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Original and Selected Papers.

NOTES ON THE MEDICINAL PLANTS OF THE SCROPHULARIACEÆ.*

BY JOHN R. JACKSON, A.L.S.

This order, which is for the most part composed of herbaceous plants, is usually considered as comparatively unimportant in an economic point of view. With us this is to some extent true, the foxglove (*Digitalis purpurea*) being the only officinal plant of the group; but in other countries many species are esteemed as valuable medicines. The family is very widely distributed; its members are most abundant in temperate regions, but some are nevertheless found in other climates. Though many of the plants are acrid and bitter, their medicinal properties vary very much, as will be seen in the following consideration of the different species. Thus, in the foxglove, which is so well known that we need not describe the plant, the effects are remarkable for their varied operation, altering the frequency of the pulse, or enfeebling the action of the heart in various degrees in different persons.

In North America many of *Scrophulariæ* are used in medicine. *Scrophularia nodosa*, L., the figwort, a plant growing some two or three feet high, and found in woods and thickets over a good part of Europe, was at one time officinal in the Dublin Pharmacopœia, the leaves being used in the preparation of an ointment.

In some parts of Europe, as well as in America, they are occasionally used, as well as the roots, for making poultices for ulcers, tumours, burns, and cutaneous eruptions. The leaves have a rank,

*Pharmaceutical Journal and Transactions.

disagreeable smell and an acrid bitter taste, and the root has also a nauseous odour. The leaves of this plant were, at one time, supposed to have tonic, diaphoretic, and anthelmintic properties, and were advocated for the cure of scrofula. Farmers occasionally use a decoction of the leaves for curing scab in pigs.

The great mullein, *Verbascum Thapsus*, L., a well known British plant, in gravelly, sandy, or chalky soils, is common also in neglected fields and along roadsides in the United States. The thick woolly leaves have a mucilaginous, bitter taste, which is extracted by infusion in water. They are demulcent and emollient, and were at one time much valued not only in domestic practice but by practitioners in catarrh and diarrhœa. Sir James Smith testifies to their value in the following words: "A pint of cow's milk, with a handful of the leaves of this mullein boiled in it to half a pint, sweetened, strained, and taken at bed-time, is a pleasant emollient and nutritious medicine for allaying a cough or removing the pain and irritation of the piles." The leaves, steeped in hot water, are not unfrequently used by country people as poultices in hæmorrhoidal complaints. In Sweden and Norway a decoction of the leaves is given to cattle suffering from cough or pulmonary diseases. The flowers, it is said, when dried in the sun, give off a fatty substance, which is used in Alsace as a cataplasm. Porcher, in his "Resources of the Southern Fields and Forests," thinks that sufficient attention has not been paid to this plant as a medicine, and strongly recommends the desirability of making a careful analysis. In an enumeration of the uses to which the plant is put in North America, he states that the leaves steeped in hot water are applied externally as a feebly anodyne emollient dressing for sores, for the relief of headache and frontal pains, and are much used by the poorer classes. The leaves of this plant and the bark of the root of sassafras, in equal parts, boiled in water and concentrated, then mixed with powdered sassafras bark to form pills, are said to be valuable in the treatment of ague; and finally he refers to a report of "several cases, in which the paroxysms of intermittent fever were completely prevented by the administration of the warm infusion of the fresh root. Four ounces of the fresh root to one pint of water reduced one-half by boiling, of which two ounces were given every hour, commencing four hours previous to the expected chill."

Other species of *Verbascum* have been said to possess similar properties to the species just mentioned.

In the genus *Veronica*, which is well known in this country as including some of the prettiest of our native flowers, we find several species have been used at various times in medicine. The well known and beautiful little plant, the germander speedwell (*Veronica chamædrys*, L.), was at one time valuable amongst the old herb-doctors as a vulnerary, and Gerarde recommends the root as a specific in pestilent fevers.

The leaves of the common speedwell (*V. officinalis*, L.) are astringent and bitter, and were, even up to a comparatively recent date, not only used as a medicine in this country, but also as a substitute for tea. The plant grows in South Carolina, and, though not at present included in the United States Dispensatory as an officinal medicine, it is nevertheless, after careful examination, reported to contain "in the fresh juice and an extract from the herb, a bitter principle, soluble in alcohol, but scarcely so in ether; an acrid principle, red colouring matter, a variety of tannic acid, a crystallizable fatty acid, with malic, tartaric, citric, acetic, and lactic acids; a soft, dark, green, bitter resin and mannite." The Brooklime (*V. Beccabunga*, L.), also a British species and found in moist places, was formerly valued as an antiscobutic, the leaves and young tender stems being the parts used. In some parts the leaves are occasionally applied as a styptic to wounds, and when bruised are also applied to burns. Like the former, this species has been used in North American practice for purifying the blood.

Within the last few years, some attention has been given in America to the Virginian veronica or culversroot (*Veronica Virginica*, L.) It is a perennial plant, common in the United States in mountain valleys, and grows to a height of three or four feet. The root is the part used; it is bitter and nauseous, and imparts its active properties to boiling water. The fresh root is an active cathartic and emetic. A large teaspoonful of the root in a gill of boiling water, repeated every three hours, is said to be an efficient purgative, operating with mildness and certainty, and peculiarly adapted to typhoid and bilious fevers.

The *Gratia Dei*, so called in olden times on account of its active medicinal properties, and known also as the hedge hyssop by the herbalists, is the *Gratiola officinalis*, L. It is a perennial herb, common in moist places in the South of Europe, where it is used in dropsy, jaundice, scrofula, chronic hepatic affections, etc. In large doses it is poisonous. "According to Vauquelin, the purgative property depends upon a peculiar substance analogous to resin, but differing from it in being soluble in hot water. Dr. Whiting has announced the existence of veratria in it, which accounts for its active properties." Though not used in medicine in this country, it is said to have formed the chief ingredient in a once famous nostrum for gout, known as "eau médicinale." In some of the meadows of Switzerland the plant is said to be so abundant that it is dangerous to allow cattle to graze in them.

In a recent American list of "Pure Medicinal Preparations prepared *in vacuo*" at New Lebanon, occurs a preparation from *Chelone glabra*, L. The plant is known as the snake-head, or balmony, and grows in damp soils. Its action is described as follows in the catalogue above referred to: Tonic, cathartic, and anthelmintic, valuable in jaundice and hepatic diseases, likewise for the removal of worms.

Used as a tonic in small doses in dyspepsia, debility of the digestive organs, and during convalescence from febrile and inflammatory diseases. Fluid extract: dose, 1 dram. Chelonin: dose, 1 to 2 grains. Amongst the medicinal plants prepared by the society known as Shakers, the foliage and twigs of *Chelone glabra* are included.

In Kumaon and other parts of India, the roots of *Picrorrhiza kurroa*, Royle, are used in medicine as a tonic and antiperiodic, and are sold in the bazaars, where they occur in short brittle pieces, of a dark colour, somewhat irregular, about the thickness of a goose-quill, but tapering towards the extremities, and covered at this part with numerous small rootlets. They have a dark brown fracture when broken across, and an intensely bitter taste. This medicine is placed in the Indian Pharmacopœia amongst non-officinal articles, with the remark that "it would be desirable to have more information with regard to this root and its properties." Other Indian *Scrophulariaceæ* included in the Pharmacopœia, but not officinal, are *Herpestis Monniera*, H.B.K., and *Celsia Coromandeliana*, Vahl. The first of these is regarded by the Hindoos as a powerful diuretic and aperient; the juice of the leaves, in conjunction with petroleum, is used as a local application in rheumatism, and the juice of the leaves of the *Celsia* is said to have been given with advantage in acute and chronic dysentery.

Small quantities of the flowers of *Lyperia crocea*, Eckl., have occasionally been brought into this country from the Cape of Good Hope as a dye, but have hitherto failed to attract buyers. As imported, the flowers have somewhat the appearance and smell of saffron. Dr. Pappe, in his "Floræ Capensis Medicæ Prodromus," says:—"This bush deserves notice as a drug, and in all probability will, ere long, become an article of colonial export. It grows abundantly in some parts of the Eastern districts, whence it has found its way into the dispensary. The flowers, which are called *Geele bloemetjes*, closely resemble saffron in smell and taste; they possess similar medical properties, and as an antispasmodic, anodyne, and stimulant, ought to rank with the *Crocus sativus*. Here they have as yet been only used with success in the convulsions of children, but they deserve a more general trial. On account of the fine orange colour which they impart, they are in daily request among the Mohamedans, who use them for the purpose of dyeing their handkerchiefs. This drug has been observed to be sometimes adulterated by the admixture of other plants of the same genus, which are less efficacious."

Amongst plants of lesser utility belonging to the same order, it will suffice to mention the eyebright, *Euphrasia officinalis*, a decoction or infusion of which is still occasionally used in some parts as a wash for disorders of the eyes. It is astringent and slightly bitter. The yellow toad flax, *Linaria vulgaris*, is said to be purgative, and

was at one time used by the herb doctors for the cure of dropsy. *L. Cymbalaria*, some species of *Antirrhinum*, *Pedicularis palustris*, and *P. sylvatica*, have all been used by herbalists, but they are not of sufficient importance to call for further remark.

A PROCESS FOR THE ANALYSIS OF SOAP, BASED IN PART ON THAT OF MORFIT.*

BY A. SIENIER, JR.

I. *Substances to be Sought.*

Three essential constituents are found in all soaps, viz., a base, a fatty acid and water. Besides these, there is usually more or less glycerin, sometimes added intentionally, though generally due to imperfect separation; an excess of alkali and alkaline and earthy carbonates are commonly found, and sulphates and chlorides are of frequent occurrence. By the following method the fatty acids, save resin, are estimated together. The base is estimated as soda in the case of hard soaps, and as potash in that of soft. The water is determined by substracting the weight of all the substances found from the gross weight (it should not exceed 20 or 30 per cent).

Recapitulating, the substances to be sought are

Alkali, combined and free,	Carbonate,
Fatty acids (their fusing point to be found),	Resin,
Glycerin,	Salts and coloring matter,
	Water.

II. *Process.*

a. Average the soap fairly, and weigh out three portions—ten grams, ten grams and forty grams.

b. Digest ten grams with alcohol (five or six ounces), heat over water-bath, filter, wash the residue frequently with hot alcohol (the funnel being kept hot by apparatus for hot filtration). Treat residue as (1), and filtrate as (2).

(1). *Residue.* (Carbonates, other salts, coloring matter, &c.)

Dry in oven at 212° F. (Counterpoise filter) and weigh. Digest with hot water on filter and test solution volumetrically by a graduated normal solution of oxalic acid. Every c. c. used will indicate .053 grams of Na_2CO_3. Incidentally notice whether any precipitate of calcic oxalate occurs. Subtract the weight of sodic carbonate from the whole weight of residue insoluble in alcohol, and the remainder is the weight of *salts and foreign matter*. This can be further analyzed, if it is desired.

*American Journal of Pharmacy.

(2). *Filtrate.* (Alcoholic solution of soap and free alkali).

Pass through it a stream of carbonic gas, if precipitate forms continue, until precipitation ceases; filter; dissolve precipitate in water, and estimate with normal graduated solution of oxalic acid, as before. Every c. c. indicates .031 grams of *free soda*, or .047 of *free potash*, as the case may be. No precipitate indicates absence of free alkali.

The filtrate from the precipitate by carbonic acid, or, if no precipitate has occurred, then the alcoholic solution, after the addition of about one ounce of water, is evaporated on a water-bath until all the alcohol has escaped (a retort may be used, if it is desirable, to save the alcohol). To the aqueous solution is then added normal graduated solution of oxalic acid, until it is acid to litmus paper. Each c. c. required indicates .031 grams *combined soda*, or .047 of grams of *combined potash*.

A little sulphuric acid is now added, to separate the fatty acids more rapidly. Ten grams of beeswax—previously melted to free it from water—is added, and the whole placed on a water-bath until the fatty acids have mixed, forming a stratum on the top of the liquid. The mixture is then set aside to cool, and the cake, or solidified stratum, removed, dried and weighed. Subtract weight of beeswax, and the remainder is the weight of *fatty acids and resin*.

c. (1.) Take forty grams, dissolve in water, add dilute of H_2SO_4 until precipitation ceases, and set aside in a cool place (below 57° F). The fatty acids will rise to the top, when they may be dried and weighed.

(2.) Digest, with constant mixing, the fatty acids with a mixture of water, wilh nearly as much alcohol, until the subsident liquid (when the mixture has cooled and the fatty acids again solidified) ceases to be milky. Weigh fatty stratum again, and subtract from weight obtained above, and the result is, approximately, the weight of resin in forty grams. Divide for four, and the quotient is the weight of *resin* (approximate).

(3). Find *fusing point of fatty acids.*

d. Take ten grams, dissolve in alcohol, add alcoholic solution of sulphuric acid until precipitation ceases, and filter. Add baric carbonate and filter again. Evaporate until the alcohol is all expelled, and weigh sweet residue as *glycerin.*

e. Add together the amount found of carbonate, salts and foreign matter, alkali (free), alkali (combined), fatty acids, resin, glycerin, and the difference between that sum and ten grams is the weight of water.

THE CULTIVATION OF SUMACH IN AUSTRIA.*

The sumach shrub is found very generally throughout the southern countries of Europe, Spain, Italy, the South of France, and in the Austaian provinces of the Tyrol and Istria. Its leaves owe their value to their richness in tannin. The cultivation of the sumach is very simple, and the cost is but trifling; but unfortunately the country people seem to devote continually less and less attention to it. Instead of collecting the leaves in a somewhat rational manner, it is the general custom to pull up the whole shrub by the roots merely to save a little trouble, and thus future crops are annihilated.

In the Tyrol the sumach harvest is confined to the districts of Roveredo and Bozen. In Roveredo particularly the quantity produced is somewhat remarkable. The plant there grows wild. The peasants gather it in the months of July, August, and September. It is then dried, the leaves separated from the stems cleaned, and sold to the millers. There are special sumach mills, but they would seem to grind something besides sumach, as the price of the ground sumach is less per hundred-weight than that of the leaves. For a long time the former has been worth from 2 florins to 2 florins 75, while the leaves vary from 3 florins 45 to 4 florins 45.

Previous to the reckless destruction of the plant by the careless method of collecting, the sumach harvest of Roveredo reached about 50,000 cwts.; but it is now much smaller. There are now at work 18 sumach mills, which together produce about 6,000 bales of 250 pounds each, or about 15,000 cwts. (German weight). In Bozen, the production reaches about 10,700 cwts., valued at 38,500 florins.

In Istria again, the sumach harvest is not unimportant, especially in the neighborhoods of Bagliano and Galliguano. During the season from 3,000 to 4,000 persons are employed in it. From this district some 7,000 or 8,000 cwts. of sumach leaves are exported, chiefly by way of Trieste.

In respect to the proportion of tannin it contains, sumach surpasses nutgalls, gambia, &c. Considering its valuable properties, it is not perhaps so much used as it should be. The bulk of the production is taken in Germany and Switzerland, but considerable quantities are exported from Trieste to England and America. In the year 1873 England imported from Austria alone over 16,000 cwts.

* Chemist & Druggist.

CALCINED MAGNESIA IN MIXTURES.*

BY HANS M. WILDER.

Some time ago I received the two following prescriptions:

I. Magnes. ustæ ..... ℥ ij.
Aquæ destil ..... ℥ ij.
M.

II. Magnes. ustæ,
Bals. copaivæ .....ãã ℥ i.
Aq. camphoræ ..... ℥ v.
Syrup. tolu ..... ℥ i.
Spr. æth. nitr ..... ℥ ij.
M.

As both prescriptions were written very plainly, and no objections otherwise could be made to them, I dispensed them to the letter, although I knew that both mixtures would become solid in a short time. I was hereby induced to examine whether it would not be possible to keep them in a liquid state, at least for a few days. An observation of Mr. Gobley's (*Amer. Jour. Pharm.*, xvi., 1845, p. 273), that the presence of sugar would retard, if not altogether prevent, solidification, led me to try the addition of sugar also.

I consequently made eight mixtures:

1. One part light calcined magnesia and eight of water.
2. The same, but submitted to boiling.
3. One of light calcined magnesia and eight of simple syrup.
4. One of light calcined magnesia, six of water, and two of syrup.
5. The same, submitted to boiling.
6. One of light calcined magnesia, four of water, and four of syrup.

Further:

7. One heavy calcined magnesia (Powers & Weightman), and eight of water.
8. The same submitted to boiling.

After a quarter of an hour, 1 was jelly-like; 2, somewhat stiffer (by the addition of one drachm of water it could be shaken); 3 could be freely shaken and poured out; 4, somewhat between 2 and 3; 5, just the same; 6, stiff jelly.

After twenty-four hours, 1, 2, 4, and 5 were quite stiff; addition of a little water to 1 made it quite fluid; the consistence of 2, 4, and 5 was not altered; 3 and 6 decidedly hard.

The two heavy magnesia mixtures behaved like any mixture of water and an insoluble powder, remaining at the bottom of the vial, but very easily shaken up.

* From the Druggists' Circular.

The results I arrived at are: 1st, To mix light calcined magnesia with *not less* than twelve parts of water; or, where the amount of liquid cannot be increased, to use the heavy calcined magnesia; 2nd, Boiling does not make the mixture more fluid; 3rd, Sugar does not prevent hardening, except on increasing the quantity of liquid, and is then not necessary.

ON THE PRESERVATION OF LEECHES.*

BY GEO. H. BURNHAM.

Many pharmacists have, no doubt, found the preservation of leeches a matter of great annoyance and loss.

The more common usage is to place them in earthen jars with perforated covers, and containing a quantity of earth; the leeches being looked to occasionally to ascertain their sanitary condition.

I have also known the druggist to place old water-logged sticks, with a few pebbles, in a proper vessel, forming a sort of artificial pond. The leeches free themselves from the slime which collects upon them by drawing themselves through the débris at the bottom of the aquarium.

The following method for the preservation of leeches, has, in my experience, been most successful. Half-a-dozen "tenpenny" nails are placed at the bottom of a glass jar holding about eight pints —upon them is placed a piece of very porous sponge.

The jar being filled with water, we have an aquarium in which two dozen leeches will live for many months without a single loss by death; a piece of lawn of about one hundred meshes to the square inch should be secured by a strong rubber band to the top of the jar in order to prevent the escape of the leeches.

When the water is changed, the sponge should be thoroughly cleansed, to remove a quantity of slimy matter from the cells.

It is said that the presence of metallic iron in water prevents it from becoming putrid. This influence is very marked in water in which leeches are preserved, in consequence of which, the change of the water becomes unnecessary except after long intervals.

The jar containing the leeches should be kept at a comparatively even temperature from 55° to 65° F., excluded from sunlight, and a quantity of fresh water added every five or six days.

*From the Laboratory.

SPANISH FLIES.*

BY A VILLAGE PHARMACIST.

Only two insects are now admitted into our Pharmacopœia, namely, Spanish Fly, (*Cantharis vesicatoria*), and the Cochineal insect (*Coccus Cacti*). The name Spanish Fly is not exactly correct; strictly speaking, it is a beetle, and even "Spanish Beetle" would be scarcely accurate, for although it was formerly procured almost exclusively from Spain and Italy, it is now chiefly obtained from St. Petersburg and Sicily,—not because we are unable to secure a supply from Spain, but because the Russian insect is much more valuable. It would be difficult, perhaps, to detect a sample from Russia if placed by the side of a Spanish specimen, so far as external appearance is concerned, but it is a stubborn fact that the drug brokers show strong preference for the parcels from St. Petersburg to those from the south of Europe. The insect is found, though sparingly, in the south of France, and English invalids, who spend the summer at Montpelier, often find a specimen when passing through the stoney and rough olive yards. It may surprise some readers to hear that it is also an English insect; nevertheless that is the fact, although it is so rare and is met with so seldom this it cannot be be made serviceable. Suffolk is a paradise to the enthusiastic entomologist, for he there meets with many exceedingly rare specimens for his cabinet, and in the summer and autumn of the year 1837 an immense quantity of cantharides appeared at Colchester. They are said to have literally swarmed on the ash trees in that neighborhood, so much so that these trees were repeatedly beaten with long poles to rid them of the insect, which threatened to strip them of their foliage and thus destroy the trees. In the same year they abounded at Ipswich, as well as in many other parts of the country, and they were also reported in the Isle of Wight. A physician in the latter locality, evidently awake to his own interests, collected a quantity and used them in the place of the exotic specimens. We are not aware that they have ever been observed in any quantity since 1837, but it is well to bear this strange entomological freak in memory, so as to make it useful should it occur again.

If the Spanish fly is looked at carefully it will be seen to bear a considerable resemblance, externally, to our common beetles, in the shape and formation of the wing cases, etc. It is placed in the large order called *Coleoptera* (beetle family), and in the family *Cantharidæ:* in this family every species, more or less, possesses blistering properties.

The generic name applied to this beetle is very old: it was

* Chemist & Druggist.

known to the ancients, in whose writings we first become conversant with it, although much obscurity hangs over it, and it is difficult to tell which family is intended. Pliny says, "Cantharides is produced by a small grub, found more particularly in the spongy excrescences which grow in the stem of the dog rose, and still more abundantly in the ash." He is certainly in error about the insect on the rose bush, but the one on the ash tree agrees with the place where the true *Cantharis* is generally found. Our English children call the large red sponge-like excrescence on the dog-rose (*Rosa canina*) "Robin redbreasts and pincushions."

Royle states that the Greeks used a blistering insect, but it was distinguished by having yellowish bands running transversely across the *elytra* (wing cases): this is not the true *Cantharis*, but a species of *Mylabris*, a Coleopterous insect closely alied to *Cantharis*. The officinal blistering fly has had almost as many generic names as a Spanish grandee. It was called *Meloe* by Linnæus, *Lytta* by Fabricius: the name by which it is at present recognized by pharmacists (*Cantharis*) was given by Geoffrey.

Their presence, when living, is said to be easily detected by the strong fœtid odor which they exhale; so offensive is this odor in hot sultry weather that public walks and gardens are frequently deserted until they have disappeared. Little more than a week makes up the short span of their existence in the perfect or winged state.

If slightly touched they feign death and fall to the earth: this habit is not unknown to the collectors. The odor exhaled from them is not only offensive, but it is stated to affect the eyes and cause ophthalmia in persons who collect them. In early morning the beetles are in a semi-torpid state, therefore it is the custom to spread cloths on the ground beneath the trees, and, having covered their faces and hands, proceed to beat the branches with long poles: they are then easily detached and fall on the cloths. To destroy them they are placed in large hair sieves over boiling vinegar: the vapor speedily destroys life. Afterwards they are dried before being exported by exposing them on hurdles covered with paper, in a shady place.

The American pharmacists use two other species of *Cantharis*, which appear to possess powerful vesicant properties, namely, *C. vittata*, and *C. cinerea*. The former insect is commonly called the "Potato Fly:" it feeds on leguminous plants, such as peas and beans, and is described as having longitudinal yellow bands on the wing cases. In America it is esteemed in preference to *C. vesicatoria*.

Cantharides are frequently purchased in this country by the retail chemist in a powdered state. They are not unfrequently adulterated with other insects before being exported. We have heard many complaints about powdered Cantharides not keeping long in stock. Sometimes it becomes mouldy and almost inert:

this is caused by being damped with water before being ground. Sometimes it is infested with an insect, but this never need be the case if the chemist would take care when receiving any new stock to place small lumps of camphor in the jars, and to keep it in tightly stoppered bottles.

The active principle—Cantharidine, $C_{10}H_6O_4$ —is a crystalline substance, first discovered and named by Robiquet. It is white and glistening, and has a flat plate-like appearance: it easily fuses into a yellowish-looking oil, but volatilizes at a high temperature. It is remarkable that both water and spirit will dissolve it from the Cantharides, but if first prepared or isolated it is then insoluble in either menstruum. It is an unpleasant chemical to experiment with, because of its injurious effects upon the eyes, causing great irritation and weakness. In a pure form so small a quantity as the $\frac{1}{100}$th part of a grain will raise a large blister on the human skin. Besides the active principle, a fatty matter, a greenish oil, and several other distinct products have been discovered in Cantharides. It may be observed that all the family (*Cantharidæ*) contain both the green fatty or oily matter and Cantharidine in a larger or smaller quantity.

There are other beetles, of the genus *Meloe*, closely allied to the true *Cantharis*, known as "Oil Beetles," which also possess blistering properties. According to one of our entomological writers, these are sluggish, wingless beetles, having but small elytra. They are found in spring slowly crawling over buttercups, violets, etc., on heaths and commons. When handled they emit, from their legs principally, a peculiar greasy substance (yellow oil), from which they have acquired their popular name of oil beetles. This oily substance has been used for rheumatism and dropsy, and has also had the reputation of being a specific in hydrophobia. Dr. Leach states that Frederick the Great purchased the nostrum from the discoverer for a valuable consideration, as a specific against the bite of a mad dog, and in 1781 it was inserted in Sec. iii. p. 25 of the "Disp. Boruss. Brand." According to this publication, 25 of these insects preserved in honey, with two drachms of powdered black ebony, one drachm of Virginia snake root, one of lead filing, and 25 of fungus sorbi, are reduced to a very fine powder, which, with two ounces of theriaca of Venice (and if needful with a little elder root), is formed into a electuary. This is one amongst the hundreds of other so-called specifics against hydrophobia.

MODE OF MAKING AN EMULSION.

Dr. E. Saunders, (*Peninsular Journal of Medicine*) gives the following useful and practical suggestions on the method of making emulsions:—A few hints on the above subject may not be unacceptable to some unfortunate who has not had the privilege of being taught this important branch of our art thoroughly. The first thing to do is to see that the mucilage is fresh and sweet; for although good emulsions can be made with sour mucilage, they require more labor, and spoil more quickly. A broad, flat pestle will be found to serve better than a narrow, round-faced one. Be sure that the mortar is clean and free from grease. Then put in the mortar, first, a small quantity of the mucilage and rub it round the mortar, so as to prevent any of the oil from adhering to the side. Add a little of the oil—about half the quantity of oil that you have used mucilage—and rub from the centre; the emulsion will begin to form immediately. When the first quantities are thoroughly emulsified, add first more mucilage and again half the quantity of oil, and make into a perfect emulsion. Continue in this way until the oil is emulsified, adding water between each addition of oil after the right quantity of mucilage has been added. Great care must be taken to keep the mucilage and water in excess of the oil used, or a thick mass will be formed, which it will be impossible to mix with water. The object in making an emulsion is to have the particles of oil separated by water, but if the oil is in excess, the opposite is liable to take place; the particles of water are separated by the oil, and it is then impossible to form a good mixture, and the shortest way to do will be to throw out the mass and start again with fresh materials. Some people are in the habit of mixing the oil with powdered gum arabic, but it is impossible in that way to obtain a permanent emulsion, or even one in which the oil is sufficiently divided as to render the globules of oil invisible to the naked eye. A still worse mode is to put the oil and mucilage together in a bottle and shake them. A perfect emulsion should be as white as milk, if made with olive oil, or any light yellow or colorless oil; should mix readily with water in any proportion, without showing any signs of separating on standing, and should leave the mortar, or any vessel it may be put in, in such a condition that simple rinsing with cold water will clean the vessel, without leaving any traces of oil having been in it. The amount of mucilage to be used to a given quantity of oil varies. Half an ounce of mucilage is sufficient for two ounces of castor-oil, or balsam of copaiba. Oil of turpentine, and the other light volatile oils, require rather more mucilage and longer trituration. If any syrup or sugar be ordered, it should be added after diluting the emulsion with all the water allowable. The same precaution should be taken with tinctures or any alcoholic preparations. The fact that mucilage of

acacia is precipitated by alcohol should always be borne in mind. It is difficult to give an unvarying rule as to the amount of tinctures admissible in one emulsion, as the amount of gum and oil varies so much, but as a rule it is unsafe to put more than one ounce of a tincture made with dilute alcohol in a four-ounce emulsion, and tinctures made with stronger alcohol in proportion. Emulsions, if well made, are very handsome mixtures, and very permanent. The writer has some emulsions of castor-oil made four weeks ago, and of balsam copaiba made three weeks ago, both of which are as fresh and nice as the day they were made, and neither of which show the least sign of separation.

ANTIDOTES TO POISONING BY STRYCHNINE.*

Professor Ranieri Bellini, after conducting a long series of experiments on poisoning by strychnia and its salts, arrives at the opinion that the best antidotes are tannic acid and tannin, chlorine, and the tinctures of iodine and bromine. Chlorine, he maintains, attacks the strychnia even when it is diffused through the system; for he found that in rabbits poisoned with the sulphate of the alkaloid, on being made to inhale chlorine gas in such quantity as was not sufficient in itself to kill, the convulsions were retarded, and were milder when they occurred; death was also less rapid. The author further observed that when strychnia was exhibited with pyrogallic acid, the convulsions were retarded for the space of half an hour, in comparison with other experiments in which the alkaloid was given by itself. Professor Bellini believes that this arrest in symptoms is not dependent on the acid acting chemically on the strychnia, but only through the astringent effects produced by the acid on the mucous membrane of the stomach, whereby the absorption of the poison is rendered difficult. The same author, dwelling on the frog-test for strychnia, asserts that this test is not to be trusted, inasmuch as other poisons produce the tetanic symptoms, although in a less degree. He adds, in speaking of the effects of the antidotes to which reference has been made, that he trusts his results will have a bearing, not only on the treatment of strychnia tetanus, but on traumatic and idiopathic tetanic disease.

*Phila. Med. and Surg. Rep.

SANDAL-WOOD.

The sandal-wood of commerce is the product of various trees belonging to the genus *Santalum*, and the species called *Santalum album* for a long time furnished the principal supply. Being a hard, close-grained, and ornamental wood, it is used for some descriptions of cabinet-work, and various carved ornamental and useful articles, such as writing-desks, work-boxes, card-cases, etc., are made of it. But its chief characteristic consists in the remarkable smell of the wood, which it owes to the presence of a peculiar volatile oil, extensively used by the natives of India as a perfume. This also has caused it to be largely used as an incense to burn in the temples of China.

In course of time, sandal-wood was discovered to be abundant in some of the South Sea Islands, where it is the product of several species of *Santalum*, different from the long-known Indian one. There are about ten species of the genus, which are chiefly restricted to the East Indies, Australia, and Oceanica.

The Indian species are *Santalum album* and *S. myrtifolium*. The former is a small tree from twenty to twenty-five feet high, which is found on the border of Wynaad, in the Peninsula, and in Mysore. The exports of the wood from Madras are large to Bombay, Bengal, and the Persian Gulf. The tree grows in the islands of Sandal, Timor, Rotti, Savii, Sumba, Bali, and in the eastern part of Java, in the arid soil of the lower regions. The wood, which, in its color and texture, resembles boxwood, is much sought for as an article of commerce by the Chinese, who use the sawdust for making rings and pastiles for burning, as during combustion it exhales an agreeable odor.

In Europe sandal-wood is chiefly used for carving and turning. In the India Museum, Whitehall, various specimens of the ornamental application of sandal-wood in the East may be seen in boxes inlaid with ivory, a handsome carved sandal-wood table from Bombay, and other objects.

The Australian species of sandal-wood are believed to be derived from *Santalum lanceolatum*, *oblongatum*, *obtusifolium*, *ovatum*, and *venosum*. The tree is found in Queensland and Western Australia. At the London International Exhibition of 1862, a fine log of sandal-wood, weighing 4½ cwt., was shown from Blackwood River, Western Australia; and another three feet six inches long by eleven inches diameter, from York. The Australian sandal-wood is of an inferior quality as regards odor.

In 1849 as much as 1,204 tons of sandal-wood, valued at £10,711, were shipped from Western Australia. The merchants bought it for shipment at £6 to £6 10s. a ton. The sandal trees of any size within a radius of 150 miles of Perth, have now been cut down, and little can be obtained.

It is probable that there are several distinct species of the tree in the South Sea Islands which have yet to be botanically determined. The tree is not found on all the islands of the Pacific; its headquarters would appear to be among those of the south-western portion, including New Caledonia, the Loyalty Islands, New Hebrides, Espirito Santo, and some others. In the Fiji Islands, which have produced several thousand tons within the last thirty years, the tree has also become scarce. It is only the central portion of the tree which produces the scented yellow wood constituting the sandal-wood of commerce. The trunk and larger branches are cut into lengths of from three to six feet, and the whole of the bark and outer white wood are chipped off with the axe—an operation technically called "cleaning." Thus a log one foot in diameter is reduced to a billet only from four to six inches thick. The quality of the wood depends on the quantity of the oil contained in it, as indicated by the smell when freshly cut or burned. The old trees produce the best, and in them that part of the wood near the root is the most prized. A handful of the shavings of the wood will prevent moths from attacking cloths of any description; and the same means may be used to keep away insects from specimens of natural history. Owing to a similar strong aromatic odor, furniture made of the fragrant timber of the bastard sandal-wood of Australia (*Erimophila Mitchelii*, Bentham) may be free from the attacks of insects. The wood is hard, of a brown color, nicely waved, and beautifully grained. It will turn out handsome veneers for the cabinet-maker.

S. Austro-Caledonicum, of New Caledonia, furnishes a superior kind of sandal-wood to that of other countries, owing to the strength and fineness of its odor. It is to be regretted, however, that this tree is being ruthlessly destroyed in the island, as the wood is of such great use in perfumery. Scarcely anything but the stumps and roots left from former trees can now be utilized. An essential oil, distilled in England and France from sandal-wood, fetches £3 per pound. The powdered wood for filling satchets and other uses is sold at 1s. the pound. The Pacific species of sandal-wood are *S. ellipticum* and *S. Freycinetianum* (Gaudichaud), which are met with in the Sandwich Islands. The latter species is found in the high mountainous ranges of Tahiti; but the wood is of inferior quality, as it is not odoriferous, or only becomes so by age. The wood of *Myoporum tenuifolium* (Foster) is sometimes used as a substitute for sandal-wood; the fragrance of the fresh wood is very pleasant, but it soon loses its odor, after being kept some time.

PHYSIC IN THE SEVENTEENTH CENTURY.

A few months ago we published an interesting extract from a lecture delivered by Prof. Redwood, in which the state of pharmacy during the seventeenth century was very pleasantly depicted. The following extract, relating to the state of medicine, during a corresponding period, appears in a communication made to the *Chemist & Druggist* by Mr. G. P. Wright, of London. He says, "A short time since I came across an old work on medicine—'A Guide to the Practical Physician,' published in 1684 by Theophilus Bourt, M.D., a man much thought of in his day and a shining light in his profession. As some of his ideas on disease and their treatment are peculiar, and differ from those of the present time, I have ventured to transcribe a few of them, thinking that they may prove not uninteresting, and perchance amusing to some of your numerous readers. When it is borne in mind that the work alluded to was published less than two hundred years ago, it is an obvious and satisfactorily striking fact that since that time the Scientia Medicinæ has advanced with giant strides, far surpassing its rate of progress from the time of Galen, fourteen hundred years before this book was compiled.

I will commence by divulging for the reader's edification what Dr. Bourt is pleased to term a 'singular secret' for the cure of quinsey. 'If the swelling in the neck will not soften (!) burn an owl in an open pot to powder, a little of which you may blow into the throat, when the swelling will soften to admiration and break.' 'A purple thread with which a viper has been strangled' is also highly recommended, but, unfortunately for posterity, he omits to state what is to be done with it, hence this discovery, doubtless a valuable one, cannot be turned to account.

He mentions the case of an unfortunate young man who was the victim of melancholy superadded to quinsey, but whether consequent on that or on the anticipation of the medical treatment we are not enlightened; he was, however, cured by a plaster on the head and 'an issue in each leg to conquer the melancholick humours.' A somewhat singular cure for melancholy, but satisfactory in its result.

The thrush is still prevalent among children. 'It is an approved remedy, especially when it is malignant and epidemick, to hold a living frog in the child's mouth, that it may draw out the malignity, which, when it is weary and dead, hold another, and so on.' For how long this treatment is to be pursued, or how many frogs are to be immolated, is not mentioned, but this might have been an intentional oversight on the doctor's part, that no blame might be attached to the remedy, but only to the non-persistence in the application of it. I should almost fancy that in his childhood

he had been subject to the thrush and to the frog, for he adds:—'This is a filthy remedy.'

"When any one complains that he never comes to his meat with an appetite, it is advisable to make him fast till he have a stomach, for starving breeds appetite." There is a wholesome truth for pampered epicures! Complain no more of loss of appetite, but adopt the remedy!

Speaking of depraved, or too great appetite, he says:—'Antiquity found not a more perfect remedy for this eating evil than bread and the smell thereof.' Here our ancestors had the better of us; for though it is well known to professional men that bread, when eaten, will arrest hunger, it is certainly a wrinkle to learn that the *smell* thereof will answer the like purpose. This information might be of service to some of our parochial authorities, but I would suggest, as the secret is of some age and may have lost power by keeping, that any board of guardians feeling inclined to economise in this way should experiment on themselves before bringing the diet into general use.

Should this regimen be productive of gout, 'take of pure spring water 10 lbs., the wood of the mastick tree 3 ozs., let them boil, and drink of this water at dinner and supper time;' or, if this fail, a 'cabbage diet' may perchance prove beneficial, for it is strongly recommended by several physicians of that period.

"Should anything get into the ear, let a live lizzard, or one but newly dead, be applied with his head to the ear and bound there for three hours. You will find the thing, whatever it be, sticking to the lizzard's head when you remove it." This, however, does not answer with 'fleas,' for we are told:—'When one has a flea in his ear a little ball of dog's hair must be applied, and the flea will presently creep into the hair, out of the sympathy which it hath with dogs.'

'An ointment of green frogs is very good for cancer, also the broth of craw-fish, boiled in asses' milk, drunk five days successively and this course repeated seven times. 'The head of a puppy a month old, dried, powdered, and mixed with honey, and laid on an ulcerous cancer is said to kill it.' Not a bad way of disposing of 'young puppies!' For the relief of headache I do not know but that the remedy is worse than the disease:—'A young man had conflicted with a violent headache, and he was cured by boring his skull five times, only his head (the membranes being cooled and thickened by opening) was a *little dull*.' Surely, considering the violence of the headache *and the remedy*, this was hardly to be wondered at. Another patient, a woman, was 'racked with a bitter pain, creeping, with a manifest sense of heat, sometimes from her foot to her head, and sometimes from her head to her great toe, into which, when it was come down, a cupping-glass was clapt to it, to get out that volatile spirit which daily ranged the whole body with so swift a course.'

We have heard of evil spirits being exorcised, but never before, I think, of their being caught in cupping-glasses. Dr. Bourt, however, caught the 'volatile spirit,' and cured the woman.

Cholera was cured, 'to the great admiration of all men,' by giving 'four scruples of blood-stone in pomegranate wine,' and apoplexy 'by holding frequently in the mouth a piece of roasted nutmeg, for this corrects the cold temperament of the brain!'

Now, I daresay but few of your readers know the real cause of toothache. 'The teeth ache because of a flatulent spirit enclosed about the roots of them.' For this evil, 'take the leg or thigh of a toad, cleanse it from the flesh, rub the aching teeth with the bone, and the pain ceases in a moment,' or, if it is preferred to have the tooth removed, no dentist need be consulted. 'A tooth taken from a dead man's jaws, if you touch a rotten tooth often with the roots of it, will cause the tooth to fall out piecemeal in a few days." This is something like 'painless extraction.'

Those subject to fits are informed that 'the skin of a wolf, taken off that part which sticks to the spine, made into a girdle about two inches wide, and wound round the loins is beneficial;' and 'a certain illustrious lady testifies that upon the most sure experiment the falling sickness is cured by a powder made of quails' eggs, taken in two scruple doses.' So recommended, who can doubt its efficacy. Here is a caution to fevered nobility:—'A nobleman being taken with a violent burning fever, asked an old woman that was by to bring him a pail full of cold water, into which he dipped his hands, and, when he found that the raging of the heat was allayed and extinguished by it, he held them in longer; at length, when he drew them out, a livid blackness had disfigured both of them, with privation of sense.' The hydropathic treatment was too many for him—he died, leaving the memory of his untimely fate to act as a warning to posterity.

All diseases appear to have been originally attributed to the agency of evil spirits (which hypothesis the metaphor of Holy Writ tends to support) and the vanquishing of these spirits was the work of the chirurgeon of early times; hence the amulets, exorcisms, &c., prescribed by ancient writers. As education advanced, this idea gradually lost ground, and disease came to be regarded as an infliction of Divine Power, and to be assuaged by human remedies, but we find Dr. Bourt, in the seventeenth century, holding opinions little removed from those of Hippocrates, for he says:—'We must know that there are three sorts of diseases which are held to come from witchcraft. The first is in no way any witchcraft, but when the devil observes any one will be taken with a disease, as he is well skilled in natural things, he persuades witches and wizzards that if they will but do what he orders them the man will fall into such a disease, into which, notwithstanding, he would have fallen had the witches done no such thing, and the meantime the witches think the

disease was caused by them. Secondly, there are other diseases which, indeed, are not caused by the devil, but by natural causes, while he changes the natural constitutions and corrupts and alters the humors. Thirdly, there are diseases which are simply caused by the devil without the mediation of natural humours. As for the first sort of these diseases, it is most manifest and without doubt that it may be cured by natural remedies, but the third cannot be cured by natural remedies, because natural things can have no influence upon the devil, who is a spirit.' He substitutes one potent devil for the several minor and special powers, and, though he believes in witchcraft, he does not attempt to deal with it, for the reason he assigns. One finds in his writings, however, less of superstition than credulity. Because a patient, under a course of stewed cockroaches, gets well, he takes the credit of the cure for his concoction, not allowing anything to nature and other kindred influences at work. His error was that too common one of confounding coincidences with necessary consequences—

> "'If the patient died, he said 'twas Nature did it;
> If the patient lived, the doctor took the credit.'

"I have quoted but a few out of many hundreds of prescriptions and cases given by Dr. Bourt, having merely selected those which I thought would amuse, and, at the same time, illustrate the difference between the medicine of our day and that of two hundred years ago."

THE SOURCES OF CAMPHOR.

The following extract is taken from a paper on the camphor trade which was published in a late number of the *Chemist & Druggist:*

The camphor of commerce is obtained from the camphor laurel *Camphora officinarum*, which grows in China, principally near Chinchew, in the province of Fokien, in the Island of Formosa, and in Japan. There is another description, which is highly prized by the Chinese for its supposed medicinal qualities, that is found in a solid state in the trees growing upon the islands of Borneo and Sumatra, and throughout the Malayan Archipelago. The Arabs were acquainted with the properties of this article. which they called kaphoor, but it does not appear to have entered into the traffic of the Romans or the Greeks. Both kinds appear to have been used by the Hindoos before the arrival of the Europeans in India, and the prices of the different sorts, reduced to present Indian weights and moneys, will be as they existed in Malabar and Calicut at the beginning of the sixteenth century. There are many plants, such as

the cinnamon tree, which supply a kind of camphor; another source is the *Blumea Grandis*, one of the most abundant weeds throughout the Tenessarim provinces. It grows six or eight feet high, with leaves which, when bruised, emit a strong odor of camphor. There is also an imitation in Japan, but it can be easily distinguished from the genuine. The camphor tree has been successfully cultivated in Europe, and there is mention of one at Malmaison over twenty feet high by six inches in diameter. In Spain camphor has been manufactured from several *Labiatæ*, and has been prepared artificially by passing a current of muriatic acid gas through turpentine; this variety has not, however, been used in medicine.

The camphor of commerce is derived from a shrub which much resembles the ordinary laurel in appearance, and several specimens may be seen growing at the royal gardens of Kew. It is an evergreen, and grows to a considerable size, and admits a camphoraceous odor when bruised. The leaves are shining and of a bright green. The wood which is white and fragrant, is much prized by the Chinese for carpentry work, since the scent keeps off the operations of white ants and other insect. There are several methods adopted in different countries for obtaining the crude camphor, viz., the original condition in which it is brought to Europe. These consist chiefly in separating the root, trunk and branches, which, being cut into chips, are introduced into a still with water, and heat applied, when the steam generated carries off the camphor in vapor. These vapors rise, and, passing through rice straw, with which the head of the still is filled, the camphor solidifies and is deposited round the straw in minute grains or particles, somewhat about the size of coarse sugar or sand, which by aggregation form grayish crumbling cakes, with all the properties of purified camphor. These cakes of impure camphor are refined by being introduced into a large globular glass vessel in quantities of about 10 lbs., are reheated, when first the water rises in steam and is allowed to escape at a small aperture; and then, after this aperture is closed, the camphor sublimes and resolidifies in the interior upper part of the flask as a semi-transparent cake, leaving all impurities behind. The flasks are then cooled and broken by throwing water upon them, and the camphor is taken out and sent to market. The glass globes employed are called by the Italian name *bomboles*, the sublimation of camphor having been first practiced at Venice, where it was held as a monopoly, but it is now done in all the large cities of Europe. The process, which is completed is about forty-eight hours, requires considerable attention and experience. There are two kinds of unrefined or rude camphor known in commerce:—1. Dutch or Japan camphor, also called tub camphor, from the circumstance of its being brought from Batavia in tubs covered by matting, each surrounded by a second tub, secured on the outside by hoops of twisted cane. Each tub contains from 1 cwt. to 1¼ cwt. or more. It con-

sists of pinkish grains, which by their mutual adhesion form lumps. It is of larger grain, clearer, and sublimes at a lower temperature than the second variety, which is known in commerce as, 2, ordinary crude camphor, China camphor, and Formosa camphor. This is imported from Singapore, Bombay, etc., in square chests lined with lead foil, and containing 1¼ to 1½ cwt. It is chiefly produced in the Island of Formosa, and is conveyed in junks to the Chinese ports of Shanghai and Canton, whence the foreign markets are supplied.

SYRUP OF BROMIDE OF IRON.*

BY M. H. STILES, M.P.S.

I noticed in a recent number of the Journal a formula for syrup of bromide of iron, taken from a French paper on the subject. About six weeks ago I had occasion to prepare some of the syrup for a prescription. This was made to contain three grains of bromide of iron in each fl. ʒj., which, from inquiries, I have since made, is the strength usually recommended in this country.

The syrup made by M. Prince is about one seventh this strength, and is scarcely in accordance with English ideas of what such a preparation should be. The following is the process I adopted:—

Take of—

Thin Iron Wire, free from rust....	½ oz.
Bromine	320 grs.
Distilled Water	1 oz.

Put the wire and water in an 8-oz. flask, the lower portion of which is placed in a vessel of cold water, add the bromine gradually, corking the flask after each addition, and taking care that one portion is nearly neutralized before another is poured in. When all the bromine has been added, heat the flask gently until the brown color disappears, and filter the solution, whilst hot, through paper; wash the wire with a little distilled water, filter the washings, add them to the filtrate, and make the resulting liquid measure fl. ʒij. Mix this with fl. ʒxvj. of syrup. One fluid-drachm contains three grains of $FeBr_2$.

If the flask be not kept cool, and the process controled in the manner directed, the action becomes so violent that a considerable portion of the bromine is lost.

Bromide of iron is also given in combination with bromide of quinine or bromide of strychnia, or with both, the amount of these in fl. ʒj of the syrup being one grain and $\frac{1}{32}$ grain respectively.

* Pharmaceutical Journal and Transactions.

PHOSPHORUS PILLS.

BY H. P. REYNOLDS.

I recently had occasion to prepare the phosphoretted resin of Mr. A. W. Gerrard, whose process was published in your July number, page 124. In my judgment his method is rather troublesome and dangerous for ordinary dispensing purposes, and I therefore venture to offer a formula, which, after several trials, I have found quite satisfactory.

For forty pills containing one-twentieth grain phosphorus each, take of—

Phosphorus	2 grains.
Clean yellow wax	1 drachm.
Powdered sugar	1 scruple.
Balsam Peru	sufficient.

Place the wax in a small vial (a homœopathic vial answers a good purpose) and melt in the flame of a spirit-lamp. Drop the phosphorus into the melted wax, cork the vial, and agitate till it is entirely dissolved, applying heat sufficient only to keep the wax fluid. Now pour the whole into a porcelain mortar, and while the mass is yet plastic, although nearly solidified, rub in the sugar. When quite cool, the mass is too hard to roll well, but the addition of a few drops of balsam Peru (which I selected as being a solvent of wax, and at the same time for its fragrance) will bring it to any desired consistence.

This process yields a slightly light-yellow pill, softening readily at blood-heat, and which, owing to the presence of the sugar, would seem easily soluble, or at least miscible in the juices of the stomach. The proportions may of course be varied to yield forth a mass containing any required percentage of phosphorus.

As melted wax retains its fluidity at a temperature (say about 145°) not very greatly above the melting point of phosphorus (108°), there is much less likelihood of volatilizing the latter than by the process of Mr. Gerrard, which requires a heat of over 300°. Besides, the dispenser incurs no risk of burnt fingers, and the whole operation occupies but little more time than is required to make a similar number of pills of any ordinary character.

*From the Druggists' Circular.

NEW METHOD OF COLORING METALS.

Metals may be colored quickly and cheaply by forming on their surface a coating of a thin film of a sulphide. In five minutes brass articles may be coated with any color, varying from gold to copper-red, then to carmine, dark red, and from light aniline blue to blue-white, like sulphide of lead, and at last a reddish white, according to the thickness of the coat, which depends on the length of time the metal remains in the solution used. The colors possess a very good lustre, and if the articles to be colored have been thoroughly cleaned by means of acids and alkalies, they adhere so firmly that they may be operated upon by the polishing steel. To prepare the solution, dissolve one and one-half ounces of hyposulphite of soda in one pound of water, and add one and one-half ounces of acetate of lead dissolved in one-half pound of water. When this clear solution is heated to from 190° to 210° Fahrenheit, it decomposes slowly, and precipitates sulphide of lead in brown flakes. If metal is now present, a part of the sulphide of lead is deposited thereon, and according to the thickness of the deposited sulphide of lead the above colors are produced. To produce an even coloring, the articles must be evenly heated. Iron treated with this solution takes a steel-blue color; zinc, a brown color; in the case of copper objects the first gold color does not appear; lead and zinc are entirely indifferent. If, instead of the acetate of lead, an equal weight of sulphuric acid is added to the hyposulphite of soda, and the process carried on as before, the brass is covered with a very beautiful red, which is followed by a green (which is not in the first-mentioned scale of colors), and changes finally to a splendid brown, with green and red iris-glitter. This last is a very durable coating, and may find special attention in manufactures, especially as some of the others are not very permanent. Very beautiful marble designs can be produced by using a lead solution thickened with gum tragacanth on brass which has been heated to 210° Fahrenheit, and is afterward treated by the usual solution of sulphide of lead. The solution may be used several times.—*Iron.*

AMERICAN SODA.

One hundred and eighteen thousand tons of crude soda at fifty dollars per ton is reported as about the annual importation of this salt, used, as our readers know, in the manufacture of soap, glass, and other articles of general consumption. This will convey some idea of the importance of the great and wonderful natural deposits of carbonate of soda, which have been found the West, six hundred

miles beyond Omaha, and forty miles north of the Union Pacific Railway. Deposits of soda are here found in all stages and conditions. In some cases, alkaline lakes are encountered, the water saturated with the carbonate. One especial deposit, of many acres in extent, consists of a crust of carbonate of soda more than six feet deep, under which is a strong alkaline liquid. The great deposit lies there, waiting for people to come and take it away. In quantity there is enough to supply the wants of the world for an age. In quality it is superior to the crude article now manufactured, as it contains twenty per cent more of carbonate of soda; while in cost it is very cheap, as it may be delivered in New York, when the railway to the deposits is opened, for thirty dollars per ton. The soda trade is evidently destined to change. Instead of employing vessels to bring the product here, we shall soon fill them with improved cargoes of the article to go abroad.—*Exchange.*

COSMETIC SURGERY.—A few week ago we made a note on the value of benzine in removing pimples, comedones, etc. Ether may also be used for the same purpose. The pimples should be washed several times, till the sebum is dissolved, and subsequently a solution of alum employed as a toilet lotion. The *Druggist* says, "For the benefit of young persons afflicted with freckles, it may be stated that powdered nitre, moistened with water, applied to the face night and morning, will soon remove all traces of them." Dr. James Nicholls writes to the *Lancet*, strongly recommending the use of carbolic acid in removing nævi, moles, and other congenital discolorations of skin. He has tried it in several aggravated cases with most successful results. For boils, Dr. Hall, in the Cincinnati *Lancet and Observer*, recommends the following:—

R.	Tr. arnica flowers	3j.
	Tannic acid.....	3ss.
	Gum acacia pulv.	3ss. M.

It should be used as soon as prepared. The inflamed surface, and a little beyond all round, should be painted with the medicine every fifteen minutes, or as fast as it dries, till a good thick coating covers the part.—*Phila. Med. & Surg. Rep.*

PERPETUAL PASTE.—Dissolve a teaspoonful of alum in a quart of water. When cold, stir in as much flour as will give it the consistency of thick cream, being particular to beat up all the lumps; stir in as much powdered resin as will lay on a dime, and throw in half a dozen cloves to give it a pleasant odor. Have on the fire a teacup of boiling water, pour the flour mixture into it, stirring well at the time. In a few minutes it will be of the consistency of mush. Pour it into an earthen or china vessel; let it cool; lay a cover on, and put in a cool place. When needed for use take out a portion and soften it with warm water. Paste thus made will last twelve months. It is better than gum, as it does not gloss the paper, and can be written on.—*Pharm. Gazette.*

Editorial.

THE PATENTING OF MEDICAL COMPOUNDS.

The facility with which patents may be obtained, either in this country, or across the line, must have been remarked by every one having even the slightest experience in matters of this kind. That a man may thus easily protect his discovery or invention is laudable enough, but when one person claims and secures that which is the legitimate property of another, or possesses himself of that which rightfully belongs to the community in general, it becomes quite another thing. However closely the patent office authorities may look after their caveats, their specifications and their fees, they certainly do not exercise the same discrimination or judgment in regard to the subjects on which patents are granted. That this is true in regard to all descriptions of patents we are not in a position to say, but that such is the case, as far as medicinal compounds, and other mixtures of drugs and chemicals are concerned, we can positively affirm. Of how many patents Ransome's process for artificial stone has been made the subject, it would puzzle us to determine, but, at a rough guess, one might say that, at least once a month, some enterprising individual takes it into his head to try his hand at a fresh patent. Sometimes the original process is taken in all its entirety ; sometimes the order of the ingredients is inverted, or some trifling difference is made in the proportions. To come nearer to the subject in which we are more immediately interested, we might instance the hundreds of patents for infallible liniments and embrocations which have taken their origin in the *linimentum saponis*, or in some unimportant modification of it. Of how many "Reliefs," "Pain Killers," or what not, has a mixture of myrrh, camphor, capsicum, and alcohol, been made the basis ; and each of these has been protected by patent. This state of things is the more surprising when we reflect that these innumerable compounds—especially those of a medicinal character—are all stated to produce a certain effect ; to affirm this, with any regard to truth, is, we know an impossibility. We can only conclude that, in this line, it is possible to patent anything.

That a reform is needed is very evident, and that its necessity is recognized by some of those in authority is a very pleasing fact. In some remarks upon this subject the New York *Nation* says :—

"Dr. Dyrenfurth, the newly-appointed principal examiner in "the class of chemistry, in the Patent Office, has recently rejected "an application for letters-patent for a 'medical compound,' sub- "stantially upon the grounds that a mere mechanical mixture, or "assemblage without chemical union, of a number of medical ingre- "dients, possessing well-known properties, is neither such inven- "tion nor discovery of a new and useful composition of matter as is "contemplated by the law, its preparation involving at most only "the exercise of a skill common, in varying degree, to all persons "having a knowledge of disease and of the curative properties of "drugs and medicines ; that, if patents may issue upon this and "kindred applications, it follows, such skill being exercised when- "ever a physician writes an original prescription, that thousands of "patentable inventions of this class are made daily, a fatal *reductio* "*ad absurdum*, and that the creation of monopolies restraining "others from the exercise of such skill is in contravention of public "policy and human welfare. It might have been further urged that, "in the present stage of therapeutic knowledge, there is no mode of "determining with reasonable certainty whether a given medical "agent (with rare exceptions) does really produce the result claimed "or exercise the functions ascribed, matters usually susceptible of "demonstration in other classes of patents. The omission, how- "ever, loses importance in view of the grave doubt that the decision "of the examiner will be ultimately sustained. Probably the only "remedy for the reproach of governmental aid in the patent-medi- "cine business must be sought through a change in the law, a "change which, by excluding medicines from the category of "patentable matters, will bring the United States patent laws in "harmony with those of the large majority of other countries."

The remarks of our contemporary receive our heartiest endorsation, and we would add that they are as applicable to Canada as the United States. Our law is, in this respect, precisely similar. If patent medicines require any protection at all, it is only as far as their names are concerned. Any after reputation which they might acquire—and to this we grant they would be justly entitled—would be legally and amply provided by the law relating to trade marks.

DEATH OF MR. WILLIAM PARKINSON.—Most of our readers will in all probability have learned of the melancholy circumstances connected with the death of Mr. Parkinson, one of the travellers lately employed by Messrs. Lyman Brothers & Co., of this city. Deceased was a native of Yorkshire, England, where he first became acquainted with the details of the drug business. After the expiration of the term of his indentures he came to Canada, and was shortly afterwards engaged by the firm with which he remained until the time of his death. He was, during the past nine years, employed in various capacities, and so satisfactorily did he perform the duties incumbent upon him, that some two or three years ago he was selected as one of the travellers of the house. While thus engaged he made many friends throughout the country, and we believe was universally liked by those with whom he came in contact. Of a singularly inoffensive, amiable, and good-natured disposition, he was, however, too easily led, as the unhappy sequel has so clearly revealed. A few days previous to his decease, he had returned from a somewhat extended tour, and it may be presumed had met with some of his companions with whom he celebrated the event in too convivial a manner. Feeling the necessity of putting a stop to any further developments of this spirit, and prompted doubtless by a good, though fatal resolution, he procured by prescription, from a druggist near at hand, a mixture containing chloral hydrate. This, he thought—and so expressed it—would set him "straight." Too nervous, or too careless, to rightly estimate the correct dose, he poured into a tumbler a quantity of the mixture equal to 150 or 160 grains of chloral hydrate, and having swallowed it was quickly under its influence. Two physicians were soon after in attendance, but, in ten or fifteen minutes the unhappy gentleman was pronounced dead. Some trifling attempt at artificial respiration was attempted, but this was soon abandoned, and no other means of resuscitation were tried. An inquest was held on the body, and after the hearing of considerable evidence, the jury at once came to the conclusion that the case was one of accidental and unintentional poisoning. The remains of Mr. Parkinson were attended by the Odd Fellows—of which fraternity deceased was a late member—and were followed to the St. James' Cemetery by a large number of sincerely sorrowing friends.

THE RECIPROCITY TREATY AND AMERICAN MANUFACTURING CHEMISTS.

It appears that the manufacturing chemists of the United States do not look with much favour upon Canadian advances in the direction of reciprocity. We learn from a New York contemporary that at a meeting of the Manufacturing Chemists' Association—representing an employed capital of over $50,000,000—the proposed treaty was denounced in the most uncompromising manner. It was decided that a determined opposition should be offered by the Association, and, to this end, a number of resolutions were passed, of which the following are the most important :—

"Resolved, That a knowledge of the foregoing treaty has filled us with alarm at the consequences which are likely to result to the productive industries of the country.

"Resolved,that this alarm arises not alone from the fear of Canadian competition, but as well from the apprehension that Canada will, by the provisions of this treaty, become the great entrepot for the reception of goods from all parts of the world to be legally smuggled into the United States.

"Resolved, That this treaty inaugurates Free Trade in its most obnoxious form, and if the principle is followed up and applied in both countries it may involve the necessity of collecting the entire revenues of the Government, by internal taxation.

"Resolved, That as well from the foregoing consideration as from the fact that the negotiation of such treaties by the Executive Department and the Senate, involving the control over the collection of revenues from foreign imports, is manifestedly an interference with one of the highest prerogatives of the House of Representatives, we are uncompromisingly opposed to it and all others of like character.

"Resolved, That these resolutions be printed, and that copies of them be given to each member of this association, sufficient for his distribution to the Senators of his State at Washington, accompanied by such earnest individual protests as he may desire to make against the ratification of said treaty."

CORRECTON.—A printer's error, which was marked but not corrected in proof, occurred in the title of the paper on first page of last No. This should have read "On Some Preparations of Erythroxylon Coca."

Editorial Summary.

PURIFIED CHLORATE OF POTASSIUM.—Mr. H. W. Lindenmeyer (*Pharmacist and Chem. Rec.*) alludes to the impurities to be found in commercial chlorate, and proposes recrystallization as furnishing purified salt suitable for solution in dispensing. To do this, take of commercial chlorate of potassium any weighed quantity, dissolve this in double its weight of boiling distilled water, and filter while hot through paper. As soon as the solution begins to cool, the crystallization will commence, and proceed until fifteen ounces out of every sixteen ounces of chlorate of potassium employed will have crystallized out of the solution. The salt is then collected upon a glass funnel (the neck of which has been loosely closed by a glass stopper), allowed to drain, and dried between folds of bibulous paper. The product thus obtained will have all the appearance of the so-called "French" article, and of such purity as that sold as purified. The mother solution, which holds 1-16 of its weight of the salt in solution, can easily be utilized for the preparation of gargles, etc., where a small quantity of chloride of potassium, which is usually the principal impurity of commercial chlorate of potassium, is not positively objectionable.

TEST FOR MORPHIA IN THE PRESENCE OF QUINIA.—The *Journal of Applied Chemistry* gives for this purpose a test which is based on the reaction of iodic acid with morphia:—When sulphate of quinine is shaken with 20 parts of water, any morphine present dissolves, while most of the quinine remains in solution. The latter is filtered out, and to the filtrate is added a few drops of iodic acid, when the solution will be colored yellow by free iodine, if morphine is present. On shaking with chloroform the latter takes up the iodine and is colored a violet red. If no morphine is present the liquid remains colorless. Hydrochlorate of quinine is more soluble in water than the sulphate, and it is only possible to take up the iodine by chloroform when more morphine than quinine is present, as in the other case the iodine seems to combine with the quinine. The yellow color which appears immediately when morphine is present is the only test for it when the quantity is small.

POISONING BY GELSEMIUM SEMPERVIRENS.—Dr. Boutelle, (*Boston Med. and Surg. Jour.*) reports a case of poisoning by a teaspoonful

of fluid extract of gelsemium. About half an hour after swallowing the poison the patient complained of a difficulty in breathing, and this was so intensified as to give rise to the most painful efforts in order to recover breath. After staggering and reeling as one intoxicated he soon became totally unconscious, at which period the physician was in attendance. Cold water was dashed upon the face and chest, and attempts at artificial respiration were kept up for half an hour. Brandy and water and carbonate of ammonia were administered, and mustard was applied to the spine. Despite this, the respiration and pulse grew weaker, until the expiration of about four hours, when the patient expired. A *post-mortem* showed the blood to be very fluid, dark coloured, and having no tendency to coagulate, heart, lungs, spleen and kidneys normal, liver dark colored and containing much fluid blood. Internal surface of stomach much congested. Brain rather pale; internal substance of cerebral lobes dotted with small red points, but these were not sufficiently large or numerous to be considered of much pathological importance.

Apomorphia as an Expectorant and Emetic.—A formula for the administration of apomorphia, as an expectorant in bronchitis, etc., has been suggested by M. Jurasz, *(Gazette Hebdomadaire)*, one sixth of a grain of chloride of apomorphia is dissolved in three and a half ounces of distilled water, acidulated with five drops of hydrochloric acid. To this is added half an ounce of syrup. The dose is a table spoonful, which may be repeated every two hours. This preparation has been found very serviceable in the cases in which it has been employed; more especially for promoting the expectoration of the tenacious and tough phlegm common to bronchitis. M. Garville finds that one sixth of a grain of apomorphia, dissolved in twenty grains of water, and administered hypodermically, will produce copious emesis within five minutes. This form of administration will be found very serviceable in cases of poisoning where emetics cannot be swallowed.

Preservation of Mucilage of Acacia.—The officinal preparation is prone to change, especially under the influence of a summer temperature. In order to obviate the necessity of frequently renewing the stock, Messrs. Archer, (*Am. Jour. Pharm.*) suggest the use of tolu water instead of the water ordered in the formula. Mucilage, so prepared, has been found to keep for several months. The authors consider that tolu prevents change in liquids in much the same manner as benzoin prevents the oxidation of fats; and it is said that other substances, besides tolu, as benzoin, storax, balsam of Peru, might answer the purpose equally well but tolu is

open to less objection than any of the others. The tolu water is prepared by rubbing up two drachms of a saturated tincture of tolu with four drachms of carbonate of magnesium; adding two wine pints of water, and filtering. The flavor of tolu is not generally objectionable in mixtures.

PRESENCE OF LEAD IN CITRIC ACID.—Mr. F. A. Reichardt (*Druggists' Circular,*) found in four samples of citric acid, obtained in New York, a notable proportion of lead. This was detected by the yellow precipitate produced by the addition of iodide of potassium to a solution of the suspected acid, and also by the black precipitate afforded by sulphuretted hydrogen. The contents of four bottles, said to contain citrate of magnesia, were also examined, and, in three of them, lead was detected. The fourth sample was free from lead, but this was attributable to the fact that tartaric acid had been substituted for citric acid, and the compound was, therefore, merely tartrate of magnesia.

LIQUID GLUE.—A writer in the *Comptes Rendus* describes a method of making an article, which remains liquid in bulk, and is still very tenacious when dry. Reduced to English weight the proportions of the ingredients are about as follows:—Two and a quarter pounds of glue are dissolved in thirty-six fluid ounces of water, in a glazed vessel set in a water-bath. Seven ounces, by weight, of nitric acid, sp. gr. 1.32 are gradually added, stirring well after each addition. This produces effervescence, hyponitrous acid being evolved. When all the acid has been added, the operation is finished and the product may be set aside to cool.

EXPLOSIVE MIXTURE OF GLYCERIN AND CHROMIC ACID.—A mixture of these two substances is sometimes ordered in certain affections, and Dr. Mascarel takes the opportunity of observing that a vigorous trituration of the ingredients is often attended by explosion. This may be avoided by adding the glycerine slowly—drop by drop—and performing the trituration in the gentlest manner.

PRESENCE OF PERCHLORIDE OF MERCURY IN SACCHARATED CALOMEL.—Dr. Polk, (*Phila. Medical Times,*) corroborates the statement of Vulpius, that "when calomel is mixed in powder with

white sugar, or calcined magnesia, or bicarbonate of soda, corrosive sublimate is formed in twenty-four hours." Dr. Polk found the administration of ten grains of saccharated calomel, which had been prepared a month previous, was attended with poisonous effects. Examination revealed the fact that a considerable quantity of perchloride of mercury was contained in the remainder of the sample.

Granulation of Chloride of Potassium.—The danger attendant on the pulverization of chlorate of potassium, may be entirely avoided by pursuing the method recommended by Gawalovski. A hot, saturated solution of chlorate is prepared, and into this is dropped a plate of glass. When the glass is withdrawn it is soon covered by a layer of the granular salt, which is removed and the operation repeated, until a sufficient quantity is obtained.

Tooth Wash.—A writer in the Philadelphia *Medical and Surgical Reporter*, recommends *liquor calcis* as a dentrifice and mouth-wash. Another correspondent proposes, for the same purpose, a solution of bicarbonate of soda. The strength is not indicated.

BOOKS AND PAMPHLETS.

Archives of Dermatology.—A new quarterly, bearing this title, has been published by the Messrs. Putnam, of New York. Dr. Bulkley, a well-known laborer in the department of dermatology, assumes the editorial management, and is assisted by a staff of eminent collaborators. From the contents and style of the first number we feel confident that this attempt to establish an American journal of skin and general diseases will be successful, and that the Archives will receive the support so strongly foreshadowed by its initial number.

Tinnitus Aurium, *or Noises in the Ears.* By Lawrence Turnbull, M.D., Physician to the Department of Diseases of the Eye and Ear, Howard Hospital, Philadelphia.

The substance of this pamphlet appeared in the Philadelphia *Medical Times*, and has been conveniently reproduced in its present form by Messrs. Lippincott & Co.

ON DEAF-MUTISM and the method of educating the Deaf and Dumb. By Laurence Turnbull, M.D., Physician to the department of the Eye and Ear of Howard Hospital, Philadelphia, pp. 8; extracted from the transactions of the Medical Society of the State of Pennsylvania.

Students' Department.

Answers to the following questions must be sent in so as to be received by the editor before the twentieth of each month. Competitors must be engaged in the drug business, not being proprietors or having passed examination, and must furnish, with the answers sent, their real names and addresses. It is trusted that all answers sent will be the *bona fide* work of competitors, and that no assistance will be sought except such as is afforded by books.

Answers requiring calculation and involving fractions must be given in decimals, which need not be carried beyond the third place.

The following books are offered this month as prizes:—

FIRST PRIZES.

Parrish's Pharmacy.
Garrod's Materia Medica.
Gray's Manual of Botany.
Fownes' Chemistry.

SECOND PRIZES.

Gray's First Lessons in Botany.
U. S. Pharmacopœia, 1873.
Wittstein's Practical Pharmaceutical Chemistry.
Roscoe's Chemistry.

Successful competitors may select from any of the above works, and, on notifying the Editor, the book selected will be forwarded by post.

QUESTIONS.

1. *Chemistry.*—How much potassium chlorate will be required to produce sufficient oxygen to fill a gas bag of five imperial gallons capacity? (Temperature 20° C.; Pressure 760 mm.).

2. *Pharmacy.*—How would you ascertain the amount of alcohol present in a tincture of unknown composition?

3. *Materia Medica.*—Classify, according to geographical sources, the vegetable materia medica of the British Pharmacopœia. The following divisions may be made: 1. Russia and Prussia; 2. Great Britain; 3. Switzerland and Hungary; 4. Islands and Shores of Mediterranean; 5. Levant; 6. Asia Minor; 7. Arabia; 8. Islands of Western Asia; 9. Persia; 10. Thibet and Turkey; 11. China; 12. India; 13. Ceylon; 14. Siam; 15. Islands of Southern Asia; 16. North Africa; 17. East Africa; 18. South Africa; 19. West Africa; 20. Canada; 21. Northern United States; 22. Southern United States; 23. Mexico; 24. Central America; 25. West Indies and Islands of Central America; 26. Brazil; 27. Peru; 28. New Granada; 29. North eastern Central America; 30. Tropical Central America. (No attention need be paid as to whether plants are indigenous or cultivated.)

4. *Botany.*—State the botanical sources of the medicinal gums and resins.

Dispensing.—How should the following prescription be dispensed? And what are the reactions that occur when the two ingredients are triturated together?

Recipe. Zinci Sulph ℥j.
Acet Plumb ℥j.
Fiat pulvis.

Directions.—Let the patient put the powder into a quart of soft water, and use the solution as a lotion.

Prescriptions.—Correct the errors in the following prescription, point out in what they consist, and give a translation:

Recipe Spiritus Ætheris Nitrici, guttæ viginta.
Liquor Ammonia Acetatis, drachmas duas.
Tinctura Aconiti, unciam cum semisse.
Aqua Menthæ Piperitæ, ad unciam duam.
Fiat misturam salinam, cujus capiat cochleare parvum nocte maneque.

LAST MONTH'S QUESTIONS.

1. *Hydrarg. Subchloridum.*—The reactions are as follows:—

$$\underset{296}{HgSO_4} + \underset{200}{Hg} = \underset{496}{Hg_2SO_4}. \qquad \underset{496}{Hg_2SO_4} + \underset{117}{2NaCl} = \underset{471.}{2HgCl} + Na_2SO_4.$$

If 471 parts Hg Cl require 296 Hg SO_4, 10 parts Hg Cl will require 6·284 parts.—*Ans.*

If 471 parts Hg Cl require 200 Hg, 10 parts Hg Cl will require 4·246 parts.—*Ans.*

If 471 parts Hg Cl require 117 Na Cl, 10 parts Hg Cl will require 2·484 parts.—*Ans.*

Hydrarg. Perchloridum.—The reaction is as follows:—

$$\underset{296}{Hg\,SO_4} + \underset{117}{2\,Na\,Cl} = \underset{271.}{Hg\,Cl_2} + Na_2\,SO_4.$$

If 271 Hg Cl_2 require 296 Hg SO_4, 10 parts Hg Cl_2 will require 10·922 parts.—*Ans.*

If 271 Hg Cl_2 require 117 Na Cl, 10 parts Hg Cl_2 will require 4·317 parts.—*Ans.*

2. In the preparation of *Ung. Hydrarg. Nitratis*, a weaker acid than that designated in the pharmacopœial directions cannot, with equal advantage, be substituted, unless attention is paid to certain conditions, as temperature, etc. Although the quantity of the weaker acid be increased so as to equal the prescribed amount of real acid, the effect will not be the same, the water present having a great effect on the violence or activity of the reaction, and also affecting, to some extent, the character and stability of the resulting product. In the formula we are directed to use 12 fluid ounces of acid of sp. gr. 1·42, which contains 70 per cent. HNO_3. 12 fluid ounces of this density would weigh 17·040 ounces, avoirdupois. If 17·040 ounces of 70 per cent. acid are required, how many ounces of acid of 49·281 per cent. (sp. gr. 1·31) will equal this quantity.

As 49·281 : 70·000 : : 17·040 : 24·204.—*Ans.*

5. The three ingredients should be pulverized separately, and the chlorate of potassa should be mixed with water during pulverization. They should then be mixed on a sheet of paper with a wooden spatula or feather. These precautions are rendered advisable from the extreme facility with which chlorate of potassa parts with its oxygen even at ordinary temperatures. With sulphur it forms sulphuric acid, which unites with the potash, forming sulphate of potash, while the chlorine and the excess of oxygen are given off. It is probable that a small quanity of chloride of sulphur is also formed. With carbon there are produced carbonic acid, which is given off, and chloride of potassium which remains. The detonation is caused by the oxygen which is liberated driving away the atmospheric air, but being again instantly condensed, (that is, combining with the combustible body) the air rushes back into its former place. Sugar and tannic acid would come under the latter explanations since they contain large proportions of carbon. These mixtures do not invariably detonate. Something seems to depend on the heat and dryness of the atmosphere. They are nevertheless dangerous.—(E. G.)

6. Take—

Of powdered Ipecacuanha Root, ... 10 grs.
Of Tartrate of Antimony and Potassa... 1 gr.
Of Distilled water ..... 1½ fl. oz.

Mix. Let a draught be made, to be taken at nine o'clock in the morning. When vomiting comes on, let the patient drink, at different times, some wine-glassfuls of infusion of camomile flowers; vomiting being finished, let the patient take a sudorific powder,

In the question as published in the Journal, there was an error, the printer having put repetis instead of repetitis.

Answer to D. B. M., St. Catharines.—If D. B. M. will look at the table of drops on page 1740 of the thirteenth edition of the U. S. Dispensatory, a table with which every dispenser should be familiar, he will find that there are 120 drops (not minims) of Tinct. Opii to the fluidrachm, consequently if eight drachms were put into the mixture the patient would get sixty drops at a dose, whilst the question called for thirty drops. We may mention that we have heard of serious trouble having occurred through an inexperienced dispenser making just the same oversight that D. B. M. has made, and therefore published the question.—(E. G.)

ORDER OF MERIT.

Maximum Nnmber of Marks = 70.

No.	NAME.	Chemistry.	Pharmacy.	Materia Medica.	Botany.	Dispensing.	Prescriptions.	Extra.	Total.
1	J. G. Beamish, Cobourg ..	9	8	10	10	10.0	10.0	10	67.0
2	G. Maclagan, Lindsay	10	10	10	10	9.0	7.0	10	66.0
3	R. McCormick, Ottawa ..	10	9	8	10	9.0	9.0	10	65.0
4	R. M. Thurtell, Guelph....	10	8	10	10	1.0	7.0	10	56.0
5	J. A. Perry, Simcoe	5	2	8	9	9.0	9.0	10	52.0
6	J. Parker, Bowmanville ..	8	5	8	9	7.0	9.0	5	51.0
7	D. B. Mills, St. Catharines	5	5	9	10	7.0	5.0	10	51.0
8	J. W, Jeffrey, Welland....	5	4	10	10	7.0	4.0	10	50.0
9	A. B. Welford, Woodstock.	5	2	10	10	9.0	4.0	8	48.0
10	H. W. Hobson, Welland..	5	6	8	10	0.0	9.0	8	46.0
11	C. McMichael, Hamilton..	4	5	10	10	2.0	7.0	6	44.0
12	T. Edmanson, Bradford ..	5	2	7	10	4.0	7.0	8	43.0
13	R. H. Revel, Woodstock..	2	2	10	6	8.0	7.0	4	39.0
14	J. McKinnon, Strathroy ..	4	2	8	9	6.0	4.0	6	39.0
15	A. R. F., Toronto	3	4	9	9	4.0	4.0	5	38.0
16	S. Wilson, Kingston.....	6	4	7	8	1.0	8.0	2	36.0
17	W. W. Stephen.....	6	2	7	8	5.0	6.0	2	36.0
18	C. Cook, Kincardine.....	5	1	7	8	3.0	6.0	5	35.0
19	A. Werner, Elmira	2	..	9	8	0.0	10.0	5	34.0
20	G. Graydon, St. Catharines	5	..	3	8	9.0	6.0	3	34.0
21	R. E. Scott, Sarnia	4	2	8	7	0.0	2.0	9	32.0
22	M. J W., Omemee	..	..	10	10	..	6.0	6	32.0
23	"Potassium".....	..	1	6	6	8.0	7.0	4	32.0
24	J. L. Payne, New Hamburg	..	1	7	5	7.0	0.0	..	20.0

The First Prize is awarded to J. G. BEAMISH, Cobourg; the Second Prize to G. MACLAGAN, Lindsay.

Varieties.

CURIOUS BRAIN STIMULANT.—It is related that Goethe called on Schiller one day, and not finding him at home, seated himself at his friends's table to note down various matters. He was soon seized with a strange indisposition, from which he nearly fainted, but finding it proceeded from a dreadful odor, he traced it to a drawer, which he found full of decayed apples. He stepped out of the room to inhale the fresh air, when he met the wife of Schiller, who said her husband kept the drawer always filled with rotten apples, because the scent was so beneficial to him that he could not think or work without it.

ALBUMEN IN URINE.—M. Esbach proposes picric acid as an agent for the detection of albumen in urine. A few grammes of a hot concentrated solution of picric acid are poured into a test tube, and into this the urine to be analysed is allowed to fall drop by drop. The albumen immediately appears in milky clouds, which show well in the fine clear yellow of the picric acid. If the acid be poured into the urine, the same result does not follow, for, says the author, the excess of acid redissolves the precipitate as soon as it is formed. M. Esbach recommends the addition of 50 c.c. of acetic acid to 950 c.c. of a saturated solution of picric acid, so that part of the latter may not be neutralised if the urine be alkaline.—*Chemist & Druggist.*

Registrar's Notices.

LIST OF RENEWALS.—CONTINUED.

Bell, Joseph, Meaford.
Bredin, R. G., Belleville.
Conklin, W. P., Chatham.
Covey, E. J., Stayner.
Jeffrey, A., Toronto.
Roper, John, Caledonia.
Shapter, J. T., Toronto.
Walford, J. H., Renfrew.
Warren, John, Brooklin.

NEW REGISTRATIONS.

Casselman, C., Winchester.
Musgrove, J. A., Toronto.
Fulford, G. T., Brockville.
Shepherd, Thos. T., Ottawa.
Tyler, Wm. H., Warkworth.

NOTICE TO MEMBERS WHO HAVE NOT SENT IN THE REGISTRATION FEE FOR 1874.

Seven months having elapsed since the Annual Registration Fee of Four Dollars should have been paid, in accordance with the requirements of the Pharmacy Act of 1871, it becomes the duty of the Registrar to request those Druggists who have not complied with the same, to do so at once, or legal proceedings will have to be taken for the recovery of the same.

GEO. HODGETTS, Registrar.

DRUGS, MEDICINES, &c.	$ c.	$ c.
Acid, Acetic, fort	0 14 @	0 15
Benzoic, pure	0 22	0 2,
Citric	1 40	1 50
Muriatic	0 05	0 06
Nitric	0 11½	0 15
Oxalic	0 22	0 23
Sulphuric	0 03¾	0 07
Tartaric, pulv	0 50	0 50
Ammon, carb. casks	0 23	0 24
" jars	0 23	0 24
Liquor, 880	0 25	0 28
Muriate	0 14	0 15
Nitrate	0 45	0 60
Æther, Acetic	0 45	0 50
Nitrous	0 40	0 42
Sulphuric	0 50	0 50
Antim. Crude, pulv	0 15	0 17
Tart "	0 55	0 65
Alcohol, 95 per ct.....Cash	2 02	2 05
Arrowroot, Jamaica	0 18	0 22
Bermuda	0 50	0 65
Alum	0 02¾	0 03½
Balsam, Canada	0 33	0 38
Copaiba	1 05	1 10
Peru	3 40	3 75
Tolu	1 40	1 50
Bark, Bayberry, pulv	0 20	0 22
Canella	0 17	0 20
Peruvian, yel. pulv	0 35	0 50
" red "	1 60	1 70
Slippery Elm, g. b	0 18	0 20
" flour, packets	0 28	0 32
Sassafras	0 15	0 18
Berries, Cubebs, ground	0 20	0 25
Juniper	0 06	0 10
Tonquin	0 62	1 10
Vanilla	30 00	30 00
Bismuth, Alb	2 90	3 00
Carb.	3 10	3 25
Camphor, Crude	0 38	0 4
Refined	0 45	0 50
Cantharides	2 20	2 30
Powdered	2 30	2 40
Charcoal, Animal	0 04	0 06
Wood, powdered	0 10	0 15
Chiretta	0 23	0 30
Chloroform	1 10	1 55
Cochineal, S. G	0 65	0 70
Black	85	90
Colocynth, pulv	0 60	0 65
Collodion	0 70	0 80
Elaterium	3 20	4 00
Ergot	0 35	0 45
Extract Belladonna	1 50	1 60
Colocynth, Co	1 25	1 75
Gentian	0 50	0 60
Hemlock, Ang	0 00	0 95
Henbane, "	1 70	1 80
Jalap	5 00	5 50
Mandrake	1 75	2 00
Nux Vomic	0 40	0 50
Opium	1 80	
Rhubarb	5 00	5 50
Sarsap. Hon. Co	1 00	1 20
" Jam. Co	3 50	4 00
Taraxacum, Ang	0 70	0 80
Flowers, Arnica	0 17	0 25
Chamomile	0 32	0 40
Gum, Aloes, Barb. extra	0 70	0 80
" " good	0 40	0 50
" Cape	0 16	0 20
" " powdered	0 20	0 30
" Socot	0 50	1 35
" " pulv	1 00	0 00
Arabic, White	0 70	0 75
" powdered	0 60	0 75
" sorts	0 24	0 30
" " powdered	0 42	0 50
" com. Gedda	0 13	0 16
Assafœtida	0 30	0 42
British or Dextrine	0 13	0 15
Benzoin	0 35	0 75
Catechu	0 12	0 15
" powdered	0 25	0 30
Euphorb, pulv	0 35	0 40
Gamboge	1 40	1 50
Guaiacum	0 45	1 00
Myrrh	0 50	0 85

DRUGS, MEDICINES, &c.—*Contd.*	$ c.	$ c.
Sang Dracon	0 60	
Scammony, powdered	6 00	6 50
" Virg. "	14 50	—
Shellac, Orange	0 80	0 85
Gum, Shellac, liver	0 60	0 70
Storax	0 40	0 45
Tragacanth, flake	1 10	1 75
" common	0 53	0 65
Galls	0 22	0 30
Gelatine, Cox's 6d	1 15	1 20
Glycerine, common	0 21	0 30
Vienna	0 29	0 30
Prices	0 60	0 75
Honey, Canada, best	0 15	0 16
Lower Canada	0 14	0 16
Iron, Carb. Precip	0 20	0 25
" Sacchar	0 40	0 55
Citrate Ammon	1 75	1 80
" & Quinine, oz	0 57	0 58
" & Strychine	0 20	0 25
Sulphate, pure	0 08	0 10
Iodine, good	5 00	5 50
Resublimed	6 50	7 00
Jalapin	1 25	1 50
Kreosote	2 40	2 50
Leaves, Buchu	0 22	0 32
Foxglove	0 25	0 30
Henbane	0 35	0 40
Senna, Alex	0 27	0 60
" E. I.	0 14	0 20
" Tinnevilly	0 20	0 30
Uva Ursi	0 15	0 17
Lime, Carbolate.....brl	5 50	—
Chloride	0 05	0 06
Sulphate	0 08	0 12
Lead, Acetate	0 15	0 16½
Leptandrin.....oz.	0 60	—
Liq. Bismuth	0 50	0 75
Lye, Concentrated	1 50	1 60
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 60	0 75
Mercury	2 10	2 20
Bichlor	2 00	2 10
Chloride	2 35	2 45
C. Chalk	0 95	1 00
Nit. Oxyd	2 40	2 50
Morphia Acet	5 25	5 35
Mur.	5 25	5 35
Sulph	5 40	5 50
Musk, pure grain.....oz	25 00	—
Canton	0 60	1 20
Oil, Amonds, sweet	0 40	0 45
" bitter	14 00	15 00
Aniseed	4 00	4 25
Bergamot, super	7 50	7 75
Caraway	3 20	3 50
Cassia	2 00	2 25
Castor, E. I	0 15	0 17
Crystal	0 22	0 25
Italian	0 26	0 28
Citronella	1 05	1 15
Cloves, Ang	3 50	3 75
Cod Liver	1 25	1 50
Croton	1 75	2 00
Juniper Wood	0 80	1 00
Berries	2 75	3 00
Lavand, Ang.....oz.	0 00	1 00
Exotic	1 25	1 50
Lemon, super	4 00	4 25
ord	3 20	3 40
Orange	3 00	3 25
Origanum	0 65	0 75
Peppermint Ang	15 00	16 00
" Amer.	5 00	5 50
Rose, Virgin	8 50	8 75
" good	7 00	7 25
Sassafras	0 75	1 90
Wintergreen	6 00	6 50
Wormwood, pure	4 00	6 00
Ointment, blue	1 60	1 70
Opium, Turkey	10 00	10 50
pulv	00 00	12 00

DRUGS, MEDICINES, &c.—*Cont'd*	$ c.	$ c
Orange Peel, opt.	0 30	0 36
" good	0 12½	0 20
Pill, Blue, Mass.	1 60	1 65
Potash, Bi.chrom	0 18	0 20
Bi-tart	0 33	0 35
Carbonate	0 14	0 20
Chlorate	0 40	0 45
Nitrate	8 00	9 00
Potass um, Bromide	85	0 90
Cyanide	0 60	0 65
Iodide	3 80	4 00
Sulphuret	0 25	0 35
Pepsin, Boudault's oz	1 40	—
Houghton's doz.	8 00	9 00
Morson's oz.	0 85	1 10
Phosphorous	0 95	1 00
Podophyllin	0 50	0 60
Quinine, Pelletier's	—	2 45
Howard's	2 20	—
" 100 oz. case.	2 17	—
" 25 oz. tin..	2 17	—
Root, Colombo	0 13	0 20
Curcuma, grd	0 12½	0 17
Dandelion	0 17	0 20
Elecampane	0 16	0 17
Gentian	0 08	0 10
" pulv	0 15	0 20
Hellebore, pulv	0 17	0 20
Ipecac, "	1 50	1 60
Jalap, Vera Cruz	90	1 15
" Tampico	0 70	1 00
Liquorice, select	0 12	0 13
" powdered	0 15	0 20
Mandrake "	0 20	0 25
Orris, "	0 20	0 25
Rhubarb, Turkey	1 75	2 00
" E. I	0 75	0 90
" " pulv	1 00	1 10
" " 2nd	0 60	0 70
" French	0 75	—
Sarsap., Hond	0 53	0 60
" Jam	0 88	0 90
Squills	0 10	0 15½
Senega	1 00	1 10
Spigelia	0 25	0 30
Sal., Epsom	2 25	3 00
Rochelle	0 31	0 35
Soda	0 02½	0 03
Seed, Anise	0 13	0 16
Canary	0 05	0 06
Cardamon	00	2 10
Fenugreek, g'd	0 08	0 09
Hemp	0 06½	—
Mustard, white	0 14	0 16
Saffron, American	0 75	0 85
Spanish	12 00	13 00
Santonine	7 50	8 00
Sago	0 08	0 09
Silver, Nitrate Cash	14 85	16 50
Soap Castile, mottled	0 11	0 14
Soda Ash	0 03¾	0 05
Bicarb. Newcastle	5 75	6 25
" Howard's	0 14	0 16
Caustic.	0 05½	0 05¾
Spirits Ammon., arom	0 35	0 35
Strychnine, Crystals	2 25	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
Aniline, Magenta, cryst	2 50	2 80
" liquid	2 00	—
Argols, ground	0 15	0 25
Blue Vitrol, pure	0 09½	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 85	0 90
Extract	0 26	0 30

DYESTUFFS—*Continued.*		
Japonica	0 07	0 08
Lacdye, powdered	0 33	0 38
Logwood	0 01⅞	0 03
Logwood, Camp	0 01⅝	0 03
Extract	0 9½	0 12
" 1 lb. bxs	0 13	—
" ½ lb. "	0 14	—
Madder, best Dutch	0 11	0 12
2nd quality	0 10	0 11
Quercitron	0 03	0 05
Sumac	0 06	0 08
Tin, Muriate	0 10½	0 12½
Redwood	0 05	0 06
SPICES.		
Allspice	0 11½@	0 12
Cassia	0 26	0 28
Cloves	0 60	0 65
Cayenne	0 22	0 28
Ginger, E. I	0 19	0 20
Jam	0 30	0 30
Mace	1 50	1 60
Mustard, com	0 20	0 25
Nutmegs	1 15	1 25
Pepper, Black	0 22½	0 23
White	0 31	0 32
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 07¼	0 08
Venetian	0 02½	0 03½
Sienna, B. & G	0 07	0 08
Umber	0 07	0 10
Vermillion, English	2 10	2 20
American	0 25	0 35
Whiting	0 1½	0 02
White Lead, dry, gen	0 08½	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 35	—
" No. 1	2 10	—
" No. 2	1 85	—
" No. 3	1 60	—
" com	1 30	—
White Zinc, Snow	2 75	3 25
NAVAL STORES.		
Black Pitch	4 10 @	4 50
Rosin, Strained	3 80	4 25
Clear, pale	5 75	7 25
Spirits Turpentine	0 50	0 52
Tar Wood	4 40	4 50
OILS.		
Cod	0 63 @	0 70
Lard, extra	0 95	1 00
No. 1	0 90	0 95
No. 2	0 80	0 85
Linseed, Raw	0 67½	0 70
Boiled	0 72½	0 75
Olive, Common	1 05	1 10
Salad	1 80	2 30
" Pints, cases	4 20	4 40
" Quarts	3 25	3 50
Seal Oil, Pale	0 75	0 75
Straw	0 68	0 70
Sesame Salad	1 30	1 35
Sperm, genuine	2 55	2 60
Whale refined	0 70	0 75