, pure | 0 10 | 0 15 |
| " common | 0 06 | 0 10 |
| DYESTUFFS. | | |
| Annatto | 0 35 @ | 0 60 |
| Analine, Magenta, cryst | 3 00 | 4 00 |
| " liquid | 2 00 | — |
| Argols, ground | 0 15 | 0 25 |
| Blue Vitrol, pure | 0 09 | 0 10 |
| Camwood | 0 06 | 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 | 0 95 | 1 10 |
| Extract | 0 28 | 0 35 |

| DYESTUFFS—*Continued.* | | |
|---|---|---|
| Japonica | 0 05½ | 0 06½ |
| Lacdye, powdered | 0 33 | 0 38 |
| Logwood | 0 02 | 0 03 |
| Logwood, Camp | 0 02 | 0 3½ |
| Extract | 0 10 | 0 14 |
| " 1 lb. bxs | 0 14 | — |
| " ½ lb. " | 0 15 | — |
| Madder, best Dutch | 0 16 | 0 17 |
| 2nd quality | 0 15 | 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 8½@ | 0 10 |
| Cassia | 0 38 | 0 40 |
| Cloves | 0 15 | 0 16 |
| Cayenne | 0 18 | 0 25 |
| Ginger, E. I | 0 12 | 0 14 |
| Jam | 0 20 | 0 39 |
| Mace | 1 75 | 1 75 |
| Mustard, com | 0 20 | 0 25 |
| Nutmegs | 1 05 | 1 10 |
| Pepper, Black | 0 22½ | 0 23 |
| White | 0 40 | 0 42 |
| 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 |
| Green, Brunswick | 0 07 | 0 10 |
| Chrome | 0 16 | 0 25 |
| Paris | 0 30 | 0 35 |
| Magnesia | 0 20 | 0 25 |
| Litharge | 0 07 | 0 09 |
| Pink, Rose | 0 12½ | 0 15 |
| Red Lead | 0 07 | 0 08 |
| Venetian | 0 02½ | 0 03½ |
| Sienna, B. & G | 0 10 | 0 15 |
| Umber | 0 07 | 0 10 |
| Vermillion, English | 1 20 | 1 25 |
| American | 0 25 | 0 35 |
| Whiting | 0 85 | 0 90 |
| White Lead, dry, gen | 0 08 | 0 09 |
| " " No. 1 | 0 07 | 0 08 |
| " " No. 2 | 0 05 | 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 30 | 0 37½ |
| Red, Venetian | 0 07 | 0 10 |
| Patent Dryers, 1 lb tins | 0 11 | 0 12 |
| Putty | 0 03¾ | 0 04½ |
| Yellow Ochre | 0 08 | 0 12 |
| White Lead, gen. 25 lb. 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 | 5 00 @ | 5 25 |
| Rosin, Strained | 5 00 | 5 25 |
| Clear, pale | 9 00 | 10 00 |
| Spirits Turpentine | 0 75 | 80 |
| Tar Wood | 5 00 | 5 25 |
| OILS. | | |
| Cod | 0 60 @ | 0 62 |
| Lard, extra | 0 95 | — |
| No. 1 | 0 90 | 0 95 |
| No. 2 | 0 85 | 0 90 |
| Linseed, Raw | 0 77½ | 0 80 |
| Boiled | 0 82½ | 0 85 |
| Olive, Common | 1 15 | 1 35 |
| Salad | 1 80 | 2 30 |
| " Pints, cases | 4 20 | 4 40 |
| " Quarts | 3 60 | 3 00 |
| Seal Oil, Pale | 0 80 | 0 80 |
| Straw | 0 75 | 0 80 |
| Sesame Salad | 1 30 | 1 35 |
| Sperm, genuine | 2 35 | 2 40 |
| Whale, refined | 0 90 | 0 95 |

# INDEX TO VOLUME V.