

## THE CODEX.(a)

## IX.

## CHEMISTRY OF THE CODEX.

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## SULFURES - SULPHIDES.

*Sulfure d'Antimoine* (Sulfuretum stibicum).—Trisulphide of antimony, prepared by fusing in a crucible a mixture of purified antimony, finely pulverized (5 parts), and sublimed sulphur (2 parts). When the fusion is effected, the heat is raised for a moment to drive off the excess of sulphur. The product is the representative of our Antimonium nigrum.

\* *Kermès minéral* (Oxy-sulfure d'Antimoine hydraté; Kermes minerale).—The representative of the British Antimonium nigrum. It is prepared by an ancient process (*méthode de Cluzel*), which consists in boiling the finely-pulverised sulphide, described above, with a solution of sodic carbonate, and leaving the filtered solution to cool. The proportions prescribed are—sulphide of antimony, 60 grammes (2½ oz.); crystallised sodic carbonate, 1,250 grammes (say 45 oz.); water, 12,800 grammes (say 22½ pints). After boiling for about an hour, the solution is filtered, while hot, into earthenware pans, previously heated, and containing some hot water. The solution is left to cool slowly for about twenty-four hours. The fine red powder deposited is then collected on a filter, washed with cold water until the latter gives no sensible residue when evaporated on platinum foil, pressed, dried by a moderate heat, and passed through a silken sieve. The powder must be kept in dry bottles, and protected from the action of air and light.

*Soufre doré d'Antimoine* (Sulfuretum stibicum auratum).—Pentasulphide of antimony, or "golden sulphuret of antimony," as it is commonly called, prepared by the following process:—Take of sulphide of antimony, obtained by fusion, 40 grammes (617 grains); sublimed sulphur, 140 grammes (2,160 grains); dry carbonate of sodium, 240 grammes (3,704 grains); wood charcoal, 30 grammes (463 grains). Mix these substances, finely pulverised, and melt the mixture in a crucible; reduce the product when cold to a coarse powder, and dissolve out the soluble matter by means of the smallest possible proportion of cold water. Filter and evaporate the solution, and set it aside to cool. Separate the crystals (sulphantimonate of sodium) by means of a funnel, dissolve them in about eight times their weight of cold water, and decompose the solution by adding, drop by drop, sulphuric acid, diluted with nine times its volume of water. When the dilute acid ceases to affect the solution, collect the precipitate on a filter, and wash and dry as for *Kermès minéral*. From the mother liquor of the last-named substance, the golden sulphide may also be readily obtained by precipitating it with an excess of acetic acid of 1.022.

*Æthiops minéral* (Sulfure noir de mercure; Æthiops minerale).—Amorphous mercuric sulphide, with a large excess of sulphur, prepared by triturating mercury with twice its weight of sublimed sulphur, until it is completely deadened and the mixture becomes uniformly black.

*Persulfure d'Étain* (Or mussif; sulfuretum stannicum).—Stannic sulphide, the "aurum musivum," or "mosaic gold" of the old chemists. Pure tin (12 parts) is melted in a crucible; mercury (6 parts) is added, and the resulting amalgam is triturated with sublimed sulphur (7 parts) and sal ammoniac (6 parts), until a tolerably homogeneous mixture is obtained. This is placed in a glass flask, and gradually heated on a sand bath beneath a chimney until it ceases to evolve vapours. The flask, when cool, is broken, and the assemblage of golden yellow scales, forming the upper layer of the product, is carefully separated from the lead-grey stannous sulphide, which is found below in variable proportion, depending on the management of the heat.

*Sulfure de Fer* (Sulfuretum ferrosum).—Ferrous sulphide, corresponding to the sulphide of iron, noticed in the Appendix of the British Pharmacopœia. It is prepared by heating a mixture of iron filings (6 parts) and sublimed sulphur (4 parts) in a crucible, at first gently, until the energetic reaction has terminated, and then strongly, so as to fuse

the product. The melted sulphide is poured out upon a plate to solidify.

*Sulfure de Calcium impur* (Foie de soufre calcaire; Sulfuretum calcium).—An impure sulphide of calcium, made by boiling down in a glazed earthenware basin a mixture of sulphur (1 part), slaked lime (3 parts), and water (5 parts), until a small portion taken from the mass solidifies on cooling. The concentrated mixture is poured upon a marble slab, and, when solid, broken into fragments, which must be preserved in well-corked bottles. The pure monosulphide (*sulfure de calcium pur*) is obtained by strongly heating in a covered crucible a mixture of 100 parts of calcined gypsum finely powdered, and 15 part of lamp-black.

\* *Monosulfure de sodium cristallisé* (Sulphhydrate de soude cristallisé; Sulfuretum sodicum).—Crystallised sodic sulphhydrate, employed in the preparation of sulphurated waters and artificial Barèges baths. To obtain it, a solution of caustic soda of sp. gr. 1.33 is saturated with sulphuretted hydrogen, and the resulting liquid protected from the action of the air is left to deposit crystals. When the crystals have attained their full size, they are drained in a funnel, and then placed in bottles with air-tight stoppers.

*Quintisulfure de Sodium en Solution* (Quintisulfuretum sodicum aquâ solution).—Pentasulphide of sodium in solution, prepared by heating 240 grammes (8½ oz.) of the crystallised salt just noticed with 128 grammes (4½ oz.) of sublimed sulphur, and 200 grammes (7 oz.) of water, until the sulphur is completely dissolved, and then filtering the solution through paper free from iron. The materials operated upon are placed in a glass flask, and the heat is applied by a sand bath. The temperature required to effect the combination is a little below that at which the mixture boils. The proportions prescribed are such as produce a solution of sp. gr. 1.14, containing one-third of its weight of the pentasulphide. When the presence of hyposulphide of sodium is unobjectionable, a solution of pentasulphite of sodium may be more economically prepared by heating sublimed sulphur with three times its weight of caustic soda solution of sp. gr. 1.35.(a) The resulting solution has the sp. gr. 1.41, but it contains the same proportion of pentasulphide as the pure solution of sp. gr. 1.14.

\* *Trisulfure de Potassium impur* (Sulfure de Potasse; Foie de soufre; Trisulfuretum potassicum).—Potassa sulphurata, British Pharmacopœia.

*Trisulfure de Potassium impur en solution* (Sulfure de Potasse liquide; Foie de soufre liquide; Trisulfuretum potassicum aquâ solution).—The above compound dissolved in water, and constituting about one-third of the weight of the solution. To prepare this liquid, the impure trisulphide is dissolved in the smallest possible quantity of water, and the solution having been rapidly filtered, is brought to the sp. gr. 1.26 by the addition of water. The bottles in which it is preserved must be completely filled and well-corked.

*Quintisulfure de Potassium impur en solution* (Foie de soufre liquide saturé; Quintisulfuretum potassicum liquidum).—Impure pentasulphide of potassium dissolved in water, and constituting about half the weight of the solution. To prepare it, sublimed sulphur is dissolved in three times its weight of caustic potash solution of sp. gr. 1.32, by the heat of a sand bath. The product, which has a sp. gr. of 1.38, must be preserved in well-corked bottles.

## CHLORURES—CHLORIDES.

\* *Protochlorure d'Antimoine* (Beurre d'Antimoine; Chloruretum stibicum).—Trichloride of antimony in the solid state. To obtain it, sulphide of antimony in powder is placed in the flask of the apparatus used for the preparation of *acide sulfhydrique dissous* (see page 173), and decomposed by three times its weight of hydrochloric acid of 1.17 gradually added, the reaction being promoted by maintaining the liquid for some time at the temperature of ebullition. The resulting solution when cool is decanted into a porcelain capsule, and evaporated under a chimney until a drop placed upon a plate of glass solidifies on cooling. It is then introduced into a glass retort connected with a perfectly dry glass receiver, and is distilled almost to dryness by the heat of a sand bath. It is sometimes necessary to apply heat to the neck of the retort to clear it of solidified chloride of antimony. The crystalline

(a) Concluded from page 175.

(a) By a misprint, this sp. gr. is given as 1.85 in the Codex.

mass condensed in the receiver is often associated with a small quantity of liquid, which must be separated by decantation. The solid product is then melted, and introduced into wide-mouthed bottles, provided with well-fitting corks which have boiled in wax.

\* *Protochlorure d'Antimoine liquide*.—The representative of our Liquor Antimonii Chloridi. To prepare it, some of the crystals obtained in the process just described are placed in a glass funnel, the neck of which is inserted in the mouth of a flask, and the whole arrangement is placed beside a capsule full of water and covered with a large bell-jar. The crystals thus exposed to the action of aqueous vapour are completely liquified in the course of a few days. When this liquid chloride is thrown into forty times its weight of water a white precipitate is formed. This is the *Oxy-chlorure d'antimoine* of the Codex, or the *Poudre d'Algaroth* of the old French chemists.

*Chlorure d'Or* (a) (*Chloruretum auricum*).—Chloride of gold, prepared by dissolving the pure metal in four times its weight of aqua regia (composed of 1 part nitric acid of 1.32, and 3 parts hydrochloric acid of 1.17), the reaction being promoted by the heat of a sand bath, and evaporating the solution thus obtained in a porcelain capsule. When the water and excess of acid have been expelled, and the product begins to evolve chlorine, the capsule is removed from the sand bath and allowed to cool. A crystalline mass of gold chloride is the result of the operation. It must be immediately introduced in a bottle provided with a ground-glass stopper. A similar process for preparing chloride of gold is described in the Appendix of the British Pharmacopœia.

\* *Chlorure d'Or et de Sodium* (*Chloruretum aurico-sodicum*).—A double chloride of gold and sodium. The solution of gold chloride obtained as above having been evaporated to a syrupy consistence is diluted with an equal volume of water; a proportion of chloride of sodium, corresponding to three-tenths of the weight of the gold taken is then added; and the liquid, having been stirred with a glass rod, is evaporated almost to dryness, at first on a sand bath, and then on a water bath. The product thus obtained must be preserved in a stoppered bottle. The double salt may be obtained in regular crystals by discontinuing the evaporation when a pellicle begins to form, and allowing the liquid to cool.

\* *Protochlorure de Mercure par sublimation* (*Mercurus doux, calomelas, chloruretum hydrargyrosus*).—Mercurous chloride, or calomel, prepared by triturating 3 parts of mercury with 4 parts of corrosive sublimate and sufficient water to moisten the salt, until the metal is completely deadened; and after drying the mixture in a stove, gradually heating it in a large glass flask until it sublimes. The crystalline sublimate detached from the fragments of the broken flask must be finely powdered and washed with boiling distilled water until the washings are free from the least trace of corrosive sublimate. *Hydrargyri subchloridum*, British Pharmacopœia, may generally be substituted for this preparation.

\* *Protochlorure de Mercure pulvérulent* (*Calomel à la vapeur; Chloruretum hydrargyrosus*).—Another form of mercurous chloride, corresponding to our official calomel (*Hydrargyri subchloridum*). It is prepared by heating fragments of the crystalline chloride (obtained by the process just described) in an earthen tube, and condensing the vapour in a large earthen vessel. The pulverulent calomel thus formed must be repeatedly washed to remove traces of corrosive sublimate. For a minute description of the apparatus ordered for the sublimation we must refer our readers to the pages of the Codex.

\* *Protochlorure de Mercure par précipitation* (*Précipité blanc; Chloruretum hydrargyrosus*).—A third form of mercurous chloride prepared in the following manner:—Mercury is exposed to the action of one and a half times its weight of cold nitric acid of sp. gr. 1.26 in a large glass flask; and after two or three days the bulky crystals of mercurous

nitrate which are formed, are separated from the mother liquor, drained, reduced to powder, and dissolved in water slightly acidulated with nitric acid. The solution is effected without the aid of heat by stirring the powder with successive portions of the acidulated water, and decanting the liquors. When the whole of the nitrate is dissolved, the liquors are united in a tall glass jar, and treated with a slight excess of hydrochloric acid, which precipitates the mercury as mercurous chloride. This is repeatedly washed by decantation, the last washings being with boiling distilled water; it is then squeezed in a cloth, and made into little cakes, which are dried in a stove. The chloride thus prepared is said to have more active medicinal properties than ordinary calomel.

\* *Deutochlorure de Mercure sublimé* (*Sublimé corrosif; Bichlorure de Mercure; Chloruretum hydrargyricum*).—Mercuric chloride or corrosive sublimate, corresponding to *Hydrargyri perchloridum*, British Pharmacopœia. The processes prescribed in the French and British works are essentially the same, but the Codex gives many details of manipulation which our Pharmacopœia leaves to the discretion of the operator.

*Deutochlorure de Mercure en solution* (*Liquor de Van Swieten; Chloruretum hydrargyricum aqua solutum*).—A solution of mercuric chloride prepared by dissolving 1 gramm of corrosive sublimate in 100 grammes of alcohol at 80° (sp. gr. .864) and then adding 900 grammes of distilled water. The proportion of corrosive sublimate contained in this solution is somewhat smaller than that contained in *Liquor Hydrargyri Perchloridi*, British Pharmacopœia.

\* *Solution officinale de Perchlorure de Fer* (*Chlorurctum ferricum aqua solutum*).—An aqueous solution of ferric chloride prepared by dissolving iron turnings in weak hydrochloric acid, and passing a current of chlorine gas through the liquor until a test-sample ceases to give a blue precipitate with red prussiate of potash. It is then diluted with distilled water until its specific gravity as marked by the hydrometer is reduced to 1.26. Its strength is about double that of *Liquor Ferri Perchloridi*, British Pharmacopœia. In round numbers the percentages of ferric chloride in the French solution, and in our ordinary and strong official solutions, are 26, 13, and 43 respectively.

*Chlorure de Zinc* (*Chloruretum zincicum*).—Zinci Chloridum, British Pharmacopœia. The formula for preparing this salt agrees in all essential particulars with that given in our own Pharmacopœia, but the latter appears to us to be preferable, as it does not involve the use of gas apparatus. The Codex prescribes a current of chlorine gas for converting the contaminating ferrous chloride into the ferric salt, while the British Pharmacopœia orders solution of chlorine.

*Chlorure de Magnésium cristallisé* (*Chloruretum magnesium cum aqua*).—Chloride of magnesium in crystals prepared by dissolving the carbonate in hydrochloric acid diluted with twice its weight of water (taking care to employ a slight excess of carbonate); evaporating the filtered solution until its specific gravity while boiling, as indicated by a hydrometer, is raised to 1.38; and then allowing the liquor to cool in a large wide-mouthed flask. This salt is extremely deliquescent.

*Chlorure de Calcium* (*Chloruretum calcicum*).—Calcii Chloridum, British Pharmacopœia. The Codex process consists simply in dissolving carbonate of calcium in weak hydrochloric acid, and evaporating the filtered solution to dryness. The British process involves a simple expedient for increasing the purity of the product, and is therefore preferable.

\* *Chlorure de Baryum* (*Chloruretum baryticum*).—Chloride of barium, prepared by triturating 5 parts of pulverised sulphate of barium with 2 parts of lamp-black and a little oil, heating the mixture for four or five hours in a large covered crucible filled up with finely-powdered wood charcoal; extracting the soluble matter from the powdered product by prolonged boiling with distilled water; decomposing the resulting solution of barium sulphide, after filtration, by dilute hydrochloric acid; filtering the liquid and washing the residue with hot water; evaporating the filtrate, together with the wash-water to dryness; redissolving the residue of the evaporation in a small quantity of water; adding to this solution a little barium sulphide

(a) According to the Codex, the chemical constitution of gold chloride is expressed by the formula  $AuCl_3=205$ , the combining number of gold being taken as 98.5. This is a glaring error, for if  $Au=98.5$ , the formula of the chloride is  $Au_2Cl_6=393.5$ . According to the atomic weights adopted in the British Pharmacopœia, gold chloride is  $AuCl_3=303$ .

to precipitate any iron that may be present; filtering once more, and lastly concentrating the solution by slow evaporation and leaving it to crystallise. This salt is named among the articles employed in analysis in the Appendix of the British Pharmacopœia, but its preparation has been left to the manufacturing chemist.

*Chlorure de Sodium* (Chloruretum sodicum).—Common salt, Sodii chloridum, British Pharmacopœia. Even this familiar compound is the subject of a purificatory process. A solution of the marine salt of commerce in distilled water having been prepared, solution of carbonate of sodium is added drop by drop to precipitate foreign metals; the liquor after filtration is evaporated, and the crystals obtained are drained in a funnel, washed with a small quantity of distilled water, and finally dried.

*Chlorure de Potassium* (Chloruretum potassicum).—Chloride of potassium prepared by neutralising an aqueous solution of carbonate of potassium with hydrochloric acid, evaporating and crystallising.

#### BROMURES—BROMIDES.

\* *Bromure de Potassium*.—(Bromuretum potassicum).—Bromide of potassium obtained by a process analogous to that given under Potassii Bromidum, British Pharmacopœia. To decompose the bromate, which is formed together with bromide in the first stage of the operation, the Codex prescribes simple fusion for some minutes at a dull red heat. The British plan, which includes deflagration with charcoal as well as fusion, is more likely to ensure the complete deoxidation of the bromate.

#### IODURES—IODIDES.

\* *Iodure de Potassium* (Ioduretum potassicum).—Iodide of potassium. The Codex formula for the preparation of this salt depends on the reaction of ferrous iodide and carbonate of potassium, and is therefore quite distinct from the formula given under Potassii Iodidum in the Pharmacopœia. To a hot filtered solution of ferrous iodide (obtained by heating 10 parts of iodine and 3 parts of iron turnings in 50 parts of distilled water until the liquor loses its deep brown colour) a solution of carbonate of potassium is added until it ceases to give a precipitate; the clear liquor obtained by filtration, augmented by the washings from the precipitate, is then evaporated to dryness, and the product redissolved in four or five times its weight of water; the resulting solution is filtered, evaporated, and set aside to crystallise. The mother liquor drained from the crystals may be evaporated for a second crop.

*Iodure de Fer Crystallisé* (Ioduretum ferrosium).—Ferrous iodide obtained by a process analogous to that ordered for Ferri Iodidum, British Pharmacopœia.

\* *Iodure de Plomb* (Ioduretum plumbicum).—Iodide of lead, obtained by precipitating nitrate of lead with iodide of potassium, as in our official formula for Plumbi Iodidum. The Codex properly orders cold solutions for the precipitation, the iodide being somewhat soluble in hot water.

\* *Protoiodure de Mercure* (Ioduretum hydrargyrosium).—Mercurous iodide, prepared as Hydrargyri Iodidum viride, British Pharmacopœia.

\* *Deutoiodure de Mercure* (Ioduretum hydrargyricum).—Mercuric iodide, prepared as Hydrargyri Iodidum rubrum, British Pharmacopœia.

*Iodure de Soufre* (Ioduretum sulfuricum).—Iodide of sulphur. The formula for Sulphuris Iodidum in the British Pharmacopœia is a literal translation of that given in the Codex.

#### CYANURES—CYANIDES.

\* *Cyanure de Potassium* (Cyanuretum potassicum).—Cyanide of potassium, obtained by igniting the dried ferrocyanide (yellow prussiate) in a covered crucible, and filtering the fused product through fine iron gauze (*tissu de fer*) placed over the mouth of a second crucible heated to redness in the furnace.

*Cyanure ferroso-ferrique* (Blue de Prusse; Cyanuretum ferroso-ferricum).—Ferric ferrocyanide, or Prussian blue, obtained as a precipitate by adding a saturated cold solution of ferrocyanide of potassium (yellow prussiate) to a dilute solution of ferric chloride (*solution officinale de perchlorure de*

*fer*, with three or four times its volume of distilled water) The precipitate is collected on a filter, and well washed; it is then dried in a stove.

*Cyanure de Zinc* (Cyanuretum zincicum).—Cyanide of zinc, obtained as a precipitate by gradually adding a solution of potassium cyanide to a solution of pure zinc sulphate, the reaction being promoted by constant stirring. After repose, the clear solution is decanted, and the precipitate, having been thoroughly washed with boiling distilled water by affusion and decantation, is collected on a filter, and, after draining, carefully transferred to a plate, and dried in a stove.

\* *Cyanure de Mercure* (Cyanuretum hydrargyricum).—Mercuric cyanide, prepared by the following process:—A mixture of finely-powdered red oxide of mercury (3 parts) and pure Prussian blue (4 parts) is boiled in distilled water (25 parts) until the solid matter acquires a brown colour; the liquid is then separated by filtration, and the residue is boiled for a few minutes with fresh distilled water (15 parts); the second filtrate having been added to the first, the whole is evaporated until a pellicle begins to form on the surface, and then left in a cool place to crystallise. The crystals, after draining, are dried upon paper in a stove. They are employed in the preparation of *Acide Prussique médicinal* (see page 173).

#### SULFATES, SULFITES, HYPOSULFITES.

*Sulfate de Deutoxyde de Mercure* (Sulphas hydrargyricus).—Normal mercuric sulphate, corresponding to Hydrargyri sulphas, British Pharmacopœia.

*Sous-Sulphate de Deutoxyde de Mercure* (Turbitb minéral; Subsulphus hydrargyricus).—A basic mercuric sulphate, prepared by agitating the finely-powdered normal salt in fifteen times its weight of boiling water, until it is transformed to a yellow powder. This is repeatedly washed with boiling water, by affusion and decantation, and then dried.

\* *Sulfate de Fer cristallisé* (Sulfate ferreux; Vitriol vert; Couperose verte; Sulfas ferrosus in cristallo concretus).—Crystallised ferrous sulphate corresponding to Ferri Sulphus, British Pharmacopœia.

\* *Sulfate de Zinc cristallisé* (Sulfate zincique; Vitriol blanc; Couperose blanche; Sulfas zincicus in cristallo concretus).—Crystallised zinc sulphate corresponding to Zinci Sulphas, British Pharmacopœia. In the French formula, pure zinc is prescribed, hence the treatment with solution of chlorine and zinc carbonate included in the British process is omitted.

*Sulfate de Cadmium* (Sulfas cadmicus).—Cadmium sulphate, prepared by the following process:—Coarsely-powdered metallic cadmium (1 part) is dissolved in nitric acid (3 parts), mixed with distilled water (1 part). The resulting solution having been diluted with 7 or 8 times its volume of distilled water, is raised to ebullition, and precipitated with solution of carbonate of sodium. The cadmium carbonate thrown down is well washed by affusion and decantation, placed in a small quantity of distilled water, and dissolved by sulphuric acid, added drop by drop to avoid excess. The solution thus obtained, having been filtered and evaporated, yields large colourless prisms of cadmium sulphate.

*Sulphate de Manganèse* (Sulphate manganoux; Sulfas manganosus in cristallo concretus).—Manganous sulphate, obtained by exposing a mixture of equal parts of black oxide of manganese and ferrous sulphate to a dull red heat for about half an hour; treating the finely-pulverised product with boiling water; filtering and evaporating to dryness; adding cold water, and after concentrating the liquor by evaporation, leaving it to cool and crystallise.

*Solution de Sulfate d'Alumine bibasique* (Sulfas aluminicus aquâ solutus).—A solution of dibasic aluminium sulphate, prepared by the following process:—Sulphate of aluminium free from iron is dissolved in 10 times its weight of water, and enough ammonia is added to precipitate the whole of the aluminium as gelatinous alumina. This having been washed with care, and allowed to drain for 24 hours, is heated on a water-bath with a fresh portion of sulphate of aluminium, equal to that previously taken, and the solution obtained is evaporated until its sp. gr. as indicated by the hydrometer, is 1.26. The solution having been left for some days in a cold place, is filtered to separate any

crystals of sulphate of ammonia which may form, owing to the difficulty of perfectly washing the alumina. Under the name *Solution de sulfate d'alumine et de zinc*, a somewhat similar preparation is prescribed. It is obtained by dissolving 60 parts of aluminium sulphate, free from iron, in 40 parts of water, and adding 6 parts of zinc oxide. This solution when filtered ought to show the sp. gr. 1.35 with the hydrometer.

\* *Sulfate d'Alumine et de Potasse desséché* (Alum calciné; Sulfas aluminico-potassicus).—Potash-alum deprived of its water of crystallisation by heat carefully kept below redness. It is the representative of our official *Alumen exsiccatum* obtained by heating ammonia-alum.

\* *Sulfate de Soude purifié* (Sel de Glauber; Sulfas sodicus).—Normal sulphate of sodium (*Sodæ sulphas*) purified by re-crystallisation.

*Sulfate de Cuivre ammoniacal* (Sulfas cuprico-ammoniacus).—A compound termed by modern chemists "tetrammino-cupric sulphate," obtained in fine blue crystals by the following process:—Solution of ammonia is added to finely powdered copper sulphate, placed in a glass jar, until a complete solution is obtained. Upon this deep blue solution an equal volume of rectified spirit is poured with great care, so that the two liquids may remain distinct. The vessel is then allowed to remain at rest for 24 hours, during which time the two liquids mix slowly by diffusion, and form beautiful crystals. After decanting the mother-liquor, they are dried rapidly between folds of bibulous paper and preserved in stoppered bottles.

*Sulfite de Chaux* (Sulfis calcicus).—Sulphite of calcium, obtained by transmitting gaseous sulphurous oxide through a vessel packed with fragments of moistened chalk. The gas is generated by heating sulphuric acid made into a paste with powdered wood charcoal, and is washed by passing through a small quantity of water before it comes into contact with the chalk. At the end of the operation the yellowish-grey and somewhat hard fragments of sulphite are separated from the white and friable pieces of unaltered chalk. The sulphite is preserved for use in the state of powder.

*Hyposulfite de Soude* (Sulfite sulfuro de Soude; Hyposulfis sodicus).—Hyposulphite of sodium, obtained by dissolving 8 parts of crystallised sodic carbonate in 16 parts of water, saturating one-half of the solution with sulphurous gas, then adding the other half, and boiling the whole with 1 part of sublimed sulphur. The filtered solution evaporated until it is reduced to one third of its original volume, yields crystals of the hyposulphite on cooling. This salt is noticed in the Appendix of the British Pharmacopœia.

#### NITRATES.

*Nitrate de Mercure cristallisé* (Nitrate de Protoxyde de Mercure; Nitras hydrargyrosus).—Mercurous nitrate, formed by the action of cold dilute nitric acid upon mercury. Mercury 4, acid 3, water 1, are placed together in a glass flask, and left for twenty-four hours in a cool place. The crystals deposited are then collected, washed in a glass funnel with a little dilute nitric acid, allowed to drain, and transferred to a stoppered bottle.

\* *Nitrate acide de Deutoxyde de Mercure* (Nitrate de mercure liquide; Nitras hydrargyricus acido nitrico solutus).—A solution of mercuric nitrate, resembling *Liq. Hydrargyri Nitratis acidus*, British Pharmacopœia. It is prepared by dissolving 2 parts of mercury in 3 parts by weight of nitric acid, diluted with 1 part of water, and evaporating the resulting solution, until it is reduced to three-fourths of its original weight.

\* *Nitrate d'Argent cristallisé* (Nitras argenticus in cristallo concretus).—Crystallised nitrate of silver, corresponding to *Argentum nigras*, British Pharmacopœia.

\* *Nitrate d'Argent fondu* (Pierre infernale; Nitras argenticus fusus).—Fused nitrate of silver in pencils.

\* *Sous-nitrate de Bismuth* (Magistère de Bismuth; Subnitratis bismuthicus).—Basic bismuth nitrate, corresponding to, and prepared as *Bismuthi Subnitratis*, British Pharmacopœia.

#### HYPOCHLORITES.

\* *Hypochlorite de Chaux liquide* (Chlorure de chaux liquide; Hypochloris calcicus aqua solutus).—An aqueous solution of

chlorinated lime, formed by triturating the dry compound with forty-five times its weight of water, divided in small portions, and filtering the mixed liquors. It contains twice its volume of available chlorine. The corresponding solution of the British Pharmacopœia (*Liq. Calcis Chloratæ*) contains nine times its volume of available chlorine.

\* *Hypochlorite de Soude liquide* (Chlorure de Soude; Liqueur de Labarraque; Hypochloricus sodicus aqua solutus).—An aqueous solution of chlorinated soda, prepared by mixing a solution of chlorinated lime with one of carbonate of sodium, and filtering. The proportions ordered are—1 part of chlorinated lime dissolved in 30 parts of water, and 2 parts of crystallised sodic carbonate dissolved in 15 parts of water. In strength, this solution agrees with *hypochlorite de chaux liquide*. Its British representative (*Liq. Sodæ Chloratæ*) is much stronger, and is prepared by a different process.

#### PHOSPHATES, PYROPHOSPHATES, ARSÉNATES, ARSENITES.

*Phosphate de Chaux* (Phosphas calcicus).—Tricalcic phosphate, corresponding to *Calcis phosphas*, British Pharmacopœia.

*Phosphate ferroso-ferrique* (Phosphate de Fer; Phosphas ferroso-ferricus).—Oxidised ferrous phosphate, resembling our official *Ferri phosphas*. To prepare it, according to the Codex formula, take 1 part of crystallised sulphate of iron, 3 parts of crystallised phosphate of sodium, and 30 parts of water. Dissolve each salt separately in one-half of the water, and add the phosphate, little by little, to the sulphate until it ceases to form a precipitate. Agitate the mixture, and allow it to rest for twenty-four hours, in order that the precipitate, at first white and gelatinous, may change to the bluish grey pulverulent phosphate. Wash this product with distilled water, by affusion and decantation, until the washings cease to be affected by barium chloride, and let it dry in the air until it ceases to lose weight.

\* *Phosphate de Soude cristallisé* (Phosphas sodicus in cristallo concretus).—Disodic phosphate, corresponding to our official *Sodæ Phosphas*. The Codex process is substantially that of the Pharmacopœia.

*Pyrophosphate de Soude cristallisé* (Pyrophosphas sodicus in cristallo concretus).—Pyrophosphate of sodium, obtained by igniting the last-named salt in a platinum crucible, dissolving the pulverised product in twelve parts of boiling water, evaporating the solution till it has the sp. gr. 1.20, and collecting the crystals which form on cooling.

*Pyrophosphate de Fer Citro-Ammoniacal* (Pyrophosphas ferricus eum citrate ammonico).—Ammonio-ferric pyrophosphate with citrate of ammonia, in yellowish brown scales. To prepare it, a dilute solution of ferric chloride is added, little by little, to a solution of pyrophosphate of sodium, and the precipitated ferric salt having been washed, is dissolved in a solution of citrate of ammonia (obtained by treating citric acid with excess of ammonia). The resulting solution is evaporated by a gentle heat till it has a syrupy consistence, when it is spread over glass plates, and sealed by drying in a stove. The proportions ordered in the Codex formula are *solution officinale de perchlorure de fer*, 156 grammes; crystallised pyrophosphate of sodium, 84 grammes; citric acid, 26 grammes; solution of ammonia, q. s.

\* *Arséniate de Soude* (Arsenias sodicus).—Disodic arsenate, corresponding to *Sodæ arsenias*, British Pharmacopœia. The Codex formula differs slightly from the British. Nitrate of sodium (200 grammes) and arsenious acid (116 grammes) are fused together in a crucible, and the product, dissolved in water, is rendered decidedly alkaline by a solution of carbonate of sodium. The liquor, after evaporation, yields crystals on cooling.

\* *Solution arsenicale de Pearson* (Liqueur de Pearson; Arsenias sodicus aqua solutus).—A solution of the above arsenate, prepared by dissolving 5 centigrammes of the crystallised salt in 30 grammes of distilled water (1 part in 600 parts). The arsenical solution of the British Pharmacopœia (*Liq. Arsenicals*) is nine times as strong (1 in 66).

*Arséniate de Potasse cristallisé* (Sel arsenical de Macquer; Arsenias potassicus in cristallo concretus).—Monopotassic arsenate, prepared by heating a mixture of equal parts of arsenious acid and nitre in an earthen crucible, dissolving the product in boiling distilled water, and evaporating the filtered solution. The salt crystallises on cooling.

\* *Solution d'Arsénite de Potasse* (Liquor de Fowler; Arsenis potassicus aqua solutus).—The French "Fowler's solution," prepared by boiling 5 grammes of arsenious acid with 5 grammes of carbonate of potassium and 500 grammes of distilled water until a complete solution is obtained, adding 15 grammes of a flavouring tincture (*alcool de mélisse composé*); and, when the whole has cooled, adding sufficient distilled water to make up exactly 500 grammes. Prepared in this manner, the solution contains 1 per cent. by weight of arsenious acid.

## CARBONATES, BICARBONATES.

*Carbonate de Manganèse* (Carbonas manganosus).—Manganous carbonate, obtained as a white precipitate by mixing hot solutions of manganous sulphate and sodic carbonate. The precipitate must be thoroughly washed by affusion and decantation with hot water, then made into little cakes and dried.

\* *Carbonate de Chaux* (Carbonas calcicus).—The representative of our officinal Calcis carbonas precipitata.

\* *Carbonate de Soude cristallisé* (Sel de soude cristallisé; carbonas sodicus in crystallos concretus).—Sodæ Carbonas, British Pharmacopœia. The soda of commerce, purified by recrystallisation from a filtered solution.

\* *Bicarbonate de Potasse* (Carbonate de Potasse saturé; Bicarbonas potassicus).—Potassæ Bicarbonas, British Pharmacopœia.

\* *Bicarbonate de Soude* (Carbonate de Soude saturé; Bicarbonas sodicus).—Sodæ Bicarbonas, British Pharmacopœia. The Codex process is analogous to that described in our own Pharmacopœia, but the latter is preferable.

## PERMANGANATES.

*Permanganate de Potasse* (Permanganas potassicus).—Potassæ Permanganas, British Pharmacopœia. The formulæ given in the two works agree in all essential particulars.

## ACIDES VÉGÉTAUX—VEGETABLE ACIDS.

\* *Acide Acétique cristallisable* (Acide acétique pur; Acidum aceticum purum).—Acidum Aceticum glaciale, British Pharmacopœia. The Codex gives directions for obtaining this acid by the action of sulphuric acid upon dried acetate of sodium. The anhydrous product obtained by heating 625 grammes of the crystallised salt is placed with 250 grammes of sulphuric acid in a tubulated retort, and the whole is gradually heated until 180 grammes of acetic acid have passed over. This product is rectified by a second distillation from dried acetate of sodium.

*Vinaigre radical* (Acetum radicale).—Concentrated acetic acid, obtained from cupric acetate (crystallised verdigris) by dry distillation.

\* *Acide Benzoïque par sublimation* (Fleurs de Benjoin; Acidum benzoicum sublimatione paratum).—Acidum Benzoicum, British Pharmacopœia. Equal parts of benjoin and sand are heated in an earthenware vessel, over which a piece of grey filtering paper is stretched, and the vapour of benzoic acid evolved after passing through the paper is condensed in a long cone of white cardboard. From 100 parts of benjoin 4 parts of the crystallised acid are obtainable.

*Acide Benzoïque par voie humide* (Acidum benzoicum aqua mediante paratum).—Benzoic acid obtained by boiling benjoin with half its weight of slaked lime and six times its weight of water for half an hour with constant stirring, filtering through cloth; boiling the residue with a fresh quantity of water and again filtering; repeating these operations a third time; concentrating the united liquors by evaporation, and adding hydrochloric acid till the solution manifests an acid reaction. The benzoic acid separates on cooling, and is purified by recrystallisation.

*Acide Gallique* (Acidum gallicum).—Gallic acid obtained from galls by a process resembling that described under Acidum Gallicum in the Pharmacopœia.

*Acide Valérianique* (Acid valérique; Acidum valerium).—Valeric acid, obtained by digesting bruised valerian root (100 parts) with sulphuric acid (10 parts) and dichromate of potassium (6 parts) dissolved in water, distilling one-fourth of the liquid; redistilling this until the liquid which comes over no longer gives an acid reaction; saturating this second distillate with sodic carbonate; evaporating to a syrupy consistence; and after adding a slight excess of

dilute sulphuric acid, allowing the liquid to rest. The valeric acid comes to the surface as an oily liquid, and after decantation it must be purified by redistillation. Valeric acid may be more profitably obtained from fousel oil.

\* *Acide Tannique* (Tannin; Acidum tannicum).—This corresponds to our officinal Acidum Tannicum. Two processes for obtaining it from gall-nuts are given in the Codex; the elegant percolating process of Pelouze, described in Fownes's Chemistry, and the rougher method by expression, which has been selected by the compilers of the British Pharmacopœia.

## ALCALIS VÉGÉTAUX—VEGETABLE ALKALOIDS.

\* *Morphine* (Morphina).—The Codex process for obtaining this base from opium is almost the same as that described under Morphine Hydrochloras in the Pharmacopœia.

\* *Codeïne* (Codeina).—This base is obtained from the residual liquor of the morphine process by a series of troublesome operations. For practical details we must refer the reader to the Codex, or to "Watts's Dictionary of Chemistry."

*Quinine* (Quina).—The alkaloid precipitated from a solution of sulphate of quinine on the addition of ammonia.

*Cinchonine* (Cinchonina).—An alkaloid obtained from grey cinchona bark by a process similar to that employed for the preparation of sulphate of quinine with yellow bark. It is less soluble than quinine in alcohol, and advantage is taken of this difference of solubility to effect the separation of the two bases.

\* *Strychnine* (Strychnina).—Strychnia, British Pharmacopœia.

*Brucine* (Brucina).—An alkaloid obtained from the mother liquor of the process of preparing strychnine from nuxvomica.

*Atropine* (Atropina).—Atropia, British Pharmacopœia.

*Veratrine* (Veratrina).—Veratria, British Pharmacopœia.

*Aconiline* (Aconitina).—Aconitia, British Pharmacopœia.

*Cicutine* (Conicine; Conine; Cicutina).—The poisonous principle of hemlock, usually termed conine in this country. It is obtained from the seeds by Geiger's process. (See Watts's Dictionary of Chemistry).

We have not attempted to reproduce the Codex formulæ for obtaining the above bases, as most practical pharmacists will be content to leave them in the hands of manufacturing chemists.

## SELS À ACIDES VÉGÉTAUX—SALTS FROM VEGETABLE ACIDS.

\* *Sous-Acétate de Plomb liquide* (Extrait de Saturne; Subacetatis plumbicus).—The representative of Liq. Plumbi Subacetatis, British Pharmacopœia. The proportions prescribed are—crystallised acetate of lead, 3 parts; litharge, 1 part; water, 8 parts. The liquor when cold should have the sp. gr. 1.32; it is accordingly stronger than our officinal liquor, which has the sp. gr. 1.26.

\* *Acétate de Potasse* (Terre foliée de Tartre; Acetas potassicus).—Potassæ Acetas, British Pharmacopœia.

*Acétate de Soude* (Terre foliée minérale; Acetas sodicus).—Sodæ Acetas, British Pharmacopœia. It is obtained by saturating acetic acid with sodic carbonate, evaporating and crystallising.

\* *Acétate d'Ammoniaque liquide* (Esprit de Mindererus; Acetas ammonicus aqua solutus).—Liq. Ammoniac Acetatis, British Pharmacopœia.

*Acéate de Zinc* (Acetas zincicus).—Zinci Acetas, British Pharmacopœia. According to the Codex and many good authorities, this salt crystallises with 3 atoms of water, but our Pharmacopœia allows it only 2.

\* *Tartrate neutre de Potasse* (Tartras potassicus).—Potassæ Tartras, British Pharmacopœia.

\* *Tartrate de Potasse et de Soude* (Sel de Seignette de Rochelle; Tartras potassico-sodicus).—Sodio-potassic tartrate, the so-called Soda Tartarata of our Pharmacopœia.

\* *Tartrate de Potasse et d'Antimoine* (Émétique; Tartre stibié; Tartras stibicus-potassicus).—Antimonium tartaratum, British Pharmacopœia.

\* *Tartrate borico-potassique* (Crème de Tartre soluble; Tartras borico-potassicus).—Boro-potassic tartrate prepared by evaporating 1 parts acid tartrate of potassium, 1 part

crystallised boric acid, and 10 parts water, in a silver basin until a thick mass is obtained; this is dried on plates in a stove, broken into fragments, and preserved in well-corked bottles.

\* *Tartrate ferrico-potassique* (Tartras ferrico-potassicus).—Ferrum Tartaratum, British Pharmacopœia.

\* *Citrate de Fer Ammoniacal* (Citras ammonico-ferricus).—Ferri et Ammonia Citras, British Pharmacopœia.

*Benzoate de Soude* (Benzoas Sodicus).—Benzoate of sodium, obtained by neutralising solution of caustic soda with benzoic acid, and allowing the liquor to evaporate and crystallise over a vessel containing sulphuric acid placed beneath a bell-jar.

*Benzoate d'Ammoniaque* (Benzoas ammonicus).—Normal benzoate of ammonia obtained in crystals by dissolving benzoic acid in strong ammonia with the aid of heat and agitation, and allowing the solution to cool. The formula given under Ammonia Benzoas in our Pharmacopœia would, we should think, produce the acid salt.

*Valerianate de Zinc* (Valérate de Zinc; Valeras zincicus).—Zinci Valerianas, British Pharmacopœia. The Codex process consists in dissolving hydro-carbonate of zinc in diluted valeric acid with the aid of a gentle heat; filtering the warm liquid, and leaving it to evaporate in a stove.

*Valérianate d'Ammoniaque* (Valérate d'Ammoniaque; Valeras ammonicus).—Valerate of ammonia, obtained by placing some valeric acid in a saucer beneath a tubulated bell receiver, and passing into the latter a current of dry ammonia gas. The normal valerate thus produced is a white solid, crystallisable in prisms.

*Lactate de Zinc* (Lactas zincicus).—Lactate of zinc, obtained by saturating a warm solution of lactic acid with hydro-carbonate of zinc, well washed and still moist; filtering the warm liquor, concentrating it by evaporation, and allowing it to cool. The salt separates in brilliant needles or plates.

\* *Lactate de Fer* (Lactate de protoxyde de Fer; Lactate ferreux; Lactas ferrosus).—Ferrous lactate, obtained by the following process:—100 parts of lactate of calcium and 98 parts of crystallised ferrous sulphate are dissolved separately in water, and the solutions are then mixed; a precipitate of sulphate of calcium is formed, and to render this insoluble in the liquid, the latter is treated with one-quarter of its volume of rectified spirit; the filtered liquor concentrated by evaporation on a water-bath is then placed in a stove. The ferrous lactate is deposited in greenish crusts.

#### SELS À BASES VÉGÉTALES—SALTS OF THE ALKALOIDS.

\* *Sulfate de Quinine* (Sulfas quinicus).—Normal sulphate of quinine corresponding to Quiniae Sulphus, British Pharmacopœia.

*Sulfate Acide de Quinine* (Sulfas quinicus acidus).—Acid sulphate of quinine, obtained by dissolving 100 parts of the normal salt in 12 parts of sulphuric acid diluted with distilled water, concentrating the solution by evaporation on a water-bath, and leaving it to crystallise in a cool place. It is distinguished from the normal sulphate by its much greater solubility.

*Sulfate de Cinchonine* (Sulfas cinchonicus).—Sulphate of cinchonine, obtained by dissolving the pure alkaloid in boiling water, adding dilute sulphuric acid in slight excess, and evaporating slowly in a stove.

\* *Chlorhydrate de Morphine* (Chlorhydras morphius).—Morphiæ hydrochloras, British Pharmacopœia.

*Sulfate de Strychnine* (Sulfas strychnicus).—Sulphate of strychnine, obtained by placing the pulverised alkaloid in five times its weight of boiling water, adding sufficient dilute sulphuric acid to effect its solution, and filtering. The salt crystallises on cooling.

*Sulfate d'Atropine* (Sulfas atropinæ).—Atropinæ Sulphus, British Pharmacopœia.

*Valerianate d'Atropine* (Valeras atropinæ).—Valerate of atropine, prepared by dissolving valeric acid in ether, adding enough atropine to neutralise the solution, and allowing the ether to evaporate spontaneously.

*Valerianate de Quinine* (Valérate de Quinine; Valeras quinicus).—Valerate of quinine, obtained by adding a slight excess of valeric acid to a concentrated alcoholic solution of

quinine, diluting the liquor with twice its volume of water, and allowing it to evaporate spontaneously in a stove, the temperature of which does not exceed 50° C. (122° F.)

#### ALCOOLS, ÉTHERS, CHLOROFORME.

\* *Alcool rectifié* (Alcool repurgatus).—Rectified spirit of wine, marking from 88° to 90° on the centesimal alcoholometer. Our own Spiritus rectificatus comes near enough to this for all practical purposes, as its prescribed strength corresponds to 84°.

*Alcool à 95° Centésimaux* (Alcool 95 gradus notans).—A stronger spirit obtained by digesting 30 parts of alcohol of 85° with 4 parts of dried carbonate of potassium for two days, and then distilling. It is commonly used in French Pharmacy as a substitute for absolute alcohol or alcohol of 100°.

\* *Ether Sulfurique* (Æther sulfuricus).—Æther purus, British Pharmacopœia.

\* *Ether Acétique* (Æther aceticus).—Acetate of ethyl obtained by adding gradually 6 parts of sulphuric acid to a mixture of 30 parts alcohol of 90°, and 20 parts acetic acid of sp. gr. 1.063, and distilling by the heat of a sand-bath about 40 parts of product.

\* *Chloroforme* (Chloroformum).—Chloroformum, British Pharmacopœia.

We have now completed our analysis of the chemical chapters of the Codex which relate to definite compounds. There are still certain groups of products remaining unnoticed, such as Neutral Organic Substances, Pyrogenous products, and Artificial Mineral Waters. These may be profitably discussed in separate essays in future numbers of this journal. Like our own Pharmacopœia, the Codex contains much raw material for the pharmacologist and the chemical expositor, and the articles which have appeared in these pages have not exhausted the mine. In concluding the series, the present writer cannot forego the pleasure of expressing his hearty thanks to those gentlemen who so readily accepted his invitation to write for the journal, and whose contributions have given a high character to the series. With such commentators as Mr. INCE, Mr. BRADY, Mr. CARTEIGHE, and Mr. JOHN WATTS, the readers of this journal must admit that the French Codex has been brought under their notice in a sufficiently dignified manner.\*



UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

EXECUTIVE COMMITTEE, DECEMBER 5, 1867.

Mr. HORATIO PASS, Vice-President, in the Chair.

THE minutes of the Executive Committee, held on the 7th November, were read over and confirmed.

After the correspondence was read, and the routine business transacted, it was moved by Mr. HEPPALL, and seconded by Mr. BOTT, jun., and duly carried,—

“That the Parliamentary Committee of the United Society of Chemists and Druggists be at once reappointed to work in union with the Parliamentary Committee of the Pharmaceutical Society, with similar power to act in order to secure an amended Pharmacy Bill upon the basis already agreed upon. That such Committee shall consist of the Executive Committee, with power to add, and also any delegate appointed by any district association of the Society.”

A resolution moved by Mr. BOTT, jun., and seconded by Mr. HEPELL, and supported by Mr. CROUCH, “That copies of the proposed Bill as it now stands be furnished to each honorary secretary of the different district associations of the United Society, in order to secure the judgment and co-operation of all whose interests are concerned in creating a Bill as satisfactory as possible,” was, after some discussion, and upon the suggestion of Mr. BETTY, postponed until an adjourned meeting.

It was then moved by Mr. BETTY, seconded by Mr.

\* *Erratum*, Nov., page 174, col. 1, for *Safran de Mars* read *Safran de Mars*.

CROTCH, and carried,—“That the Secretary write to the Secretary of the Pharmaceutical Society for one or more copies of the Bill as now revised by their Parliamentary Committee.” For which purpose it was agreed that the meeting should stand adjourned.

#### BUOTT TESTIMONIAL FUND.

Chairman—Horatio Pass, V.P.

Treasurers—The President and past-President of the United Society of Chemists and Druggists.

Honorary Secretary—William A. Yeats.

This fund is steadily progressing, and the Committee earnestly request that gentlemen wishing to subscribe will make their remittances payable by cheque or post-office order to the Chairman (Mr. Horatio Pass) or by postage-stamps, to enable the Committee to publish the list as early as possible.

#### SHEFFIELD ASSOCIATION OF CHEMISTS AND DRUGGISTS.

THE usual monthly meeting of this Association was held lately in the Cutlers' Hall, when Mr. E. P. Hornby read a paper on “Tobacco.” The lecturer remarked that it appeared from history tobacco must have been in use long before it became known to Europeans. Columbus found it in America, and by him it was introduced into Spain, but it was not known with any certainty in what year. In 1560 it was brought to France, and in 1586 to England by Sir Francis Drake. Turkey first knew of it in the 17th century. Since that period its cultivation and use had spread over a large portion of the habitable globe, and it was supposed that, next to tea and salt, it was the article most extensively used by man. In America tobacco was met with everywhere, and the consumption was enormous. In some parts it was so obnoxious that it became loathsome to the eye, hateful to the nose, injurious to the brain, and dangerous to the lungs. In India all classes and both sexes smoke, and so also do the Siamese and the Burmese. Even children as young as three years smoke. In China the practice was universal, and every female from the age of eight wears as an appendage to her dress a small silken or cotton pocket to hold tobacco and pipes; and the almost universal habit of smoking and chewing practised in Asia gives rise to the supposition that the use and abuse of tobacco was known there long before its discovery in America. In all, there were 20 varieties of tobacco growing, and in height it was from two to six feet. The tobacco known as Virginian was what we were most acquainted with. In 1662 Virginia raised 60,000lbs., and the quantity exported from thence in 1689 was 120,000lbs., while the exportation from all other countries was not equal to one-half that of Virginia. Mr. Hornby then quoted statistics showing the quantity consumed annually. During the year 1851 the consumption in England alone was 28,062,841lbs.; in 1852 it was 28,558,733lbs.; in 1853 it was 29,737,561lbs.; and in 1866 it was 36,000,000lbs., irrespective of the large quantity of contraband, which the duty of 3s. 2½d. per pound held out as an inducement to the smuggler. In Europe the consumption was restricted by the heavy duties imposed upon it, and the United Kingdom was said to be less than most other European countries. According to the calculation of Mr. Crauford, the average consumption of tobacco by the human race was one thousand millions of pounds, or 70 oz., per head; and the total produce, at two millions of tons, or 4,480 millions of pounds, at 800lbs. per acre, would require five and a half million acres of rich land to be kept constantly under cultivation. And, as a further illustration of the magnitude of the production, and one that would strike them most forcibly, taking the consumption of one quarter of wheat per head per acre, or in round numbers 29 millions of quarters, weighing about six millions of tons, the tobacco raised was equal to the consumption of ten millions of our countrymen, and taking the price of tobacco at as much per pound as flour is per stone, it showed they had only to dispense with it as a luxury and more money would be saved than would provide food for the nation. The medicinal properties of tobacco were narcotic and stimulant, and the expressed oil was highly poisonous, one drop rubbed on

the scalp of an infant having been known to produce death. In conclusion, Mr. Hornby said there was no doubt that the use of tobacco produced intemperance, but expressed an opinion that the influence it exercised in keeping working men at their own homes counterbalanced the evil of those who visited public-houses.—A vote of thanks was passed to the lecturer.

#### LAW AND POLICE.

LIEBIG'S EXTRACT OF MEAT COMPANY (LIMITED) v.

HANBURY.

THIS cause came before Vice-Chancellor Sir W. P. Wood on the 20th ult. It was a bill by the plaintiff company for the purpose of restraining the defendants, who carry on business as wholesale and retail chemists at Plough-court, Lombard-street, under the style of “Allen and Hanbury,” from selling any extract of meat as “Liebig's Extract of Meat,” or under any other title so as to lead purchasers to suppose that they were obtaining extract of meat of the plaintiffs' manufacture. The plaintiffs are a joint-stock company formed in 1865, and their case is that by purchase in that year of all the rights and property of the Fray Bentos Company (a company established on the River Uruguay in South America for the manufacture on a large scale of extract of meat, under the sanction, and subject to the analysis of Baron von Liebig), they acquired the exclusive right to affix Liebig's name to the extract of meat manufactured by them in South America. It appeared that Baron von Liebig, who had sometime before 1847 discovered his process of making an extract of meat, and explained it in a work published in that year at Munich, called the “Annals of Chemistry and Pharmacy,” was in 1862 visited by a Mr. Giebert, of Hamburg, who had been engaged for many years as an engineer in South America. Being struck with the enormous waste in that country of animal food fit for human consumption, Mr. Giebert, after meeting with Liebig's “Letters on Chemistry,” determined to learn from the Baron himself the mode of preparing the extract of meat, and afterwards to establish a manufactory in South America. Baron Liebig gave Mr. Giebert every assistance in his project, and introduced him to Professor Pettenkofer, of Munich, who admitted him to the Royal Pharmacy, and made him acquainted with all the details of the process of preparation. Mr. Giebert returned to South America, and after some preliminary difficulties succeeded in establishing a manufactory at Fray Bentos, on the River Uruguay. In sending to Baron Liebig the first results of his manufacture, Giebert expressed a desire that the extract having been prepared according to the method prescribed by the Baron should be designated “Extractum Carnis Liebig.” The Baron consented to this on condition that the extract fulfilled certain conditions, and also promised without receiving any compensation, to analyse his consignments, and in the event of their possessing the qualities required by science, to guarantee its genuineness on condition that the retail price of the extract should not exceed one-third of the then price in Europe. After obtaining this promise Giebert formed at Antwerp a *société en commandite* for the purpose of manufacturing in Fray Bentos and importing into Europe and selling the “Extractum Carnis Liebig.” In 1865 the plaintiff company purchased all the rights and property of the Société de Fray Bentos, including the benefit of their arrangements with Baron Liebig for the sole and exclusive use of his name in connexion with the extract of meat, which privilege was expressly continued to the plaintiff company by deed poll under the hand of Baron Liebig, dated the 12th of April, 1866. The defendants, Messrs. Allen and Hanbury, who are chemists in Plough-court, Lombard-street, were for some time in the habit of selling the extract of meat manufactured by the Fray Bentos Company, but shortly before the filing of the bill the plaintiffs discovered that they were advertising for sale “Liebig's Extract of Meat, manufactured on the establishment of Robert Tooth, Esq., of Sydney, Australia.” A correspondence followed, in the course of which it was suggested on behalf of the plaintiff company that the extract manufactured by Mr. Tooth should be called, to prevent any mistakes, “Tooth's Extract of Meat,” adding

(if the fact were so) the words "prepared according to Liebig's process." This suggestion was not, however, complied with, and the present bill was filed. It should be added that Mr. Tooth had proposed to Baron Liebig that he should nominate some gentleman to superintend the manufacture of the extract at Mr. Tooth's farm, and allow the use of his name on every package made after his process, but the Baron appears to have declined the proposal in consequence of his arrangement with the Fray Bentos Company.

The evidence on both sides was very voluminous, and was directed on the part of the defendants towards showing that extract of meat with Liebig's name attached to it was a term of art well known in the Pharmacopœia, in scientific treatises, and in the humbler but not less useful works for kitchen use (notably Miss Acton's "Cookery Book"). The plaintiffs, on the other hand, adduced evidence in reply for the purpose of showing that the term "Extractum Carnis Liebig" was used to designate the extract of meat manufactured by the Fray Bentos Company, and that only; and was unknown in this country until 1865.

The case for the defendants, so far as it was indicated by their evidence, was in substance that Baron Liebig's process was published to the world many years before the institution of the Fray Bentos Company, and had been designated by his name, not for the purpose of asserting any exclusive right of manufacture or for his own profit, but in order to distinguish it from other extracts of meat prepared in a different way. The extract had been manufactured in Germany in large quantities, according to Baron Liebig's prescription, and was well known in this country long before 1865, and neither the plaintiffs nor any one else had any exclusive right to the title "Extractum Carnis Liebig," which was a term of art, capable of being used by every one who manufactured extract of meat after the Baron's recipe, and in no sense the sole property of the plaintiffs.

Mr. Giffard, Q.C., Mr. Druce, Q.C., and Mr. Eddis, for the plaintiffs, contended that although the defendants might, if they pleased, describe their extract as extract of meat, prepared according to Liebig's recipe, they were not entitled to adopt the particular distinguishing name which had acquired a commercial celebrity and value in the hands of the plaintiffs, and had been purchased by them for valuable consideration as one of the privileges of the Fray Bentos Company. The evidence showed that down to 1865 the term in use in cyclopædias, cookery books, and pharmacopœia manuals was extract of meat simply, without the addition of Liebig's name; and it was not until the Fray Bentos Company, under the directions of Baron Liebig himself, had successfully manufactured on a large scale for the first time this extract that it acquired the title "Extractum Carnis Liebig" under the Baron's own sanction. The defendants were aware of the value of that sanction, for Tooth had himself applied to Baron Liebig to allow his name to be used upon the packages of extract from Australia, and declined to use such a designation as would effectually distinguish his goods from those manufactured by the plaintiffs.

Mr. W. M. James, Q.C., Mr. Kay, Q.C., and Mr. Horton Smith appeared for the defendants, but were not called upon.

The Vice-Chancellor (without hearing the defence) said that the plaintiffs had not made out any case for relief. Some faint attempt had been made to establish a similarity in the bottles, &c., but this had not been much pressed, and properly so, as, with the exception of the name "Liebig's Extract," there was really nothing in common between them. The plaintiffs had wholly failed in establishing upon the evidence that the only thing hitherto existing in commerce under the title "Liebig's Extract of Meat" was the extract manufactured by the Fray Bentos Company. The process of Liebig was published to the world in 1847, and was designated by his name, in order, as he himself said, that it might be distinguished from other and inferior compositions. Large quantities of extract were annually manufactured in Germany under this name and according to the Baron's process which was proved to have been certainly known in England before 1865. He might add that the prospectus of the plaintiffs themselves assumed that the term was in common use, as it stated that the object of the company was "to manufacture on a large scale the pure and

genuine 'Extractum Carnis Liebig' with the assistance and under the immediate control of Baron Liebig." There was nothing in his view of the cause fraudulent in the course taken by the defendants. They had done all that they were bound to do in putting Mr. Tooth's name and address prominently upon their pots. It was to be observed, too, that a short name was of very great importance to the sale of an article, and the defendants, who were manufacturing according to Liebig's prescription, which was open to the world, might well prefer to call their extract by the short and simple title "Liebig's Extract" to adopting the more unwieldy description "Prepared according to Liebig's process." It appeared to him that the defendants had done nothing more than go into the world fairly to compete with the plaintiffs in the manufacture of this article according to the same process. The bill would, therefore, be dismissed with costs.

"PYRETIC SALINE."--LAMPLOUGH v. BALMER.

This cause, partly heard on the 21st ult., was disposed of by Vice-Chancellor Sir W. P. Wood, on the 3rd inst. The plaintiff, who is a chemist and druggist in Holborn, claims to have invented, in 1833, an effervescing preparation, called "Lamplough's pyretic salts," and also "Lamplough's effervescing pyretic saline," which has acquired considerable reputation in this country, and also in tropical countries, especially in the East and West Indies and Africa, in cases of fever and cholera. The defendant, who is a retail chemist in St. John's-street-road, Islington, has for some time acted as the plaintiff's agent for the sale of "pyretic salts;" but, as the bill alleges, has recently been selling what he calls "Balmer's effervescing pyretic salt," in bottles similar to those used by the plaintiff, resorting, according to plaintiff's view, to what has been elsewhere termed "the untradesman-like falsehood" of saying, "it's the same concern, only you get more for your money." In restraint of such sale, and on the ground that "pyretic salts" was a term of art appropriated by the plaintiff to the preparation of which he was the first and true inventor, so that any one asking for pyretic salts would intend the compound of the plaintiff; the present bill was filed.

The defendant's case was that the plaintiff was not entitled to appropriate and, as it were, claim a patent right in the term "pyretic salts," which was a term well known in medicine; and that there was no secret in the preparation of the compound to any skillful chemist. He also insisted that his own preparation was not at all inferior to that of the plaintiff, and was substantially the same, being composed of the same or similar ingredients. Among the numerous advertisements put forward by the plaintiff was a small pamphlet, devoted to setting forth the manifold virtues of the genuine pyretic salts as prepared by Mr. Lamplough, and their wondrous efficacy in maladies of all kinds for both man and beast. The following passage from the pamphlet created some amusement when read out to a more than usually crowded court, and will bear quotation:—

"Recommended by the *Acete* (sic) of the profession as peculiarly adapted to the many complaints prevalent in this as well as tropical climates, the effects of hot weather being to promote undue perspiration by withdrawing the saline fluid from the body has proved the cause of the physical changes it then sustains. Man and the inferior creations are similarly affected. The brute creation, led by instinct, strikingly illustrate the necessity of supplying salines to the system. The buffaloes in the interior of America suffer from fever, and instinctively seek the vivifying draught of the salt lakes,—wild by nature, and shunning the haunts of man when in health, they dare, at this period, the hand of the destroyer; wasted by burning fever and thirst, they seek the relief Providence has provided for them in the abounding salt lakes of the country, of which, after partaking freely, they recover their natural health, and return to their native woodland pastures with renewed vigour —

"Shall man, the great master of all,  
The only insensible prove?"

No. Lamplough's pyretic salts are appreciated by thousands, etc."

The Vice-Chancellor, on the first hearing, observed that though he was very clear as to the defendant's demerits, he was not so convinced of the merits of the plaintiff. Many



points in his case required explanation before the Court could grant him relief. For instance, the name of Dr. Stevens had been used on the wrapper, and some of the advertisements were ingeniously worded so as to convey the impression that that gentleman had really recommended the plaintiff's preparation. Then there was that most extraordinary statement that out of 465 prisoners in Coldbath-fields Penitentiary, 461 had recovered from cholera and other diseases by the use of this preparation. The Court, no doubt, was every now and then compelled to protect all sorts of absurdity, but it could not be asked to assist absolute falsehood. The plaintiff would have the opportunity of giving explanation upon these points of doubt in his case by the motion being ordered to stand over until the first seal after Term.

When the case was brought on again on the 3rd inst., an affidavit by Dr. Stevens was produced, confirming the truth of the statement that out of 465 cases of cholera in Coldbath-fields, treated by him on the saline principle, 461 had recovered, and stating that he was in the habit of recommending plaintiff's pyretic saline as a valuable preparation, and that it was the same preparation as that referred to in a medical work published by him, as used by him successfully in cholera and fever cases at Coldbath-fields, in the West Indies, and elsewhere. In reference to his use of the words "Royal letters patent," the plaintiff stated that it was not used for the purpose of securing any advantage to himself, and that he had never in any of his advertisements, handbills, or wrappers, claimed to be the patentee, or in any way represented it as a patented article. For twenty-five years he had paid the Government duty on pyretic saline as a patent medicine, until 1860, when he found it was of a class exempted from duty under the Act of the 3rd of William IV. Having on his hands several thousands of the stopper labels (with "Royal letters patent" upon them) he had made use of them, as they bore his signature, and to avoid waste. The great merits of "pyretic saline" and its successful operation in cholera and fever cases in the East and West Indies and on the coast of Africa were also attested by numerous testimonials from colonial governors, magistrates, and others.

Mr. Druce, Q.C., and Mr. Dundas Gardiner, for the plaintiff, submitted that the points that had occasioned any doubt in the plaintiff's case were now sufficiently explained, and the truth of his statements confirmed; and that the inadvertent use of the words "Royal letters patent," forming, as it did no part of the title sought to be protected, was no ground for refusing relief to the plaintiff, who had used the words without the smallest intention of representing his preparation as patented, or of conveying any false impression.

Mr. Willcock, Q.C., and Mr. Cracknell, for the defendants, were not called upon.

The Vice-Chancellor said that he was very sorry to be obliged to decide this case against the plaintiff. He was sorry, as the plaintiff had invented a preparation which seemed to have acquired considerable reputation, and had been found very useful; while, after the explanation given by Dr. Stevens, it would be very unreasonable for this Court to refuse relief on the ground of the statement upon the wrapper of the cure of that astonishing proportion of cholera patients in Coldbath-fields Prison. The statements made in advertisements of this nature were often of a very ridiculous character, but where they contained nothing absolutely false they would be looked upon in the same way as the flowery panegyrics used by auctioneers. Finding, then, that the plaintiff's statement as to the 461 prisoners was supported by Dr. Stevens, he the more regretted that he must refuse the plaintiff relief. He did not do so from any merits in the defendant's case; on the contrary, as he had before observed, he was struck with their demerits. The plaintiff had appropriated to his preparation the term "pyretic saline," by being the first person to use the two words in combination, and apply them to a medical compound which had acquired a reputation in the market under that name, and as being of the plaintiff's own manufacture solely. No one until the defendant had ever thought of using the term "pyretic saline," to denote any other preparation than that of the plaintiff, and it was a mere subterfuge in the defendant to call what he manufactured "pyretic salts" instead of "pyretic saline." But for the use of the title "Royal letters

patent," to which he had no right, he should, without hesitation, have granted the plaintiff an injunction. That defect, however, was fatal to his case. There was no patent for the preparation, and he had no right to represent to the public that there was. The use of the term was objectionable in two ways, as (1) it might deter other persons from endeavouring to manufacture, and (2) a higher price could be exacted from purchasers when they saw that the article was described as patented. The explanation given by the plaintiff of his use of these words (to save wasting labels which would otherwise have remained useless on his hands) was, he felt bound to say, not satisfactory. There must have been some object in using the words, or, at all events, the law would presume the existence of some object in the absence of a better explanation than that given by the plaintiff. The motion must, therefore, be refused.

#### POSTAGE STAMPS.—ROBBERY BY AN ERRAND BOY.

At the Mansion House, on the 2nd inst., in the case of a boy of fourteen, who had been a week under remand, and who was charged before Alderman Lusk, M.P., with stealing postage-stamps from an office in which he was errand boy, the complainant, Mr. Alfred Preston, of Leadenhall-street, druggist, while not wishing to press the charge, in consideration of the boy's age, and of his having been already eight days in prison, said he desired to call the attention of the Bench to the facilities which were given by the Post Office for the purchase of postage-stamps. He had seen the postmaster on the subject, who had told him that, unfortunately, the tendency of those facilities was, in many instances, to create thieves, but that the Post Office had no alternative but to buy stamps by whomsoever they were tendered for sale. The complainant had no doubt the boy, in this case, had sold the stamps he was charged with stealing at a post-office, but of that there was no evidence. Mr. Alderman Lusk said cases—and one in particular—had come under his own knowledge as a magistrate in which persons who had stolen postage-stamps from their employers, had afterwards sold them at a post-office, and he thought the matter was well worthy the consideration of the Postmaster-General. The boy was discharged.

#### ALLEGED MALPRACTICE BY A SURGEON-DENTIST.—ABSOLON V. STATHAM.

Twelve months ago, an action was tried, in which a sempstress named Absolon sought to recover damages from Mr. Statham, a surgeon-dentist, for having used chloroform in the extraction of some of the plaintiff's teeth, thereby doing her great injury. The plaintiff's case was, that she went to the Great Northern Hospital to have a tooth drawn, that Mr. Statham, against her express desire, gave her chloroform, injured her mouth greatly, and induced a state of health which prevented her from making her living. These statements were denied, and the jury was then discharged without agreeing to a verdict.

On the 27th and 28th ult., the case was again tried in the Court of Queen's Bench, before the Lord Chief Justice and a special jury. At this fresh trial, Mr. Gant deposed that the present state of ill-health of the plaintiff could not be connected with the operation on the teeth performed by Mr. Statham; Dr. Kelly, that she was now suffering from hysterical paralysis, and that chloroform had, on a former occasion, produced an aggravation of her disease, hysteria, from which she suffered; Dr. Cholmeley, that an overdose of chloroform, short of death, could produce no permanent effect on the patient; Sir William Fergusson, that it was right to extract the plaintiff's teeth, and to give chloroform to her, and that the illness was not due to chloroform. On the last day of the trial, Dr. Anstie stated that the plaintiff's excited condition, when chloroform was given by Dr. Kelly, was due to the mode of administration, and that it was impossible that the present symptoms could be ascribed to the anæsthetic. Dr. Richardson and Dr. Sansom's evidence was confirmatory.

A verdict was given for the defendant.

Commenting upon this case, the *Lancet* observes:—"We need not say how heartily we rejoice in the final collapse of the miserable charge by which a most honourable and respected practitioner has had his life made wretched for years. We cannot but feel, however, that the congratula-

tions of Mr. Statham's friends must be mingled with grief and indignation when they remember the sad injury to his health which has been produced by the mental distress in which he has so long been kept."

#### A CHEMIST CONVICTED OF FRAUD.

At the Middlesex Sessions, on the 20th ult., Andrew Anderson, 33, chemist, was charged with obtaining a quantity of goods from Messrs. Shoobred, of 156, Tottenham-court-road, by falsely pretending that a certain check was a good and valid check for £7 10s. 2d. From the evidence of Martin Ayling, an assistant to Messrs. Schoolbred, it appeared that on the 3rd of October, a woman calling herself Messrs. Anderson obtained goods to the amount of £7 10s. 2d. On the same day, a porter in the establishment took the goods to the shop of the prisoner, at 21, Goodge-street, but refused to leave them unless he was paid. On the 5th, Ayling himself took the parcel to the prisoner's house and the invoice, not receipted, and there saw Mrs. Anderson. Mrs. Anderson took the invoice, and was absent about five minutes. She then returned with the invoice, and a check for £7 10s. 2d., which she handed to Ayling, and he at once saw that the check was not signed, and handed it to Henry Walker, the prisoner's assistant, who took it upstairs to the prisoner, laid it before him, and said to him, "The gentleman says it is not signed." The prisoner said nothing, but signed the check, and returned it to Walker, who took it to Ayling. The prisoner at that time was upstairs in his bedroom; Mrs. Anderson was there also, and the parcel of goods was on a table in the room. Ayling then took the check and left the goods. When the check was presented at the Regent-street branch of the Union Bank, it was returned in consequence of there not being sufficient assets to meet it. From the evidence of the bank cashier, it appeared that the prisoner had an account there, but that on the 22nd of May last, there was only 2s. 1d. to his credit, and since then nothing had been paid in, but two checks for £8 and £2 5s. had been presented, but refused payment for the same reason as that for £7 10s. 2d. Witnesses were called for the defence, to show that the prisoner was negotiating for the sale of his business, and, therefore, might reasonably expect to have money wherewith to meet the checks he had drawn, but there was no proof that any definite offers had been made by a purchaser. The prisoner received a good character. The jury, after a short consultation, returned a verdict of Guilty. The Assistant-Judge sentenced him to be imprisoned and kept at hard labour for three months.

#### GOSSIP.

REFERRING to the Medical Acts Amendment Bill the *Lancet* states that on the re-assembling of Parliament in February the Bill will be brought in as a Government measure by Mr. Gathorne Hardy.

One of the difficulties connected with the disposal of town sewage is its excessive dilution, which is partly owing to the quantity of rain-water admitted into the sewers. The *Builder* holds that the rainfall on all buildings ought to be arrested before it reaches the ground, so that it may be used for household purposes; one effect of which would be to relieve the pressure now put upon the Water Companies to keep up an enormous supply. Apart from its economical bearings, the utilisation of rain-water would put an end to a common practice of connecting rain-water pipes immediately with drains, whereby noxious gases are able to rise in close proximity to bed-room windows, especially where there are attics.

In memory of the late Dr. Jeaffreson, many years physician to the Fever Hospital, Liverpool-road, an exhibition of the value of £20 a year is to be established in St. Bartholomew's Medical School, to be called "The Jeaffreson."

A handsome silver cup was presented to Mr. Frederic Moger, of Highgate, on Monday, the 11th ult., bearing the following inscription:—"Presented to Frederic Moger, Esq., M.R.C.S., by his patients of the Highgate Dispensary, in testimony of his kind attention. November, 1867."

A magnificent meteoric display was seen in all parts of the United States on the morning of November 14, beginning about 3 o'clock and continuing until daylight. In some places it was estimated that the meteors appeared at the rate of 1,500 an hour. Some of them were of rare beauty, and one seen at Philadelphia continued visible for ninety seconds.

On the night of the 2nd inst. a serious fire broke out in the house of Mr. B. Beddow, 22, South Audley-street. It was caused by the boiling over of chemicals, and the damage is thus described:—"Boiling-room and contents damaged by fire, and ceiling over by cutting away; contents in blacking and mixing rooms slightly by heat and smoke." The proprietor, Mr. Beddow, was slightly burnt. Insured in the Sun Fire-office.

A third donation of £5,000 has been made to the University of Edinburgh by Sir David Baxter, the head of the firm of Baxter Brothers, and Co., Dundee. The Senatus—to whom the disposal of the gift is left—propose to found a Professorship of Engineering and the Mechanical Sciences, on condition of Government providing an annual sum of £200 a year to the Professor, who would receive a similar sum from the endowment, making the salary £400 besides the class fees. There appears every prospect that Sir David's munificence will lead to the establishment of this long-desired addition to the University.

The *Medical Times and Gazette* states that Emma, Queen of the Sandwich Islands, is daughter of Mr. Thomas Charles Ryde Rooke, a member of the Royal College of Surgeons of England. In the last published Calendar he appears as still residing on the Sandwich Islands. His daughter married Kamehameha IV. in 1856.

Mrs. Margaret Carr, of Pittsburg, Pennsylvania, bought a black cat for the purpose of taking three drops of blood from it to be administered to a grandchild suffering from croup. Thereupon her neighbours raised a tumult, charging her with witchcraft, and she was obliged to call upon the authorities for protection. Mr. William Owens, her lawyer, brought twenty witnesses to prove that the child recovered the moment the dose of blood was administered.

The opening of the School of Medicine at Paris for the winter session was the occasion of a series of manifestations of political feeling and unruliness by the assembled students. On the first day, Professor Gavaret vainly attempted to commence his course, but he could not be driven from his chair until he had remained in it for one hour, according to the regulations. Next day, Professor Robin appeared to lecture, but being more impatient than his colleague, he walked off at the end of ten minutes. On the third day, M. Wurtz, the Dean, accompanied Professor Lasègue, and succeeded in enforcing order. In the words of the Paris correspondent of the *Lancet*:—"The Dean, bolted in, got into a tremendous passion with the auditory, and, walking up and down the reserved space, upbraided them with the thoughtlessness and folly of their conduct. He fairly subdued the assembly, and walked off as abruptly as he had appeared, amid the thundering applause of the converted auditory. M. Lasègue could therefore commence his lecture, and delivered an eloquent discourse on Broussais and Andral, his predecessors in the chair which he at present occupies."

The *Figaro* states that the net profits of the Paris Universal Exhibition will amount to above 3,000,000 francs, which, according to arrangement, should be divided in equal portions between the Government, the City of Paris, and the society of guarantors. The latter made themselves liable for the sum of 12,000,000 francs, consequently they would be entitled to receive nearly 8½ per cent. upon the amount of their risk. It is believed, however, that they will decline to receive any gratuity, and in this case it is anticipated that the State and the City of Paris will follow their example, in which case the entire three millions will be devoted to some public purpose.

Mr. Joseph Ince has been elected Fellow of the Anthropological Society, Fellow of the Royal Zoological Society, Member of the Entomological Society, and Member of the Royal Society of Literature.

On the 4th ult. the jubilee of Dr. MacLachlan, of Rothesay, was celebrated by his friends and patients presenting a

silver épergne and a purse of three hundred sovereigns to him, and a gold bracelet to his wife. The following words were inscribed upon the épergne:—"Presented, with 300 sovereigns, to Thomas Maclachlan, M.D., as a token of esteem for his professional ability and personal worth on the occasion of completing the fiftieth year of his practice in Bute.—Rothsay, November 4th, 1867." The bracelet, which contained a beautifully executed photograph of Dr. Maclachlan, also bore the following inscription:—"Presented to Mrs. Maclachlan, on the occasion of her husband's jubilee.—Rothsay, November 4th, 1867."

The recent explosion at Woolwich has led to the adoption of useful precautionary measures. All the boys employed in the cartridge sheds at the Royal Arsenal have been provided with new fire-proof dresses. The rule that boys under the age of twelve years are not to be employed in the Arsenal is to be rigidly enforced.

At a meeting of members of the medical profession, lately held at the Ophthalmic Hospital, Southwark, the following resolution was unanimously agreed to:—"It is desirable that a medical society be formed on the south side of the Thames, and that such society be called the 'South London Medical Society.'"

### GAZETTE.

#### BANKRUPTS.

BAUMGARTEN, ADOLPH, late of Cullum-street, chemist.  
 DAVEY, J. E., Birmingham, surgeon.  
 DICKINSON, ROBERT WILLIAM, York, druggist.  
 DOUGHTY, JAMES, Liverpool, chemist.  
 FIRTH, JOHN, Batley Carr, Yorkshire, dealer in india-rubber goods.  
 MARTLAND, WILLIAM, Blackburn, surgeon.  
 MORGAN, RICHARD THOMAS, Llanelly, chemist.  
 MUDD, ARTHUR ROBERT, Hadleigh, Suffolk, chemist.  
 POLYBLANK, GEORGE HENRY, Piccadilly photographer.  
 PURDY, G., Birkenhead, dealer in potted meat.  
 REYNOLDS, JOHN GULFORD, late of Manchester, pickle manufacturer.  
 RUTT, FREDERIC ROBERTS, Crozier-street, Lambeth, mineral water manufacturer.  
 SAUNDERS, RICHARD, Plymouth, perfumer.  
 SLACK, GEGEGE, Sheffield, druggist.  
 SMITH, ROBERT, Upper Holford street, Kensington, surgeon.  
 SORSBY, JAMES, late of Doncaster, chemist.  
 STRANGER, G. E., Nottingham, surgeon.  
 TURNER, JOSEPH, Brigg, chemist.  
 WELLS, WILLIAM, Caterham, chemist.  
 WILDING, J. P., Hereford, surgeon.  
 WOVS, LEON, Manchester, cork cutter.

#### PARTNERSHIPS DISSOLVED.

BAGGALEY and EVANS, Ince, Lancashire, chemists.  
 BAYLEY, F. O. RICHARDS, and W. EVANS, Both, Cardiganshire, soda-water manufacturers.  
 COOPER and CRANSWICK, Piccadilly, brush manufacturers.  
 HOLLAND and KENYON, Fendlebury, Lancashire, chemists.  
 LLOYD BROTHERS, Ruthin, soda water manufacturers; as far as regards W. LLOYD.  
 MURCH and SON, Mabledon-place, North-mews, Burton-erescent, and Bernard-mews, Little Guildford-street, veterinary surgeons.  
 PLACE, WILLIAM THOMAS, Wakefield, chemist.  
 PERMAN and Co., Queen-street, Southwark Bridge-road, soap makers.  
 POTTOW J. N. and H. LEACH, Hemietta-street, Brunswick-square, druggists' sundrymen.  
 PRANGLEY and Co., Bristol, agricultural chemists.  
 WIMPENNY, J. and T. W. GREEN, Rawtenstall, surgeons.

#### SCOTCH SEQUESTRATIONS.

T. LAWRIE, Cupar, soda-water manufacturer.  
 WILSON and MONEY, Glasgow, cod-liver oil agents.

### CHEMICAL ATOMS.

PROFESSOR KEKULÉ, of Ghent, thus defends the atomic theory of chemical combination:—

"The question whether atoms exist or not has but little significance in a chemical point of view; its discussion belongs rather to metaphysics. In chemistry we have only to decide whether the assumption of atoms is an hypothesis adapted to the explanation of chemical phenomena. More especially have we to consider the question, whether a further development of the atomic hypothesis promises to advance our knowledge of the mechanism of chemical phenomena.

"I have no hesitation in saying that, from a philosophical point of view, I do not believe in the actual existence of atoms, taking the word in its literal signification of indivisible particles of matter. I rather expect that we shall

some day find, for what we now call atoms, a mathematico-mechanical explanation, which will render an account of atomic weight, of atomicity, and of numerous other properties of the so-called atoms. As a chemist, however, I regard the assumption of atoms, not only as advisable, but as absolutely necessary in chemistry. I will even go further, and declare my belief that *chemical atoms exist*, provided the term be understood to denote those particles of matter which undergo no further division in chemical metamorphoses. Should the progress of science lead to a theory of the constitution of chemical atoms—important as such a knowledge might be for the general philosophy of matter—it would make but little alteration in chemistry itself. The chemical atom will always remain the chemical unit; and for specially chemical considerations, we may always start from the constitutions of atoms, and avail ourselves of the simplified expression thus obtained, that is to say, of the atomic hypothesis. We may, in fact, adopt the view of Dumas and of Faraday, that whether matter be atomic or not, thus much is certain, that, granting it to be atomic, it would appear as it now does."

### LIME JUICE.

THE following regulations in regard to the supply of lime or lemon juice from a Customs' bonded warehouse have been issued by the Marine Department of the Board of Trade:—

1. That lime or lemon juice be received into any Customs' bonded warehouse approved for the deposit of ships' stores, on a written request being handed to the controller of accounts or warehouse-keeper (as the case may be), who shall, upon the receipt of such request, issue a book, in which the necessary particulars of quantity, etc., shall be recorded by the proper officers of the outdoor department.
2. That such juice be deposited in the bonded warehouse at the expense of the person making the request; and after it has been duly inspected, passed, certified, and fortified, it be subsequently shipped from the warehouse under the regulations applicable to bonded stores.
3. That the juice, after being deposited in the Customs' warehouse, shall be first inspected by an officer appointed by the Board of Trade for that purpose, who is to record his inspection and approval of the juice, and of the spirit to be used for fortifying the juice in the Customs' book; and that then the operations of fortifying and bottling, as directed by the 3rd clause of the 4th section of the Merchant Shipping Act, 1867 (30 and 31 Victoria, cap. 124), be performed in the presence of the proper officers of Customs, who are to record in the book issued by the controller of accounts or warehouse-keeper the strength, description, and quantity of spirit used for fortifying.
4. That the juice, after inspection by an officer appointed by the Board of Trade, and after being fortified with 15 per cent. (calculated at proof strength) of proper and potable spirits, approved, by such officer, be bottled in glass bottles of imperial (and not reputed) measurement, containing not less than one imperial quart, and not more than two imperial quarts, or in bottles of glazed earthenware of imperial (and not reputed) measurement, containing not less than one imperial gallon, and not more than two imperial gallons; and that the said glass bottles be packed in straw or other suitable packing, in wooden boxes; and the said glazed earthenware bottles be properly and satisfactorily protected by wicker-work, and that the said bottles, whether of glass or of glazed earthenware, be secured by fixing the label approved for that purpose round the neck and cork, and that the bottling of each cask be completed in one continuous operation.
5. That the juice, when inspected, bottled, fortified, and labelled, in accordance with the foregoing regulations, be allowed to be shipped, subject to the following regulations in regard to the maximum size of bottle:—Two-gallon glazed earthenware bottles to be allowed only for vessels carrying a crew of sixty persons or upwards; one-gallon glazed earthenware bottles for forty persons or upwards; half-gallon glass bottles for twenty-one persons or upwards; and quart glass bottles for twenty persons or under. But quart bottles may be shipped in all cases if preferred.
6. That application be made to the Board of Customs from time to time for the labels as they may be required."

## LONDON MILK.

The *Pall-Mall Gazette* truly remarks that the *British Medical Journal* deserves the thanks of the public for its exposure of the nefarious manner in which the milk trade of London is conducted. In order to gain an insight into the real quality of London milk, the proprietors of that journal obtained specimens of milk from ten first-class establishments at Notting-hill, Knightsbridge, Kensington, St. Giles, Blackfriars, the Strand, Bayswater, Paddington, Kennington, and Fulham, and submitted them to Dr. Voelcker for analysis. The price at which these specimens were obtained was in every instance, save two, 4d. a quart. At Knightsbridge and at Kensington, the charge was 5d. a quart, the quality being in both these cases considerably worse than where milk was being sold at 4d. a quart. In every instance save one, the milk, sold as whole milk, was skim milk, lowered with water until its real value was less than 1d. a quart; and the more wealthy the neighbourhood, and the more showy the shop in which the milk was sold, the worse proved the article supplied. In the Knightsbridge establishment, Dr. Voelcker reports that the milk sold at 5d. a quart is skimmed milk, from every gallon of which, valued at 16d., eight pennyworth of cream had been abstracted, and to which an amount of water had been added which gave the dairyman an illicit profit of 14d. on every gallon sold, over and above what would have been a fair trading profit. Of the ten samples analysed, this Knightsbridge sample was the worst save one. One sample, and one only, stood the test of analysis triumphantly, and that was supplied by the Aylesbury Dairy Company, 33, Hereford-road, Bayswater, and proved to be pure milk, with the full amount of cream in it. The *British Medical Journal* conclusively shows that—

The profit made upon the sale of milk in London is three times that which the honest trader, who sells really pure milk, can possibly obtain; it therefore follows that unless the latter does a much greater amount of business, the dishonest man has the advantage. The custom of watering milk is so general, and the profit so immeasurably greater than any upon which the honest trader can calculate, that the latter is almost driven out of the market, especially as the unscrupulous milkman does not hesitate to employ a portion of his large, but ill-gotten, gains in fees and bribes to the servants of the families whose custom he has reason to dread is about to be transferred to his more honest opponent. When, therefore, any one has the courage to embark in a trade having such a bad reputation with the intention and the determination to carry out every detail in a fair and legitimate manner, he deserves—and to the public alone can he look for—that support which shall place him on an equality, as far as profit is concerned, with the rogues with whom he has to compete.

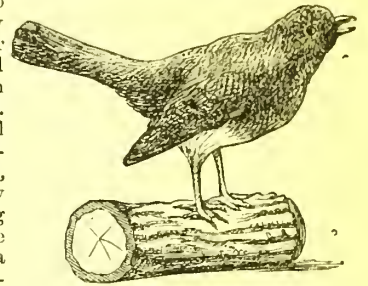


## CHRISTMAS PERFUMERY.

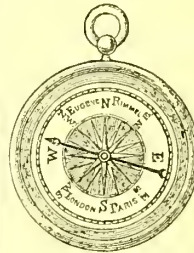
OUR principal perfumers evidently believe that old Father Christmas can be led by the nose, and in the early days of December they begin to fill their shops with sweet-scented elegant trifles specially adapted for presents. Mr. RIMMEL never fails to provide attractive novelties; and is deservedly the "first favourite" with those who are accustomed to receive pretty presents. He avails himself of French taste and French ingenuity in the fabrication of his nick-nacks, and never misses a chance of applying a popular name to a new article. He has frequently turned the familiar titles of Dickens's annuals to good account; thus he dispensed "Dr. Marigold's Prescriptions" in the form of perfumes, and last year he gave us "The Mugby Boy's

Toilet Companion." The title of Dickens's new work, "No Thoroughfare," seems most inapplicable to a case of perfumery, but Mr. Rimmel has employed it to designate a pretty trick-box of peculiar construction, containing two bottles of scent and a cake of fancy soap. You open the

box in the usual manner, and find a second lid made of glass, upon which is the aggravating legend, "No Thoroughfare." The trick of opening this second lid has to be found out before the contents of the box can be got at. Some of the more expensive perfumery cases of French design and manufacture are charming specimens of ornamental paper work. One elegant form has a double lid, so that it may be opened either to disclose the toilet articles, or to exhibit a photograph. The surprise-boxes, containing single bottles of scent, and adapted for holding matches when the perfume is exhausted, take various pleasing forms, among which we may notice the familiar hooded figure of Father Christmas, pretty little German peasant girls, a knowing-looking Fox sitting on a stump, and a well-modelled life-size figure of Robin, perched upon a snow-whitened branch. We will not attempt to describe the many little things adapted for children's presents and tree-ornaments which Mr. Rimmel supplies. We must, however, call attention to the watch-shaped scent-bottles, which are particularly admired by the young folk. One of these shows the face of a watch, another, a circular almanack for the coming year, a third, the elements



of the solar system, while a fourth is at once a scent bottle and a magnetic compass.



Messrs. RICHARDSON AND Co., the fancy soap makers, of Bishopsgate-street, always have a good stock of Christmas perfumery. Some of the boxes of toilet requisites which they have introduced this year are of elegant shapes and richly ornamented; and their embossed scent-packets are among the very prettiest things of the season.

Their fancy soaps have the forms of flowers, fruits, and humble culinary vegetables; and when packed with moss in baskets or boxes, they look very nice. The most noteworthy article in the present display is a cake of beautifully transparent soap, with a perfect representation of a Swiss cottage and its surroundings in alto-relievo. Their Christmas crackers, containing strong bottles of handkerchief scent, instead of unwholesome sweets, will doubtless promote many flirtations during the season.

A WELL-DESERVED HONOUR.—The "International Societies for Aid to the Wounded in Time of War" have awarded to Mr. Condy, of Battersea, their medal, in recognition of the importance to military surgery of his discovery of the disinfecting properties of the alkaline permanganates, and the great sanitary value of Condy's fluid, as proved by the experience of the Prussian army surgeons during the late Bohemian war.—*Lancet*.

AMATEUR DOCTORING.—An inquest was lately held, by the Deputy Coroner for the Eastern Division of the County of Middlesex, on the body of a child two years of age, the son of a shoemaker of the name of Jessop, of Bethnal-green. It appeared in evidence that the child had suffered from what was supposed to be uncomplicated measles, and for which the father treated it. He took for his guide a certain book entitled "The Family Medical Adviser," by John Skelton, physician, surgeon, etc., author of "A Plea for the Botanic Practice of Medicine," etc., and "published by the author at 105, Great Russell-street, Bloomsbury." The child died, as was proved by the evidence of Dr. Sarvis, from inflammation of the lungs, and not from measles. The treatment was improper. After some very judicious remarks by the Coroner, in which he stated that if the jury took one view of the question, Jessop might be sent to Newgate, the following verdict was returned:—"Death from inflammation of the lungs; and the jury severely censure the father for not calling in medical advice."—*Lancet*.



LONDON, DECEMBER 14, 1867.

NOTICE TO SUBSCRIBERS AND ADVERTISERS.

**CORRESPONDENCE.**—All communications should be addressed to the Editor, at 42a, CANNON-STREET, E.C.; those intended for publication should be accompanied by the real names and addresses of the writers.

**SUBSCRIPTION.**—The Subscription to the CHEMIST AND DRUGGIST is 5s. per annum, payable in advance. Should a receipt be required, a stamped envelope must be sent with the amount of subscription. A specimen number may be had upon application, price 6d.

**POST OFFICE ORDERS.**—Post Office Orders to be made payable at the General Post Office to the Publisher, WILLIAM CANNING, who is alone authorized to receive accounts.

SCALE OF CHARGES FOR ADVERTISEMENTS.

	£	s.	d.
One Page .. .. .	4	0	0
Half ditto .. .. .	2	10	0
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The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Twelve insertions—if paid in advance.			
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Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

The CHEMIST AND DRUGGIST is published on the Fifteenth of every month, except when that date falls upon a Sunday, when it is published on the preceding day. It is regularly supplied direct to the Members of the Trade in Great Britain, Ireland, the Colonies, and all the principal seats of foreign commerce.

Everything intended for insertion in the current Month must be sent in before the 10th, except Employers' and Assistants' Advertisements which will be received until 9 A.M. on the morning previous to publication.

“THE CHEMIST AND DRUGGIST” FOR 1868.

MINDFUL of the proverb which assures us that there is safety in the multitude of counsellors, we have solicited our readers for suggestions respecting the future conduct of this Journal; and the issue of our request is a collection of conflicting counsels, plainly showing that there is no “common measure” of the tastes, opinions, and desires of those whom we address. The whole correspondence is, however, perfectly harmonious as an expression of goodwill towards the Journal; and we are glad that it has been elicited on the eve of our new start.

We have carefully weighed the various suggestions and monitions of our subscribers, and have decided upon a course which will allow for the full development of those departments of our Journal by which it is distinguished from other periodicals, and also for the introduction of several new features of great importance, without encroaching upon the space devoted to original scientific communications. We have resolved, in short, to enlarge the CHEMIST AND DRUGGIST, with a view of enhancing its value as a trade organ. The quarto form will be retained, but the number of pages in each monthly part will be increased to *sixty-four*; and as the pagination will be carried through the advertising portion of the journal, the year's issue will form a good thick volume. Before we enter into the details of our scheme, we must indicate the principal considerations which have led to its adoption.

Our supporters may be divided into three classes—or rather, there are three types to which our supporters approximate more or less. First, there is the Scientific Pharmacist, who takes little interest in Prices Current and Trade News, and looks upon advertising pages as so much waste paper. For him we must provide sound science and good literature, if possible, in a form conve-

nient for preservation and future reference. Secondly, there is the Chemist and Druggist, who thinks more of the commercial aspect of his calling than of its scientific basis. To him the smallest particle of information that can be turned to good account in his business is much more acceptable than a long scientific article. He takes a lively interest in every movement of the Trade, but is comparatively indifferent to the progress of Chemical Philosophy, the new refinements of Pharmacy, and the disputed questions relating to *Materia Medica*. For him we must provide Price Lists, Trade Reports, Notices of Novelties, and an ample supply of Trade news. Lastly, there is the Advertiser, who looks upon a journal as an advertising medium, and will not be satisfied with small pages packed between a cover and the journal proper, and doomed to destruction after an ephemeral existence. Of course we do not wish it to be supposed that any one of these imaginary types is represented by an actual subscriber. Many of our best supporters are at once scientific pharmacologists, enterprising tradesmen, and persistent advertisers; but we know that the only safe course which we can adopt is that based upon the knowledge that our constituency is a three-cornered one. Most of the letters we have received advise us to extend the commercial departments of the Journal; and we are forced to admit, with some reluctance, that this advice is more sound than that which is dictated by the love of pure science. From many causes, among which we may certainly count successful rivalry, the *Pharmaceutical Journal* has latterly become a worthy representative of British Pharmacy; and the *Chemical News* supplies the wants of those who are directly interested in Scientific Chemistry. We do not intend to relax our efforts to keep the CHEMIST AND DRUGGIST on a level with these periodicals, but we feel that we ought to take special pains to secure the ground which we occupy exclusively. Our Journal is the only organ of the Trade of the chemists and druggists, and we are determined to give it increased value and importance as a Trade organ.

We begin a NEW SERIES in January, because we know that many persons have an objection to commence subscribing to a journal that has run through many volumes. The Journal, as we have already stated, will be permanently enlarged to *sixty-four pages* monthly. The subscription will in future be *Seven-and-Sixpence* a year, including postage; but the price for a single number to non-subscribers will be *One Shilling*.

We will now indicate the chief features of our New Series:—

LEADING ARTICLES.

The proceedings in Parliament and elsewhere, connected with the proposed Amended Pharmacy Act, will furnish abundant material for criticism and comment. We propose to give, in addition to our leading articles, short editorial notes upon minor trade events.

PROCEEDINGS OF SOCIETIES.

The meetings of the Pharmaceutical Society, the United Society of Chemists and Druggists, and the principal country Associations, will be regularly reported for the Journal. We shall also give brief reports of the meetings of the Chemical Society, and other scientific bodies. The annual meetings of the British Pharmaceutical Conference will, as heretofore, be fully reported.

## NEWS OF THE MONTH.

The department headed "The Month" will be a far more comprehensive record of trade occurrences than it has hitherto been.

## NEW BOOKS.

The principal works on Chemistry, Pharmacy, and the allied sciences will be critically reviewed; and a monthly list of new books will be given.

## NOTES ON NOVELTIES.

We propose to extend this department, so that every new instrument or preparation which may be sold by chemists and druggists will be noticed on its introduction.

## ORIGINAL COMMUNICATIONS.

Original scientific papers, by eminent writers, will be printed from time to time. We have already made arrangements for the publication of a series of articles which cannot fail to attract attention. This series will be communicated by a Special Commission appointed to inquire into the condition and practices of

## THE VARIOUS CLASSES CONNECTED WITH THE DRUG TRADE.

We do not promise any startling disclosures, like those brought to light by the *Lancet* Commissions, but we hope to provide some interesting articles which may afford an answer to the vexed question, "What constitutes a chemist and druggist?"

## DENTISTRY, PHOTOGRAPHY, HOMEOPATHY.

In accordance with the wishes of numerous subscribers, we intend to devote a considerable space in each number to these three subjects. The information supplied by the various British, American, and Continental journals will be carefully collated, and communicated to our readers in a condensed form.

## NOTES AND QUERIES.

This department will also be greatly developed; and by a systematic division of labour, we trust that we shall be able to satisfy the most importunate querists. In addition to the answers to questions sent to us, we shall publish useful formulæ, derived from various sources. As a branch of our "Notes and Queries," we intend to start

## A COLUMN FOR STUDENTS,

containing problems in Chemistry, Pharmacy, Physics, Arithmetic, and other departments of knowledge. The solutions will be published in the number succeeding that which contains the problems, with the names or initials of those who forward them.

## TRADE REPORTS AND PRICE CURRENT.

Our Reports will refer to Chemicals, Drugs, Oils, and other articles sold by chemists and druggists; and our Mincing Lane Price Lists will be thoroughly revised each month. The majority of our subscribers would strongly object to any curtailment of this special department of our Journal.

With the present number, which we have been forced to increase by eight extra pages, our subscribers will receive a Large Sheet **ALMANACK**, containing much useful matter.

## LOFODEN NORWEGIAN COD-LIVER OIL.

*Abstract of Paper read Wednesday Evening, December 4, 1867, before the Pharmaceutical Society,*

BY MR. ROBERT HOWDEN.

MR. HOWDEN said that, from information he had received from Norway, early in the month of January, the cod fish begin their great migration from the deep sea, moving in a north-easterly direction, and concentrate themselves upon the Lofoden Islands on the Norwegian coast, about 150 miles within the Arctic circle. The object of the fish was not to find food, but to secure untroubled waters for the protection of their ova and young fry. On the arrival of the immense shoals of cod, which are prodigious and beyond computation in numbers, all other kinds of fish disappear from that locality in a remarkable manner, whereby the roe and young fry are unmolested, and cod livers only can be used by the fishermen for making the oil. On arriving on shore with his catch, the fisherman throws some of the livers into open hogsheds, and, after agitation, obtains from them a fine clear oil, which he preserves separately; others, with those partially exhausted, he secures in casks, for the process of oil-burning at his own hut. The finest oil is obtained from those fish that have just arrived from the deep sea; at their departure, after spawning, they are thin and emaciated. The great cod fishing at Lofoden, employing 25,000 men, terminates on the 14th of April. On arriving at his hut, the fisherman pours from each cask the floating oil; this, together with that separated at Lofoden, is the *Light Yellow Oil*. He then throws the livers into kettles, warms them over an open fire, and pours off the oil as disengaged: this is the *Brown Oil*. Increased heat, whereby the oil is almost blackened, produces the *Dark Tanner's Oil*. Throughout northern Europe there is a widely-spread prejudice in favour of the brown oil as a medicine, which does not appear to be well founded.

He further explained that cod are taken largely in other localities in Norway, but never alone as at Lofoden, with them being many other varieties having livers that, there is reason to believe, are used indiscriminately by the fishermen in the preparation of their oils. These northern islands of Lofoden claim to be the only place in the world where the true cod fish is found in large quantities absolutely alone. The market for the sale of oil is held at Bergen in June, where Government brokers classify the oil into light yellow, light brown, and brown. The price of the light-brown oil is at present 3s. per gallon. Mr. Möller, a pharmacist, of Christiania, has endeavoured to introduce an improved process for making the oil as follows:—Sound and large livers, not more than one day old, are to be washed, reduced to a pulp, and placed in a steam bath, where, with agitation, they yield at 120° a fine, clear, tasteless oil. The stearine being thrown down by a temperature under 40°, the oil is filtered, and considered perfect. The annual produce of oil by the Lofoden fisheries is 25,000 barrels of twenty-six gallons each; by the other Norwegian fisheries, 35,000 barrels more. Cod livers at Lofoden sell at from nine to ten specie dollars per barrel, equal to 40s. 6d. to 45s. English.

He grouped the information from Norway under five heads:—1. Lofoden Oil is true cod-liver oil, made from the *Gadus morrhua*. 2. The Light Yellow Oil is not inferior to the Brown Oil. 3. Oil sold at Bergen is not necessarily from Lofoden or pure, though called so. 4. Relative absence of colour, odour, and taste are guarantees that the oil has been properly made. 5. The annual supply of Norwegian cod-liver oil may be expected in the European markets during the month of July.

He also stated that 36,000,000 of fish are annually salted, and sold under the name of stockfish; and allowing half as many more to be consumed fresh, there would be a total of 54,000,000 of fish. These immense numbers, so far from imperilling the duration of the species, do not exceed the progeny of six female cod, each of which is capable of laying 9,000,000 eggs. He concluded with the original suggestion that as cod only inhabit the northern hemisphere; that as they appear at one season of the year at Lofoden, and at another at Newfoundland; that as they deposit ova at one place, and devour their prey with great voracity

at the other; that as at Lofoden they arrive fat and leave emaciated, and at Newfoundland arrive ravenous and leave gorged; and that as they approach Lofoden from the south-east, the exact direction of Newfoundland, it is probable that those enormous shoals of cod that appear half-yearly on either side of the Atlantic Ocean are composed of the same individuals, urged by a powerful instinct to migrate to the east for the purpose of propagation, and to the west in pursuit of food.

In the discussion which ensued, Mr. H. B. BRADY, of Newcastle, said that there were two or three matters incidental to the subject he should like to remark upon. Firstly, as to the oils produced from the livers of different species of fish. It was well known that oil might be, and was, manufactured from the livers not only of the cod, but of the ling, ray, skate, and many other fish. He had seen specimens of the oil from many, if not all of these, which appeared nice enough; but was anything known of their different medicinal values? There was at one time a prejudice in the minds of some of the country people living near fishing villages for the oil obtained from the ling, and he recollected cases in which he had failed to convince those inquiring for it of the similar qualities of cod-liver oil. Cod-liver oil was manufactured in considerable quantities at some points on the North-east coast of England, and in several localities in Scotland, frequently of thoroughly good medicinal quality. Another subject which occurred to him was the filtration of the finer qualities of oil. He had heard—and he should like to learn from some one present with experience in the matter how far correctly—that the fine oil resulting from the process in which so little heat was employed required no filtration; and he believed, in point of fact, that it was not filtered.

Mr. JOSEPH INCE remarked that a practical paper such as the one now read was specially important, as its statements were derived from information obtained on the spot. Nothing was more perplexing than the literature of the subject, most opposite views being entertained by different authors. The word "Lofoden" itself was spelt in various ways, for which good authority might be given. He believed Mr. Howden had selected the one which could be best defended, although Léon Soubeiran in a recent pamphlet had rendered it Löffoten. The Journal of the Pharmaceutical Society was also an illustration of the dissimilar theories held by leading pharmacologists. The late Jonathan Pereira, in an elaborate paper containing analyses of De Jongh's oil recommended light brown cod-liver oil. In a later communication, another pharmacist (Mr. Mercer) doubted the correctness of the analyses recorded, and came to a totally different conclusion as to the chemical characteristics of the oil. M. A. Trousseau, of Brussels, published a more striking opinion. He divided the commercial oils into—pale amber, worthless; light brown, fairly therapeutic; but dark brown, resulting from strongly heating the livers in an iron pan, as an oil possessing true remedial value. Mr. Howden's observations seemed to prove that oil best manufactured which had been less exposed to heat. In conclusion, Mr. Ince drew attention to a report which a friend had placed in his hands of the International Exhibition at Bergen,\* August, 1865, where instruments employed in the capture of the cod and other fish, together with apparatus used in different localities on the Norwegian coast and elsewhere, were accurately described. Norwegians principally contributed, but the interests of Pisciculture were maintained by Danes, Swedes, Russians, French, English, and others. Particulars related by those personally engaged fully corroborated Mr. Howden's details. The alleged abundant and almost marvellous supply of cod in the Lofoden waters was confirmed by the fact that the head director of the fishery threw a sort of plumb-line into the sea, and obtained proof that the fish were piled up one over the other in such masses as to form a solid bank at the bottom of the water.

\* International Exhibition of Pisciculture and Fishing Implements. Bergen, Norway. By J. L. Soubeiran. Paris, 1866.

Page 50.—Produce of Cod Fishery, average yield for the year, 24 millions at Lofoden; 5 to 6 millions at Rumsdalen; 6 to 7 millions at Finmark.

\* Sur l'Exposition Internationale de Produits et Engins de Pêche à Bergen et sur la Pisciculture en Norvège. Par J. L. Soubeiran. Paris, 1866.

Page 50.—Produit de la pêche [de Morue], année moyenne: 24 millions à Löffoten; 5 à 6 millions à Rumsdalen; 6 à 7 millions à Finmark.

Professor REDWOOD (who on rising was well received) congratulated Mr. Howden on the value and interest of his communication. He observed, that although cod-liver oil could be prepared with obvious advantage on the Lofoden Islands where it was produced at an exceedingly low temperature, yet he was personally aware that it had been manufactured in a state of considerable purity in England. The Doctor next offered an ingenious theory to account for the discrepancies existing with regard to the oil, so far as colour and comparative efficacy were concerned. He attributed this to degree of oxidation, and he moreover considered that this oxidation took place in the system itself. From the darker coloured oils, he should therefore expect to find more immediate therapeutical result; but the oil must in consequence be exhibited with caution, as there were some constitutions which could not readily support the highly oxidised variety. In such cases the paler, less oxidised oil might probably be most advantageous. This is, we believe, the best explanation that has as yet been offered.

The paper was illustrated by maps recommended for selection by the Royal Geographical Society, and by a special chart, all of which were presented to the library at Bloomsbury-square. We would earnestly commend the careful examination of the chart to our readers.

Samples of oil submitted to known temperatures were exhibited to the meeting, demonstrating the distinctive characters existing between Newfoundland and Lofoden cod-liver oil. The outline sketch executed by Mr. Brady during the course of the evening, representing a Norwegian still as in common use amongst the peasantry, was taken from Soubeiran's work.†

#### DANGER OF THE ETHER SPRAY.

UNDER the above heading, Mr. G. A. Brown, house-surgeon to the Sheffield Infirmary, records the following occurrence in the *Lancet*, as a caution to those who may be using the ether spray while obtaining light from a naked flame:—

"I was called, at half-past twelve a.m., to a patient in this infirmary, suffering from malignant disease of the mouth, which had commenced to bleed very freely. There was general oozing, but no point that I could tie; and, before resorting to other measures, I was anxious to try the effect of Dr. Richardson's ether spray in arresting the bleeding. A candle was held by a nurse at a distance of about two feet from the patient's mouth, and I had played upon the part for, possibly, a minute. As the hæmorrhage appeared to have ceased, I was about to withdraw the jet, when the vapour suddenly ignited, and a scene presented itself that neither I nor any that witnessed it are likely soon to forget. The man appeared literally to vomit forth fire, while his head seamed, and, indeed, was, completely enveloped in brilliant flame. The fire was, however, rapidly extinguished; and, although the patient was terribly alarmed and fainted, no further harm resulted to him than his having his face slightly scorched. Fortunately, the man was seated in the

Pp. 66, 67.—Cod Fishery in Norway, 1860, lasted from the end of January to the middle of April, carried on from Bergen up to northern Finmark, but chiefly at the Lofoden Islands, producing:—Cod salted on the spot, 21,000,000, i.e. 12,000,000 dried, salted, pressed, and opened; 9,000,000 dried, salted, but not pressed (flat). Oil, 40,000 tons, more than average quantity.

Pp. 66, 67.—Pêche de la morue en Norvège en 1860, elle a duré de la fin de Janvier au milieu d'Avril, et s'est faite depuis Bergen jusqu'au Finmark septentrional, mais surtout aux îles Löffoten. Les produits ont été:—Morue salée sur place, 21,000,000 des poissons, dont 12,000,000 séchés, salés, aplatis et ouverts; 9,000,000 séchés, salés, mais non aplatis. Huile, 40,000 tonnes, ce qui dépasse la proportion ordinaire.

(Annales du Commerce extérieur, No. 1393, Suède et Norvège, 1862.)

† The author of the paper did not intend that it should be inferred that good, full-sized healthy livers were not to be obtained in the English fish-markets; indeed, it is well known that there is at least one large dealer who supplies satisfactorily the manufacturers of the oil located in London. Again, it is notorious that the oil prepared by one or two leading London houses is second to none (if indeed it be not superior to any) in point of quality. For all this, it is a fact as stated, that of those livers that are sold for culinary purposes certain portions are a requisite of the men, and these portions, inferior though they be, are used for the manufacture of oil. Again, it might have been stated, in reply to the question Why oil was not more largely made in England?—that though the quantity of cod caught on our coast was very large, it bears no proportion to the enormous amount of oil consumed in Great Britain and the colonies.

centre of a large ward. Had he been near curtains or other inflammable material, the result might have been lamentably different; or had it happened to a nervous patient, the shock might have been such as to have been followed by most serious consequences."

[We cannot account for Mr. Brown's carelessness in bringing a naked flame near his patient.—ED. C. AND D.]

### THE PHARMACY ACT.

THE following article from the *Lancet* leads us to hope that the proposed appeal to the legislature for an extension of the Pharmacy Act will be supported by the medical profession:—

"We understand it is the intention of the Pharmaceutical Society to make strenuous efforts to obtain an extension of the Pharmacy Act during the session of 1868—indeed, that a Bill is already drafted for the purpose, which will at once be submitted for the approval of the Government.

"This Bill is a modification of that introduced, and sent to a Select Committee of the House of Commons, in 1865, inasmuch as it proposes restrictions on the sale of poisons, the absence of such provisions having been in part the cause of failure on that occasion. The rights of chemists not hitherto connected with the Society having been duly considered, and ample security given for their future position, the trade generally are now united in supporting the proposed legislation. In the interests of the public, as well as our own profession, we trust Parliament will no longer delay their sanction to this necessary reform."

### THE CLINICAL SOCIETY OF LONDON.

MANY eminent members of the medical profession are endeavouring to start a new society under the above name. Its objects are the cultivation and promotion of the study of practical medicine and surgery by the collection of reports of interesting cases. Preference will be given to such cases as bear upon undetermined question in pathology or therapeutics. Meetings will be held periodically, and communications of two kinds will be received. 1. Cases of which the records are already complete. 2. Cases still under observation. As regards the first-class, a written report of the case or cases will have to be forwarded to one of the secretaries a week before a meeting. The report of each case will necessarily comprise:—(a) A complete record of the state of the patient when first observed, investigated according to the most approved clinical methods. (b) A statement of the family and personal history of the patient, including a narrative of the present illness previous to the patient's coming under observation. (c) A record of the patient's state when last seen, or, in fatal cases, an account of the post-mortem examination if procurable, together with an abstract of the progress and treatment of the case since it was first observed.

As regards communications of the second class, a brief statement of the principal facts of the case will be furnished in writing to the secretary before the day of meeting. If it appear expedient, a committee of one or more members may be nominated by the president, with the consent of the member communicating, to co-operate with him in investigating the case.

Every communication will conclude with explanatory remarks by the author, and, wherever practicable, the facts recorded will be demonstrated by the exhibition of the patient, or by photographs, drawings, casts, etc., as well as by microscopical and chemical analyses.

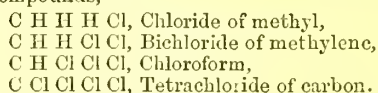
### NEW ANÆSTHETIC, BICHLORIDE OF METHYLENE.

THE following account of Dr. Richardson's last discovery is abridged from an article in the *Lancet*:—

Nobody will be surprised to hear either of the discovery of a new anæsthetic or that the discoverer is Dr. Richardson. Of all discoverers, Dr. Richardson is the most prolific. True, he has to discover sometimes that all his conclusions are not right—in other words, that his discovery is a false one. But this is one of the hardest discoveries for a man to make; and Dr. Richardson, to his credit, made it fully in reference

to the cause of the coagulation of the blood. Yet his investigations are always of the highest importance, and most suggestive in their bearings upon practical medicine.

His last discovery seems a real one, and it may prove to be important: the anæsthetic power of the bichloride of methylene—a fluid like chloroform in appearance and odour, but differing in its boiling point and its specific gravity. The bichloride of methylene boils at 88° Fahr., and has a specific gravity of 1.34; chloroform boils at 142°, and has a density of 1.49. This substance has chemical relations also with tetrachloride of carbon, the anæsthetic properties of which are known. Chemically speaking, the bichloride of methylene is constructed from the organic radical, methyl, represented by C H<sub>3</sub>, by the withdrawal of one atom of hydrogen, giving methylene C H<sub>2</sub>, and the addition of two of chlorine—thus, C H<sub>2</sub> Cl<sub>2</sub>. The composition of chloroform is C H Cl<sub>3</sub>. It differs from the bichloride of methylene in having one atom of hydrogen less and one atom of chlorine more in its composition. The radical methyl may enter into composition with chlorine, giving rise to the chloride of methyl, C H<sub>3</sub> Cl, which was discovered in July to have gentle anæsthetic properties by Dr. Richardson. We have, then, a series of compounds,



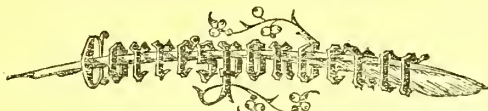
All of these compounds are anæsthetic, Dr. Richardson having discovered the anæsthetic properties of the first of these in July last, and of the second in August. That gentleman has experimented on himself and on animals with these new anæsthetics; and two cases of ovariectomy in the practice of Mr. Spencer Wells have apparently proved satisfactorily the anæsthetic power of the bichloride of methylene, which, as it is intermediate in composition, Dr. Richardson regards as also intermediate in strength between chloride of methylene and chloroform. The anæsthesia induced by the bichloride of methylene in pigeons comes on with less struggling than in the case of chloroform; it is more prolonged and quiet, and the recovery from it is quick. In an animal killed by it, both sides of the heart and the lungs contained blood. Dr. Richardson has drawn the following conclusions:—

"In its action the bichloride of methylene is more gentle, but as effective as chloroform; it produces less struggling and less vascular excitement. Its narcotic effects are equally prolonged. It acts very uniformly on the nervous centres. It sometimes produces vomiting. When it is carried so far as to kill, it destroys by equally paralyzing the heart and the respiration. It interferes less than other anæsthetics with the muscular irritability."

Dr. Richardson expects that it will prove less fatal than chloroform, which causes death, he estimates, once in fifteen hundred cases.

WEIGHTS AND MEASURES.—The Shropshire Chamber of Agriculture have been discussing the question of the uniformity of weights and measures. Two of the county members were present, but the speakers were all farmers, and they supplied from their own experience many striking illustrations of the inconvenience attending the existing system of multiform weights and measures. Taking the county of Salop alone it was stated that while in the central district wheat was sold by the 38 quarts or the 75 lb., on the borders of the county 32 quarts or 62 lb. was the standard. In Shrewsbury market a bag of oats weighed 11 score 10 lb., while in Whitechurch and Ellesmere it weighs only 10 score 5 lb. In Shrewsbury a bag of potatoes weighed 95 lb. up to Christmas, and afterwards 90 lb., while in Whitechurch it weighed 80 lb. all the year round. The climax of confusion was, however, reached in the matter of butter, 18 or 19 ounces to the pound being sold in Shrewsbury, 20 at Wem, 24 at Ellesmere and Whitechurch, and in the little market town of Oswestry 18 to 20 ounces were given to the pound in one part of the town, while in the other the purchaser only received 16. Strong feeling was expressed that this state of things, which is of course not confined to Shropshire, demanded alteration; and ultimately resolutions were passed recommending the adoption of the principle of the sale of agricultural produce by a uniform standard of weight.





## OUR JOURNAL.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Your "Editorial Note" in the last issue reminded me that the subject of the Price Current had not been touched upon in my communication which you published with the same issue.

Now, Sir, I have a very strong opinion in favour of its continuance, and would humbly suggest that the objections urged by Mr. Tatham have nothing whatever to do with the question. In fact, one can only suppose that he has never perused the Price Current at all. The *Price Lists*, with which he evidently confounds it, are not the quotations of the open market, but the particular prices that each house wishes to secure. The especial value of your list is, that it is thoroughly impartial and correct, and acts as a guide in reference to the prices one has to purchase at. I have not only found it one of the most interesting items of the CHEMIST AND DRUGGIST, but can confidently add that it has enabled me, over and over again, to save the cost of my subscription to that Journal. Do not, I beg of you, discontinue the Price Current. If (as the correspondence would appear to show) certain parties don't know how to utilize it, that merely is no reason for omitting it. As well might a blind man deny the value of light, or one without legs the utility of boots.

Though not distinctly intimated, I hope the inference may fairly be drawn from your note that the present will be also the future shape of the CHEMIST AND DRUGGIST. In conclusion, permit me to add my acquiescence to the request of A. B. C., who desires an oil trade report. Let it be brief and practical—true and impartial it cannot fail to be.

A READER FROM THE FIRST.

[We are compelled to omit much correspondence this month.—ED. C. AND D.]

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—I am glad to see that there is an intention on your part to return to the octavo form in the size of the CHEMIST AND DRUGGIST. It forms when bound, by far the most convenient volume, and I, for my part, regret that it ever was departed from. However, now is the time to make the change proposed, as the volumes issued of the larger size will now make a respectable, if not a neat volume, when bound together.

In reference to the doing away with the "Price Current," I think few will regret your doing so, so long as you give us the "Trade Report," the latter I would say, is indispensable.

With your forthcoming volume for 1868, you should give your readers some information on Percolation and Inhalation by some of your able contributors. Information on the latter subject, would be most interesting now that the Pharmacopœia recognises such treatment, and were a slight notice given of the different Inhaling Machines in use, it would be most serviceable.

A READER.

[Our correspondent's excellent suggestions respecting Percolation and Inhalation shall be attended to.—ED. C. AND D.]

## METHYLATED SPIRIT.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

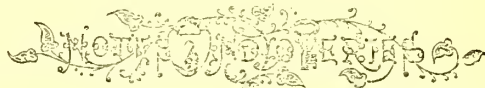
SIR,—Will you allow me to address you upon a subject which has been much upon my mind, namely, the methylated spirit of wine license to chemists. What facility this gives to unprincipled persons to make their tinctures, &c., of it; and there are chemists who have almost exclusively made use of it for this purpose, and I fear will still do so, even to their own dear cost. Instance, Tin. Opii, at 4d. per ounce retail.

Pray give a word to these dishonest ones in time to save their fines and penalties, if possible.

Your obedient servant,

HONESTY.

[We cannot believe that the dishonest persons referred to by our correspondent are subscribers to this journal. We shall have no pity for the methylated spirit men when they fall beneath the strong arm of the Law.—ED. C. AND D.]



CHILBLAINS.—*R. S.* writes in the *Lancet*:—"I have been in the habit of prescribing the following with complete success in every case: Tincture of aconite, one drachm and a half; glycerine, two drachms; compound camphor liniment to one ounce. Of course I do not use this liniment where the chilblain has become what is called 'broken.'" Another correspondent of our contemporary recommends a plan of treatment which is commonly adopted in Switzerland, and testifies to its efficacy. It consists in well brushing the parts affected with chilblains every night on retiring to bed. Beating the feet with twigs is another form of the plan recommended.

LINIMENTUM TEREBINTHINE ACETICUM.—The following formula, attributed to a well-known authority, is communicated to the *Lancet* by Mr. James Hurd, of Frome:—R Sp. tereb.,  $\zeta$ iv; acid. acet. fort.,  $\zeta$ vj; vitel. ovi, j; mist. camph. fort.,  $\zeta$ v, vel aqua rosæ. Misc.—This form differs materially from that reprinted in our last, p. 178.

FIXING PENCIL DRAWINGS.—*P. J.* (Exeter).—We know of no better plan than the extremely simple one of passing the drawing through skimmed milk.

*A. W. Test*, Camden, New Jersey.—The July number, 1867, has been forwarded direct by this month's mail.

*E. W.* (Guildford). Simple kneading in hot water.

*Chemicus* (Dowlais). Groombridge and Son, Paternoster-row.

*J. H.* (Leeds). A formula was given in our review of Squire's "Companion" last month. See page 170.

THE FOUNDER OF THE FULLERIAN PROFESSORSHIP.—In 1833 John Fuller, Esq., M.P., founded a Chair of Chemistry at the Royal Institution, and nominated Faraday the first professor. Mr. Fuller, familiarly called Jack Fuller by his compeers, was remarkable for his good-natured boisterousness, which was so different from the gentle deportment of most of the members of the institution. He was a tall, portly man, and one might see from the high colour of his face that he enjoyed the good things of this life. His morning dress consisted of a blue coat with metal buttons, a coloured vest, grey smalls, white stockings, and low shoes. He was a regular visitor at the fashionable lectures, but he attended them rather as a loungee than as a scientific student. However, when the funds of the institution were low, and the expenses were exceeding the income, he promptly and liberally came to the rescue.—*Personal Recollections of Faraday.*

SCOTTISH NATIONAL MUSEUM.—Under the sanction of the Committee of Council on Education, five short courses of evening lectures on science have been instituted for the winter months, to be given in the lecture-room of the Museum, which accommodates above 800 persons. The first two lectures of the chemistry course were delivered last week by Professor Lyon Playfair, C.B., and were attended by a crowded audience of both sexes, but chiefly consisting of working men, to whom shilling tickets for the course are issued. The courses to follow will be delivered early in 1868, by professors of the University of Edinburgh or other lecturers of eminence, and will embrace natural philosophy, natural history, mechanics, and botany. This effort to make the museum useful as a great popular college has been highly appreciated by the classes for whose benefit it is designed.

**CASK-BORING BEETLES.**—Beer drinkers in India complain that the quality of the pale ale now sent out to them is inferior to that supplied a few years ago; and the importers are crying out loudly about the ravages of a beetle, which eats holes in the casks and sets them leaking. Through and through, and up and down, and in all directions, this mischievous little borer makes its way into the staves till they become a mere honeycomb, held together by the hoops. In one of the casks, which was taken to pieces and examined, it was calculated that there were 134,000 perforations communicating with the outer surface, and long processions of beetles were found in the holes. No wonder that assistant commissary-generals report a waste of beer by leakage of from twenty-five to fifty per cent. No one seems to know when the pest first appeared in India, but it had been complained of in Burmah before 1855. Since then it has been observed in other places, is equally destructive in all, and was last heard of at Secunderabad. Some people think the germ of the insect is in the wood before it leaves England; others, that it is a variety of the bamboo beetle, which effects a lodging in the casks during conveyance to the depôts. It can be killed and dislodged only by boiling water. Can none of our naturalists suggest a way of preserving the casks from attack.—*Athenæum*.

**FARADAY AS CHEMICAL ASSISTANT.**—When the writer obtained his appointment at the Royal Institution, in 1820, Sir Humphry Davy was Honorary Professor, and Mr. Brande Acting Professor of Chemistry. Mr. Faraday was the Chemical Assistant; while the writer, then a lad of fourteen, rejoiced in the title of Laboratory Assistant. Faraday occupied rooms on the second floor at the institution, and dined daily at one o'clock at an eating-house in Marlborough-street. When not engaged in assisting Professor Brande at the lecture table, or in preparing illustrations for coming lectures, he generally found ample occupation in making various chemicals not easily procured, and the contents of the lines of bottles on the shelves of the laboratory testified to his skill and industry. The few hours of leisure that he enjoyed were devoted to original research.—*From Personal Recollections of Faraday in "The Laboratory."*

**ESSENCE OF MIRBANE.**—A paragraph in the *Standard* of the 1st inst., ascribing the death of a woman to the accidental administration of essence of "myrbane," has given Mr. Thomas P. Blunt, F.C.S., the opportunity of affording the public some useful information respecting the poisonous properties of a compound now largely used in the arts. Having pointed out the misprint by which "mirbane" was transformed into "myrbane," Mr. Blunt writes:—"The 'essence of mirbane,' or nitrobenzol, is now largely prepared as a step in the manufacture of aniline, from which 'mauve' and the other dyes commonly known as the coal-tar colours are obtained. It has an overpowering odour, strongly resembling that of essential oil of bitter almonds, agreeable when diluted, but in the concentrated form depressing and productive of headache. It is a most virulent poison, a single drop placed upon the tongue having been known to cause the death of a lad, who drained it by mistake from the bottom of a bottle, purporting to contain common almond flavouring. It is of course utterly unfit for use in pastry or any article intended for food; indeed, independently of its fearfully poisonous character, its flavour seems to affect the nerves of smell alone, the taste of the oil being confined to one of intense and indescribable sweetness. I should not, however, recommend any of your readers to make the experiment, as a very minute quantity is sufficient to produce violent headache, frequently lasting for some time. The essence, which, as generally sold, consists of a solution of one part of the pure oil in four or five of spirit, is much employed as a scent for hair pomades, &c., and for such purposes is probably innocuous, as no case of injury through its external use has been recorded. Since, however, even in this diluted form, it is nearly as poisonous as commercial prussic acid, it can hardly be regarded as a safe substance to place without restriction in the hands of the public.

**SIR SAMUEL BAKER'S MEDICAL PRACTICE.**—One of the spells by which Sir Samuel Baker and his wife held the Arabs in willing subjection, was their skill in doctoring. The traveller in his new book gives the following amusing account of his practice:—"I ordered the dragoman Mahomet

to inform the Faky that I was a doctor, and that I had the best medicines at the service of the sick, with advice gratis. In a short time I had many applicants, to whom I served out a quantity of Holloway's pills. These are most useful to an explorer, as, possessing unmistakable purgative properties, they create an undeniable effect upon the patient, which satisfies him of their value. They are also extremely convenient, as they may be carried by the pound in a tin box, and served out in infinitesimal doses from one to ten at a time, according to the age of the patient. I had a large medicine chest, with all necessary drugs, but I was sorely troubled by the Arab women, many of whom are barren, who insisted on my supplying them with some medicine that would remove this stigma and render them fruitful. It was in vain to deny them; I therefore usually gave them a small dose of ipecacuanha."

**SUDDEN DEATHS.**—In 1865 no less than 3,173 persons—1,879 males and 1,294 females—died suddenly in England and Wales from unascertained causes. The number of these deaths in London was 82 (45 males and 37 females); in the south-eastern district, 194 (111 males and 83 females); in the south midland district, 168 (92 males and 76 females); in the eastern district, 229 (124 males and 105 females); in the south-western district, 344 (215 males and 129 females); in the west midland district, 453 (265 males and 188 females); in the north midland district, 162 (95 males and 67 females); in the north-western district, 963 (566 males and 397 females); in the Yorkshire district, 189 (122 males and 67 females); in the northern district, 109 (62 males and 47 females); and in Monmouthshire and Wales, 280 (182 males and 98 females).



IN the market for Chemicals, since the late failure, there has been rather more firmness, and a fair extent of business done at prices showing a slight improvement on last month's rates. Tartaric Acid is better, sales more freely made at 13½d. to 13¾d. for English; Foreign is now held for 13½d., but no buyers. A moderate business has been done in Citric Acid at 2s. Only retail sales made in Sal Acetos at 10d. to 10½d. Oxalic remains quiet at 8d. to 8½d., a few makers holding for higher prices. Chlorate is steady at 11¾d. to 12d. Bichlorate continues quiet at 5d. Prussiate of Potass sells slowly at 12¾d. to 13d. Iodine is dull at 9d. to 9½d. A moderate business has been done in Quinine at 4s. 2d. for French, and 4s. 9d. to 4s. 10d. for English. A large business has been done in Alum, for home use and export, at firm prices—tierces, £7 10s.; barrels, £7 15s.; and ground £8 10s. in bags. Sulphate of Copper is quiet at 24s. 6d. to 25s. 6d. Soda Crystals are easier, and dull at 95s. ex ship. Ash is also quiet at 2½d. to 2¾d. Caustic Soda is also dull, 16s. 6d., 17s., and 70 deg. 22s., and Bicarbonate at 13s. to 13s. 6d. Bleaching Powder is flat and lower, last sales made at 11s. to 11s. 6d. Flour of Brimstone is steady at 13s. 6d. to 14s., and Roll 10s. 3d. to 10s. 6d. A fair business has been done in Sulphate of Ammonia at 13s. to 14s. Cream Tartar is dull and lower, a few sales having been made at 79s. to 80s. Sal Ammoniac is steady at 33s. 6d. to 35s. 6d., according to quality. Refined Saltpetre is rather easier, sales having been made at 23s. to 23s. 6d. for first quality. Linseed Oil is lower, and few sales; spot 34s. 6d. to 34s. 9d., Hull 33s. 6d. Rape is also lower, and little now doing; English brown, 37s.; first four months, 37s. 6d. to 38s.; and Foreign pale spot 39s. to 39s. 6d. Petroleum declined to 1s. 3d. to 1s. 3½d.; but rather better lately, closing steadily at 1s. 4½d. to 1s. 4¾d. Nothing done in Crude. Turpentine is better, last sales made in French at 28s., and American 28s. 3d. to 28s. 6d. Resin is dull. No change in Ashes.

The dealings in the Drug market have continued extremely small, which is usually the case at this period of the year, both the home trade and exporters purchasing for actual wants only. Prices have ruled irregular. Some parcels of good and fine pale Castor Oil have sold at 6½d. to 7¼d., and

yellow and straw 6½d. to 6d. A good quantity of Citronelle Oil sold at 2½d. to 3d., being rather easier. Several parcels Oil Anniseed have been sold at 12s. 3d. to 12s. 6d. No sales of Cassia Oil. A few lots Newfoundland Cod-liver Oil sold at 3s. 6d. to 5s. 6d. Camphor is dearer, Japan sold at £7 to £7 2s. 6d. Several parcels of Turkey Gums have been offered, and the greater portion bought in, the few selling went at prices rather in favour of the buyers. Some few lots good and fine Turkey Opium sold at 16s. to 17s., which are late rates. Fine Blue Galls are held for stiff prices—some parcels of China sold at 57s., and Japan at 52s. to 52s. 6d. East India Arabia has sold at firmer prices for good qualities. A good business has been done in Cutch, good Pegue is now 49s. to 49s. 6d. Gambier is dearer, fair quality 16s. to 16s. 6d. Logwood is dearer, Jamaica last sold at 90s. to 95s. Jamaica Fustic is easier, last sales at £6 12s. 6d. to £6 15s. Some fine Cape Aloes sold at 30s. 6d. to 31s. 6d., medium and good Barbadoes £4 to £9 2s. 6d. A few lots Ipeacuanha have realised 7s. 3d.; good Jalap 4s. 3d. to 4s. 6d., and Tampico 8d. to 10d. Balsam Capivi has sold at 1s. 7½d. to 1s. 8d. Colombo Root is 25s. to 26s., being rather lower. Common Gum Benjamin is 5s. to 7s. 6d. cheaper. Bark is firm, a few lots hard Pitayo sold at 1s. Senna is unaltered. Cardamoms are held for more money. Cochineal is rather easier. A few small lots China Rhubarb have sold at easier prices. Shellac is 2s. to 3s. dearer, and large sales. In other goods there is no change worth notice.

PRICE CURRENT.

These quotations are the latest for ACTUAL SALES in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the CASH PRICES IN BULK. They will, however, be able to form a tolerably correct idea of what they ought to pay.

	1867. s. d.	1867. s. d.	1866. s. d.	1866. s. d.
ARGOL, Cape, per cwt.....	62 0	75 0	56 0	85 0
French .....	48 0	70 0	30 0	76 0
Oporto, red .....	26 0	28 0	67 6	32 0
Sicily .....	50 0	55 0	66 0	70 0
Naples, white .....	60 0	70 0	85 0	71 0
Florence, white.....	75 0	80 0	77 0	90 0
red.....	65 0	70 0	87 0	80 0
Bologna, white.....	78 0	80 0		90 0
ARROWROOT. (duty 4½ per cwt.)				
Bermuda, per lb.....	1 2	1 4	1 0	1 4
St. Vincent.....	0 2½	0 5½	0 2½	0 5½
Jamaica .....	0 2½	0 3½	0 3	0 4½
Other West India .....	0 0	0 0	0 2	0 3½
Brazil .....	0 0	0 0	0 2½	0 3
East India .....	0 1½	0 3	0 2½	0 4
Natal .....	0 3½	0 8	0 3½	0 7½
Sierra Leone .....	0 4	0 4½	0 3½	0 4
ASHES.....per cwt.				
Pot, Canada, 1st sort .....	33 6	0 0	38 0	0 0
Pearl, ditto, 1st sort .....	37 0	0 0	46 0	0 0
BRIMSTONE,				
rough.....per ton.....	132 6	0 0	132 6	135 0
roll .....	210 0	220 0	200 0	210 0
flour .....	270 0	290 0	245 0	250 0
CHEMICALS,				
Acid—Acetic, per lb. ....	0 4	0 0	0 4	0 0
Citric .....	2 0	0 0	1 11	2 0
Nitric .....	0 5	0 5½	0 5	0 5½
Oxalic .....	0 8	0 8½	0 10½	0 11
Sulphuric .....	0 0½	0 1	0 0½	0 1
Tartaric crystal.....	1 1½	1 1½	1 3½	1 3½
powdered .....	1 2	0 0	1 5	1 5½
Alum .....	150 0	155 0	150 0	160 0
powder .....	170 0	0 0	170 0	0 0
Ammonia, Carbonate, per lb.	0 5	0 5½	0 5	0 5½
Sulphate .....	260 0	280 0	220 0	230 0
Antimony, ore .....	0 0	220 0	200 0	220 0
crude .....	23 0	24 0	24 0	25 0
regulus .....	48 0	0 0	34 0	0 0
French star .....	48 0	0 0	34 0	0 0
Arsenic, lump .....	16 0	16 6	15 0	15 6
powder .....	7 6	7 9	6 9	7 0
Bleaching powder.....	11 0	11 6	14 6	15 6
Borax, East India refined ..	0 0	0 0	0 0	0 0
British .....	63 0	67 6	65 0	0 0
Calomel .....	2 5	0 0	2 5	2 6
Camphor, refined.....	1 10½	0 0	1 9½	1 10
Copperas, green .....	55 0	60 0	52 6	55 0
Corrosive Sublimate, per lb.	1 11	0 0	1 11	0 0
Green Emerald .....	0 0	0 0	0 0	0 0
Brunswick .....	0 0	0 0	0 0	0 0
Iodine, dry .....	0 9	0 9½	0 9½	0 9

	1867. s. d.	1867. s. d.	1866. s. d.	1866. s. d.
CHEMICALS.				
Magnesia, Carbon....per cwt.	42 6	0 0	42 6	45 0
Calcined....per lb.	1 6	1 8	1 6	1 8
Minium, red .....	21 6	22 0	22 0	23 6
orange.....	33 6	0 0	32 6	0 0
Potash, Bichromate...per lb.	0 5	0 0	0 5½	0 5½
Chlorate .....	1 0	1 0½	1 1	0 0
Hydriodate...per lb.	12 0	0 0	13 0	0 0
Prussiate.....per lb.	1 0½	1 1	1 0½	1 1
red .....	1 9½	1 10	1 9½	1 10
Precipitate, red .....	2 6	0 0	0 0	2 6
white.....	0 0	2 5	2 5	0 0
Prussian Blue .....	1 0	1 10	1 0	1 10
Rose Pink .....	29 0	0 0	29 0	0 0
Sal-Acetos .....	0 10	0 10½	1 0½	1 1
Sal-Ammoniac .....				
British .....	33 6	35 6	35 0	37 0
Salts, Epsom .....	8 6	8 9	8 6	9 0
Glauber.....	5 6	6 0	5 6	0 0
Soda, Ash.....per deg.	0 2½	0 2½	0 2½	0 3½
Bicarbonate...per cwt.	13 0	15 6	20 0	21 0
Crystals .....	95 0	0 0	115 0	120 0
Sugar Lead, white...per cwt.	37 6	38 0	38 0	0 0
brown .....	28 0	29 0	27 0	0 0
Sulphate Quinine...per oz.				
British, in bottle .....	4 9	4 10	4 9	5 0
Foreign .....	4 2	0 0	4 4	4 5
Sulphate Zinc.....per cwt.	0 0	0 0	0 0	0 0
Verdigris.....per lb.	0 11	1 0	0 11	1 0
Vermilion, English .....	2 9	3 4	2 9	3 2
China .....	2 6	2 8	2 7	0 0
Vitriol, blue or Rom. per ct.	24 6	25 6	25 0	27 0
COCHINEAL, per lb.				
Honduras, black .....	3 3	4 4	3 0	4 7
silver .....	2 6	3 10	3 0	3 7
Mexican, black .....	3 3	3 7	3 5	3 6
silver .....	3 0	3 1	3 4	3 5
Lima.....	0 0	0 0	0 0	0 0
Teneriffe, black.....	3 3	4 0	3 7	4 6
silver .....	3 1	3 8	3 2	3 7
DRUGS,				
Aloes, Hepatic .....	80 0	180 0	180 0	190 0
Socotrine .....	180 0	290 0	140 0	290 0
Cape, good .....	30 0	32 0	35 0	37 0
inferior.....	17 0	29 0	20 0	34 0
Barbadoes .....	80 0	280 0	50 0	260 0
Ambergris, grey .....	33 0	36 0	30 0	35 0
Angelic Root .....	0 0	0 0	0 0	0 0
Aniseed, China star.....	0 0	120 0	85 0	87 6
German, &c. ....	30 0	42 0	23 0	40 0
Balsam, anada .....	1 5	1 6	1 8	1 9
Capivi .....	1 8	1 9	1 8	1 9½
Peru .....	7 3	8 0	5 6	0 0
Tolu .....	2 4	2 7	3 6	0 0
Bark, Cascarilla.....per cwt.	16 0	28 0	18 0	29 0
Peru, crown & grey per lb.	1 4	2 0	1 3	2 2
Calisaya, flat .....	2 6	2 9	2 6	2 8
quill .....	2 2	2 6	2 0	2 5
Cartbagenia.....	0 10	1 4	1 0	1 6
Pitayo .....	0 9	1 8	0 7	2 0
Red .....	2 6	12 0	2 6	12 0
Bay Berries.....per cwt.	0 0	0 0	0 0	0 0
Bucca Leaves.....per lb.	0 2½	0 9	0 3½	0 10
Camomile Flowers .....	45 0	80 0	40 0	120 0
Camphor, China .....	137 6	142 6	142 6	145 0
Canella alba .....	22 0	27 0	45 0	80 0
Cantharides .....	1 10	1 11	2 2	2 5
Cardamoms, Malabar, good	7 6	8 3	5 6	6 3
inferior .....	5 0	7 0	3 9	5 3
Madras .....	5 0	7 9	3 9	5 3
Ceylon .....	2 9	3 0	3 6	4 0
Cassia Fistula.....per cwt.	20 0	32 0	18 0	36 0
Castor Oil, 1st pale ..per lb.	0 6½	0 7½	0 6½	0 7½
2nd .....	0 6½	0 6½	0 6	0 6½
inferior and dark ..	0 5½	0 6	0 5½	0 6
Bombay, in casks ..	0 5½	0 0	0 5½	0 6
Castorum .....	1 0	20 0	1 0	20 0
China Root .....	23 0	30 0	20 0	40 0
Cocculus Indicus .....	22 6	25 0	26 0	30 0
Cod Liver Oil .....	3 0	6 6	4 0	8 0
Colocynth, apple .....	0 7	0 11	0 7½	1 0
Colombo Root .....	25 0	40 0	80 0	90 0
Cream Tartar .....				
French .....	79 0	80 0	82 6	85 0
Venetian .....	0 0	0 0	85 0	87 6
grey .....	72 6	75 0	80 0	82 6
brown .....	64 0	62 6	80 0	0 0
Croton Seed .....	89 6	105 0	140 0	160 0
Cubeb .....	45 0	47 0	64 0	70 0
Cumin Seed .....	17 0	20 0	16 0	23 0
Dragon's blood reed.....	200 0	220 0	240 0	340 0
lump .....	85 0	280 0	85 0	280 0
Galangal Root .....	16 0	17 0	11 6	12 0
Gentian Root .....	16 0	0 0	16 0	17 0
Guinea Grains .....	49 0	51 0	60 0	63 0
Honey, Narbonne.....	50 0	70 0	50 0	70 0
Cuba .....	26 0	41 0	26 0	40 0
Jamaica .....	23 0	55 0	25 0	55 0
Ipeacuanha .....	7 0	7 3	10 6	0 0
Isinglass, Brazil.....	2 0	3 10	2 2	4 9
East India .....	1 10	4 2	1 10	4 4
West India .....	3 8	3 11	3 9	4 2
Russian.....	9 6	10 6	8 0	11 0
Jalap .....	0 9	5 0	0 9	5 6

DRUGS—continued.		1867.	1867.	1866.	1866.	OILS—continued.		1867.	1867.	1866.	1866.
		s. d.	s. d.	s. d.	s. d.			s. d.	s. d.	s. d.	s. d.
Juniper Berries . . . . .	per cwt.	9	6	8	6	Almond, essential . . . . .	per lb.	25	0	38	0
German and French . . .		10	0	10	0	expressed . . . . .		1	10	1	8
Italian . . . . .		10	0	10	0	Aniseed . . . . .	per lb.	12	6	0	0
Lemon Juice . . . . .	per deg.	0	0 1/2	0	0 1/2	Bay . . . . .	per cwt.	80	0	90	0
Liquorice . . . . .	per cwt.	65	0	70	0	Bergamot . . . . .	per lb.	11	3	19	0
Spanish . . . . .		50	0	60	0	Cajuput . . . . .	per oz.	0	2	0	2 1/2
Italian . . . . .		3	9	4	6	Caraway . . . . .	per lb.	5	0	6	6
small . . . . .		1	0	1	6	Cassia . . . . .	per lb.	6	6	6	8
Manna, flaky . . . . .		17	0	36	0	Cinnamon (in bond) . . . . .	per oz.	1	3	3	5
small . . . . .		1	0	1	6	Cinnamon Leaf . . . . .		0	4	0	6
Musk . . . . .	per oz.	12	0	14	0	Citronel . . . . .	per lb.	2	2 1/2	0	3 1/2
Nux Vomica . . . . .		15	0	17	0	Clove . . . . .		2	7	0	0
Opium, Turkey . . . . .		3	6	7	0	Croton . . . . .		1	2	1	6
Egyptian . . . . .		30	0	40	0	Juniper . . . . .	per lb.	1	6	1	9
Onis Root . . . . .	per cwt.	100	0	105	0	Lavender . . . . .		2	9	2	0
Pink Root . . . . .	per lb.	0	10	0	11	Lemon . . . . .		5	0	8	0
Quassia (bitter wood) per ton		100	0	105	0	Lemongrass . . . . .	per oz.	0	6	0	7 1/2
Rhatany Root . . . . .	per lb.	0	4	1	0	Mace, ex. . . . .		0	7	0	7
Rhubarb, China, round . . . . .		2	6	9	6	Neroli . . . . .		3	6	4	6
flat . . . . .		2	0	7	6	Nutmeg . . . . .		0	3	0	9
Dutch, trimmed . . . . .		9	6	12	0	Orange . . . . .	per lb.	5	0	7	6
Russian . . . . .		9	0	10	0	Otto of Roses . . . . .	per oz.	16	0	20	0
Saffron, Spanish . . . . .		32	0	38	0	Peppermint, per lb.		20	6	21	0
Salep . . . . .	per cwt.	105	0	120	0	American . . . . .		20	6	21	0
Sarsaparilla, Lima . . . . .		1	0	1	4	English . . . . .		34	0	44	0
Para . . . . .		0	11	1	1	Rhodium . . . . .	per oz.	0	0	0	0
Honduras . . . . .		0	10	1	5	Rosemary . . . . .	per lb.	1	9	2	0
Jamaica . . . . .		1	0	2	1	Sassafras . . . . .		3	0	3	6
Sassafras . . . . .	per cwt.	9	0	10	0	Sparmint . . . . .		16	0	25	0
Scammony, virgin . . . . .	per lb.	30	0	38	0	Spice . . . . .		0	0	0	0
second . . . . .		11	0	23	0	Thyme . . . . .		1	10	4	0
Seneca Root . . . . .		1	5	0	0	PITCH, British . . . . .	per cwt.	8	6	0	0
Senna, Calcutta . . . . .		0	0	0	0	Swedish . . . . .		0	0	0	0
Bombay . . . . .		0	2 1/2	0	4 1/2	SALT-PETRE, per cwt.		19	0	19	6
Timnevelly . . . . .		0	1 1/2	0	9	English, 6 per cent. or under		19	0	19	6
Alexandria . . . . .		0	1 1/2	0	10	over 6 per cent. . . . .		18	6	18	6
Snake Root . . . . .		1	5	1	6	Madras . . . . .		17	0	18	0
Spermaceti, refined . . . . .		1	6	0	0	Bombay . . . . .		14	6	17	0
Squills . . . . .		0	1	0	2	British-refined . . . . .		23	0	23	6
Tamarinds, E. India, per cwt.		19	0	25	0	Nitrate of soda . . . . .		11	6	12	6
West India . . . . .		16	0	28	0	SEED, Canary . . . . .	per qr.	70	0	74	0
Terra Japonica—						Caraway, English . . . . .	per cwt.	44	0	46	0
Gambier . . . . .	per cwt.	15	9	24	6	German, &c. . . . .		40	0	48	0
Cutch . . . . .		28	0	50	0	Coriander . . . . .		18	0	20	0
Valerian Root, English . . . . .		20	0	29	0	East India . . . . .		0	0	0	0
Vanilla, Mexican . . . . .	per lb.	4	0	16	0	Henip . . . . .		40	0	44	0
Wormseed . . . . .	per cwt.	5	6	6	0	Liused, Black Sea . . . . .		65	0	66	0
GUM—Ammoniac, drop, per cwt.		180	0	220	0	Calcutta . . . . .		67	0	69	0
lump . . . . .		100	0	160	0	Bombay . . . . .		69	0	70	0
Animi, fine pale . . . . .		200	0	220	0	Egyptian . . . . .		0	0	0	0
bold amber . . . . .		180	0	190	0	Mustard, brown . . . . .	per bush.	0	0	15	0
medium . . . . .		160	0	180	0	white . . . . .		8	0	10	6
small and dark . . . . .		100	0	150	0	Poppy, East India . . . . .	per qr.	58	0	60	0
ordinary dark . . . . .		70	0	105	0	Rape, English . . . . .		0	0	0	0
A abie, E. I., fine pale picked		88	0	95	0	Danube . . . . .		58	0	54	0
unsorted, good to fine		73	0	85	0	Calcutta fine . . . . .		53	0	52	0
red and mixed . . . . .		55	0	68	0	Bombay . . . . .		55	0	61	0
siftings . . . . .		35	0	45	0	Teel, Scesny or Gngy . . . . .		0	1	65	0
Turkey, picked, good to fine		190	0	220	0	Cotton . . . . .	per ton	190	0	200	0
second and inferior . . . . .		85	0	160	0	Ground Nut Kernels per ton		370	0	340	0
in sorts . . . . .		70	0	85	0	SOAP, London yel. . . . .	per cwt.	28	0	32	0
Gedda . . . . .		42	0	47	0	mottled . . . . .		32	0	36	0
Barbary, white . . . . .		70	0	77	0	curd . . . . .		46	0	50	0
brown . . . . .		82	6	85	0	Castile . . . . .		49	0	42	0
Australian . . . . .		55	0	62	0	Marseilles . . . . .		49	0	42	0
Assaetida, fair to good . . . . .		57	0	90	0	Soy, China . . . . .	per gal.	2	9	2	9
Benjamin, 1st quality . . . . .		360	0	700	0	Japan . . . . .		0	0	0	0
2nd . . . . .		240	0	350	0	Sponge, Turkey, fine picked		12	0	14	0
3rd . . . . .		50	0	240	0	fair to good . . . . .		5	0	11	0
Copa, Angola, red . . . . .		60	0	70	0	ordinary . . . . .		2	0	1	6
pale . . . . .		0	0	85	0	Bahama . . . . .		0	8	1	9
Benguela . . . . .		64	0	68	0	TURPENTINE, Rough, per cwt.		0	0	12	6
Sierra Leone . . . . .	per lb.	0	6	1	2	Spirits, French . . . . .		28	0	26	0
Manilla . . . . .		26	0	45	0	American, in casks . . . . .		28	6	0	38
Dammar, pale . . . . .	per cwt.	65	0	75	0	WAX, Bees, English . . . . .		180	0	190	0
Galbanum . . . . .		240	0	280	0	German . . . . .		170	0	195	0
Gamboge, picked, pipe . . . . .		700	0	860	0	American . . . . .		150	0	185	0
in sorts . . . . .		600	0	700	0	white fine . . . . .		0	0	0	0
Guaicum . . . . .	per lb.	0	9	2	6	Gambia . . . . .		165	0	170	0
Kino . . . . .	per cwt.	140	0	150	0	Mogadore . . . . .		170	0	175	0
Kowrie . . . . .		30	0	75	0	East India . . . . .		150	0	160	0
Mastic, picked . . . . .	per lb.	5	6	6	6	ditto, bleached . . . . .		165	0	160	0
Myrrh, gd. and fine, per cwt.		150	0	180	0	vegetable, Japan . . . . .		54	0	95	0
sorts . . . . .		80	0	140	0	WOOD, Dye, per ton					
Olibanum, pale drop . . . . .		77	6	69	0	Fustic, Cuba . . . . .		150	0	175	0
amber and yellow . . . . .		67	6	59	0	Jamaica . . . . .		132	6	155	0
mixed and dark . . . . .		24	0	40	0	Savanilla . . . . .		129	0	130	0
Senegal . . . . .		90	0	92	6	Zante . . . . .		0	0	0	0
Sandrac . . . . .		80	0	97	6	Logwood, Cunpeachy . . . . .		165	0	170	0
Tragacanth, leaf . . . . .		220	0	320	0	Honduras . . . . .		105	0	110	0
in sorts . . . . .		80	0	200	0	St. Domingo . . . . .		85	0	87	6
OILS—						Jamaica . . . . .		90	0	95	0
Seal . . . . .	per tun	35	0	41	0						
Sperm, body . . . . .		110	0	112	0						
Cod . . . . .		36	0	37	0						
Whale . . . . .		0	0	0	0						
South Sea . . . . .		39	19	0	0						
East India Fish . . . . .		37	0	0	0						
Olive, Galipoli . . . . .	per ton	67	10	68	0						
Florence, half-chest . . . . .		0	0	0	0						
Cocoznut, Cocoin . . . . .	per cwt.	56	0	57	0						
Ceylon . . . . .		51	0	51	6						
Sydney . . . . .		42	0	50	0						
Ground Nut and Gln											
Bombay . . . . .		50	0	0	0						