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THE RECORD

OF

PHARMACY AND THERAPEUTICS:

BEING AN ACCOUNT OF

RECENTLY-INTRODUCED REMEDIES,

Improved Pharmaceutical Preparations,

WITH ORIGINAL RESEARCHES ON SUBJECTS CONNECTED WITH MEDICAL SCIENCE,

AND

A CATALOGUE OF UNADULTERATED DRUGS & CHEMICALS

OF THE

General Apothecaries' Company,

(*LIMITED,*)

49, BERNERS STREET, OXFORD STREET, LONDON,
4, COLQUIT STREET, LIVERPOOL, AND
24, PARADISE STREET, BIRMINGHAM.

EDITED BY

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NEW REMEDIES NOTICED IN THE LAST NUMBER OF THE RECORD.

PREFACE.

THE present number of the "RECORD OF PHARMACY AND THERAPEUTICS" contains a brief account of the medicinal and chemical properties of several new remedies which the Directors of the General Apothecaries' Company believe to be valuable additions to the *Materia Medica*, and destined, some of them, to occupy a prominent position in the long catalogue of trustworthy agents employed in the relief of suffering humanity. While it has been the wish of the Directors to place the Practitioner in possession of every new remedy which has been suggested by the leading English, American, and Continental Physicians, they have deemed it equally necessary to direct their attention to the improvement of the old and popular remedies in common use. They would call especial attention to their new form of Pyrophosphate of Iron in pseudo-crystalline scales. This preparation is a combination of phosphorus and iron, soluble in water and almost tasteless, and presenting the rare quality of admitting of being administered in combination with any of the astringent infusions and tinctures with which the ordinary chalybeates cannot be combined. In this compound the iron appears to be almost completely masked, since it is only very slightly discoloured by either tannic or gallic acid, nor can the iron be readily recognised by any of the usual tests for that metal. The *Phosphate of Zinc* which has been successfully employed in epilepsy, appears, from the researches of several eminent physiologists to be worthy of extensive trial.

The *Chlorate of Soda* will be found to possess great advantages over chlorate of potash, both for internal and external use. In *Kamela* is presented a safe and effectual cure for tapeworm and ascarides. The extract described as *Quinium* is a new preparation of bark, which is said by several of the most eminent physicians of France to be far superior to quinine alone, or to any of the bark-preparations which have hitherto been employed.

The other new remedies described in the present

number appear to supply several important desiderata, and the Directors trust that they will be deemed worthy of the attention of medical men. Many other new medicinal agents have been brought under the notice of the Company, but until the supplies can be obtained, the Directors think it better to reserve a description of them for a future number of the RECORD.

With regard to the progress of the General Apothecaries' Company as a commercial undertaking, the Directors refer, with much satisfaction, to the half-yearly Report and Balance-sheet which will be presented to the Shareholders at the Meeting in August. By adhering faithfully to their determination to supply only the finest drugs and chemicals, of the greatest possible degree of purity, they believe they have secured the entire confidence of the Profession, and they earnestly trust that, by pursuing the same undeviating course, they will see their efforts still further rewarded by a rapid increase to the number of their supporters.

In the present number of the RECORD a new feature has been introduced in the form of a section devoted to original articles. From time to time numerous scientific questions of general interest to the profession arise, and it is the intention of the Directors to institute, in their Laboratories, a series of original researches, and to communicate the results arrived at through the future numbers of the RECORD. They have now the pleasure of directing attention to two articles in the present number, "On the Impurities of Drinking-Water," and "On the Action of Disinfectants," two subjects which have hitherto been little investigated by the Profession, and in consequence little attended to, although it must be acknowledged that they are both questions of great national importance.

NEW THERAPEUTIC AGENTS.

Pyrophosphate of Iron (in pseudo-crystalline scales).

In the last number of the *Record* (No. III., p. 12) the attention of the profession was called to the *pyrophosphate of iron and soda*, which for some time has been employed in France as a chalybeate possessing many advantages over those in common use, especially in cases of obstinate anæmia, and diseases of which that condition is a symptom. The preparation is a double salt of pyrophosphate of sesquioxide of iron and pyrophosphate of soda. It is prepared by mixing two equivalents of sulphate of sesquioxide of iron with three equivalents of pyrophosphate of soda in crystals. The formation of the pyrophosphate is represented in the following equation:—

$$\underbrace{2(Fe_2O_3, 3SO_3)}_{\text{Sulphate of Sesquioxide of Iron.}} + \underbrace{3(2NaO, PO_5)}_{\text{Pyrophosphate of Soda.}} = \underbrace{2Fe_2O_3, 3PO_5}_{\text{Pyrophosphate of Iron.}} + \underbrace{6(NaO, SO_3)}_{\text{Sulphate of Soda.}}$$

The pyrophosphate of iron is precipitated as a white amorphous powder, and sulphate of soda remains in solution. On addition of an excess of the pyrophosphate of soda, the iron re-dissolves, and forms a nearly colourless solution. This solution, however, is very unstable, and liable to decomposition. If kept in a warm place, or in a badly-corked bottle, it rapidly decomposes, and deposits the common white phosphate of iron; and in consequence its efficacy is much diminished and the dose rendered uncertain. To obviate these objections, the General Apothecaries' Company have succeeded, by the addition of a small quantity of citrate of ammonia, in obtaining the pyrophosphate of iron in pseudo-crystalline scales. In this form the pyrophosphate dissolves readily in water, forming a *tasteless* solution, which undergoes no decomposition even when kept for a considerable length of time. This preparation is justly regarded as the most elegant form of administering the pyrophosphate of iron, since it is free from all the objections attending the use of the pyrophosphate of iron dissolved by pyrophosphate of soda, and

the Directors recommend it with great confidence to their brethren as a most valuable chalybeate in all cases in which iron and phosphorus have hitherto been found useful. The dose is from three to ten grains in water, or in a bitter infusion.

Syrup of Pyrophosphate of Iron.

This syrup contains sixteen grains of pyrophosphate of iron in a fluid ounce, and may be given to children in doses of from one to two teaspoonfuls.

Phosphate of Zinc.

During the last two years, Dr. Barnes has extensively tested the restorative and curative powers of phosphate of zinc, a new remedy introduced by him in the treatment of epilepsy and other nervous affections resulting from cerebral exhaustion. Dr. Barnes was led to the employment of phosphoric acid and zinc oxide by reasoning upon the known efficacy of zinc in epilepsy, and the fact that in exhausting nervous diseases there appears to be a waste of phosphorus in the substance of the brain. The importance of phosphorus as an element of the organization is further exemplified in the richness of the more nutritious cereal grains in this element. It therefore seemed a reasonable indication to administer phosphorus and zinc in combination. Experience has fully justified this idea. In convalescence from fevers which induce great wasting of the tissues, and especially of the substance of the brain, to an extent not unfrequently leading to insanity, Dr. Barnes has exhibited phosphate of zinc with quinine and other remedies with the most satisfactory results. In combination with conium, it is frequently administered with advantage in phthisis. Dr. Barnes relates several cases of epilepsy which he has successfully treated, and in one case of insanity, following on exhaustion produced by lactation for eight months, phosphate of zinc, judiciously combined with other remedies, completely restored the patient to physical and mental health in three months. Dr. Barnes refers to the readiness with which phosphate of zinc adapts itself to the peculiarities of different cases by the facility of combination with various other remedies. He prescribes dilute phosphoric acid as the proper solvent of the

phosphate of zinc. With this solution he combines tincture of valerian, tincture of cinchona, calumba, quinine, iron, &c., according to the special circumstances of the case. The experience of Dr. Barnes is certainly decisive enough to recommend the use of the phosphate of zinc.

When pure, phosphate of zinc ($3ZnO,PO_5$) is a white crystalline powder, insoluble in water and tasteless. It dissolves readily in dilute acids, and also in ammonia and solutions of ammoniacal salts. The dose of the phosphate of zinc in powder is from two to five grains. The phosphate may be also obtained of the Company dissolved in phosphoric acid, in the proportion of six grains to a fluid drachm.

Syrup of Superphosphate of Iron and Lime.

This preparation is a solution of equal portions of phosphate of sesquioxide of iron and phosphate of lime in metaphosphoric acid. The solution is mixed with syrup in the proportion of five grains of each of the phosphates to a fluid ounce. It is recommended by Dr. Routh as a valuable remedy in rickets, and in all cases of deficient osseous development. It is very agreeable to the taste, and does not blacken the stools. It is sold in half pint and pint bottles. The dose is from one to two teaspoonfuls twice or three times a day.

Iodide of Lime.

In a verbal communication recently made to the Pharmaceutical Society, Dr. Pidduck recommended a combination of iodine and lime as possessing several advantages over iodide of potassium. These advantages consist, according to Dr. Pidduck:—

1. In the comparative smallness of the dose, and in the minute state of its atomic division (?).
2. In its ready combination with the blood and the tissues, manifested by its alterative effects.
3. In not passing off so quickly through the kidneys.
4. In not producing gastro-enteritic and vesical irritation.
5. In being inexpensive and easily prepared, and therefore not liable to adulteration.
6. In being nearly tasteless, and therefore readily taken

even by children, and admitting of a variety of combinations in extemporaneous prescriptions.

Dr. Pidduck spoke in high terms of the therapeutic effects of this combination of iodine in the treatment of those intractable cases of neuralgia occasioned by metallic poisons, such as mercury, lead, copper, &c.

This compound is prepared by boiling iodine with milk of lime, and it is probable that the iodine occurs in the same form as does chlorine in the ordinary chloride (hypochlorite) of lime, namely, as iodide of calcium and iodate of lime. For the convenience of the profession it is sold in solution, a fluid ounce containing one grain of iodine. The dose of this solution is from thirty minims to two fluid drachms.

Chlorate of Soda.

Chlorate of potash has for many years been employed with great success in those diseases which are supposed to arise from a deficiency of oxygen in the system. Drs. Garnett and Ferrier have found it very efficacious in cases of obstinate scurvy. In venereal and liver complaints it has been employed as a useful substitute for mercury. More recently it has been found of service in fever, cholera, and other diseases of a malignant character.

A lotion of chlorate of potash is frequently prescribed by Mr. Cooke, at the Royal Free Hospital, as an excellent detergent and antiseptic in chronic fœtid suppurating ulcers of the leg, or other parts of the body. It proves also very serviceable in ulcers exhibiting a tendency to sloughing. It is composed of half an ounce of chlorate of potash to a pint of water, with forty drops of strong hydrochloric acid. It is stimulating in its action, and converts a foul ulcer into a healthy-looking, granulating sore. Another form of lotion, which combines the advantages of being perhaps more stimulating and less irritating, used occasionally by Mr. Cooke, is a combination of potash and manganese (a modification of the caustic recently introduced by him) in the proportion of ten grains to the ounce of water.

Labarraque's solution (hypochlorite of soda) is similarly used in the above hospital, but is more frequently employed by Mr. De Méric as an application to warts and condylomata around the anus and vulva previously to treating them

with calomel, the specific influence of which it seems to increase.

Chlorate of potash possesses a nauseous, unpleasant taste, and is difficultly soluble in water, 100 parts of water at 60°, dissolve only nine parts of the salt.

Chlorate of soda is a salt which is very readily soluble in water, and is recommended to the profession as a substitute for the chlorate of potash. It is very soluble, its taste is much less disagreeable than that of the potash salt, and it is more readily decomposed in the system; moreover, the soda-salts generally appear to be much better suited to the system than those of potash.

Chlorate of soda, when pure, crystallizes in regular tetrahedrons. It possesses a cooling saline taste, and is very soluble in water, one part of the salt dissolving in three of cold water, and in two and a half parts of hot water.

In several of the Paris hospitals this remedy has recently been most successfully used in cases of follicular and glandular anginæ and all diphtheric affections. The dose is from three to ten grains in water.

Sulphate of Manganese Ointment.

Dr. Hoppe, a distinguished French physician, prefers a pomade of manganese to iodine ointment as a resolvent in cases where a certain degree of induration of the tissues prevails, as in old glandular engorgements, and in cases where rigidity remains after the cure of the articular disease has been effected. When applied too freely, it sometimes produces a pustular eruption, which is objectionable, except in cases of ganglionic and glandular congestion. The usual proportion is one drachm of sulphate of manganese to one ounce of simple cerate. If it be desirable to produce pustules, the quantity of sulphate is increased to one and a half drachm to the ounce. In making the ointment, to avoid grittiness, the sulphate should be dissolved in the smallest possible quantity of water before mixing it with the simple cerate or lard. Dr. Hoppe states that he has found the addition of a little extract of belladonna very serviceable. The pomade properly prepared may be obtained of the Company with the sulphate of manganese alone, or with extract of belladonna. It should be well rubbed in, and the more atonic the

affection may be, the greater should be the friction in order to obtain a good effect.

Nitro-glycerine (Glonoin).

This peculiar compound was discovered by Sobrero in 1847. He found that by gradually mixing fuming nitric acid with anhydrous glycerine, an oily compound was obtained, as explosive and as readily decomposed as gun-cotton. In operating on this substance, he found that the smallest possible quantity produced violent headache, and he consequently regarded it as a dangerous poison.

Shortly after, Dr. Vry, of Rotterdam, experimented on the same compound, and read to the British Association in 1851 a detailed account of its preparation and properties. He states that when taken in small doses it occasions headache; but having administered ten drops to a rabbit without occasioning the animal any remarkable inconvenience, he was led to conclude that it possesses no toxic qualities whatever.

The following is the best mode of preparing it:—To six fluid ounces of pure mono-hydrated nitric acid, of sp. gr. 1·5, previously immersed in a freezing mixture of ice and salt, add, very gradually and drop by drop, three fluid ounces of perfectly pure anhydrous glycerine, of sp. gr. 1·262. After each addition, the mixture should be well stirred with a glass rod, and great care taken that the temperature never rises above 10° or 12° Fahr. When a perfectly homogeneous mixture is obtained, six fluid ounces of pure and concentrated sulphuric acid are to be slowly added, taking the same precautions as before to prevent a rise of temperature. After the addition of the sulphuric acid, the new compound separates in the form of an oleaginous fluid, which floats on the surface. It is collected by means of a separating funnel.

To remove all traces of acid which adhere to it, it is dissolved in a little ether, and this solution shaken with successive portions of distilled water. The ethereal solution is then allowed to evaporate in a warm place, excluded from dust, till all the ether is expelled. By this means a perfectly pure compound is obtained.

Glycerine is composed of $C_6 H_8 O_6$. When acted on by fuming nitric acid, two atoms of the hydrogen are

replaced by two of hyponitric acid, and the compound nitro-glycerine, $C_6 \left\{ \begin{matrix} H_6 \\ 2\,NO_4 \end{matrix} \right\} O_6$, obtained. The change is represented in the following equation :—

$$\underbrace{C_6\,H_8\,O_6}_{\text{Glycerine.}} + 2\,(HO, NO_5) = \underbrace{C_6 \left\{ \begin{matrix} H_6 \\ 2\,NO_4 \end{matrix} \right\} O_6}_{\text{Nitro-glycerine.}} + 4\,HO$$

The number of atoms of hydrogen replaced by NO_4 will depend in a great measure, as in the case of gun-cotton, on the anhydration of the materials employed, on the time the acid and glycerine are left in contact, and on the temperature. In some of the very explosive compounds of glycerine described by some writers, it is probable that more than two atoms of hydrogen are replaced by hyponitric acid.

When carefully prepared as above described, nitro-glycerine is an oily liquid, of a pale yellow colour, and of specific gravity 1·6. Heated to 320° Fahr., it decomposes and evolves nitrous fumes. At a higher temperature it explodes. When a drop is placed on an anvil and is struck with a hammer, it detonates with great violence.

Under the name of *glonoin*, nitro-glycerine has been employed in America for several years, but in England only by homœopaths. Recently, it has been brought prominently under the notice of the profession by Mr. Field, who has described, in the pages of the *Medical Times*, its effect upon himself. The following particulars are condensed from his account :—

"In the evening of the 3rd of February, 1858, I was conversing with a homœopathic practitioner, when he mentioned a medicine which possesses extraordinary qualities, and affects in a singular manner the human system. Two drops of what is called the first dilution (one part nitro-glycerine, dissolved in 100 parts alcohol) were placed upon my tongue. Three minutes after swallowing it, I experienced a sensation of fulness in both sides of the neck, succeeded by nausea. The next sensation of which I was conscious was as if some of the same fluid was being poured down my throat; and then succeeded a few moments of uncertainty as to where I was, during which there was a loud rushing noise in my ears like steam passing out of a tea-kettle, and a feeling of constriction around the lower

part of my neck as if my coat were buttoned too tightly My forehead was wet with perspiration, and I yawned frequently; my intellects returned, however, almost immediately.

"When these sensations had passed off, which they did in a minute or so, they were succeeded by a slight headache, and dull, heavy pain in the stomach, with a decided feeling of sickness, though not sufficient to cause vomiting. At the end of half an hour the effects had entirely ceased. The physician who administered the dose to me was much alarmed; and I learn from him that my head fell back, my jaw dropped, I was perfectly white, breathing stertorous, and had no pulse at the wrist for two minutes. A stimulant poured down my throat immediately revived me."

Shortly after the account of Mr. Field appeared in the *Medical Times and Gazette*, Drs. Fuller and Harley tried the effects of nitro-glycerine upon themselves, and with very different results to those experienced by Mr. Field. The compound employed by Dr. Fuller was a mixture of one part of pure nitro-glycerine in ten of spirit, being ten times stronger than that taken by Mr. Field; while that used by Dr. Harley was still stronger, the pure glonoin being diluted with $6\frac{3}{4}$ parts of rectified spirit.* In the course of an hour, Dr. Fuller took one drop of pure glonoine, which is equal to 100 drops of the solution spoken of by Mr. Field, and the only effects produced were a slight fulness of the head, burning sensation in the throat, an acceleration of pulse in twenty-one minutes from eighty to ninety-six. The pupils remained unaltered, the pulse gradually abated, and at the end of an hour it was reduced to eighty, or the standard at which it was found before taking the glonoin. Dr. Fuller is of opinion that it does not produce the effects ascribed to it, and that it may be taken with impunity in considerable quantity. He, moreover, believes that the acceleration of pulse was more due to the nervousness and excitement occasioned by the experiments, than to the effects of the medicine taken. Dr. Fuller states that for some weeks previously he had been suffering from slight bronchial irritation, with frequent expectoration of thick mucus; and that since he swallowed

* Eight drops of this solution added to ninety-two drops of rectified spirit, constitutes the homœopathic "glonoine of the first dilution."

the nitro-glycerine he has neither coughed nor expectorated. The results obtained by Dr. Harley are similar to those of Dr. Fuller, and therefore need not be detailed. Mr. Field has recently taken glonoin again, and experienced none of the symptoms he first described, which were probably produced either by an accidental over-dose, or by a compound of different composition to that which is ordinarily given.

Glonoin or nitro-glycerine is undoubtedly a powerful agent, and it is probable that in a short time its effects will be carefully studied, and its therapeutic value established. As the symptoms in the case of Mr. Field were of an alarming character, those who are desirous of testing its effects are advised to commence with very small doses of a dilute solution, carefully noting its effects before repeating the dose. Being of a very unstable character, no new remedy is more likely to be of variable composition; and should it ever come into general use, we would urge upon the practitioner the precaution of commencing with the minimum dose from every new bottle obtained from the maker.

The nitro-glycerine prepared by the General Apothecaries' Company is of guaranteed purity and of uniform strength. It is sold in stoppered bottles, which should be excluded from the light and kept in a cool place.

Quinium.

This preparation, which was first proposed by M. A. Labarraque, manufacturing chemist at Havre, is now most extensively prescribed in France, and is considered by many distinguished French practitioners to possess great advantages over quinine, and indeed to be the very best preparation of bark hitherto introduced. It is prepared by adding to finely pounded bark of known richness in alkaloids a certain quantity of slaked lime, and exhausting the bark entirely by successive additions of boiling alcohol. The extract is finally obtained by evaporating the alcoholic solution to dryness.

The active constituents of the quina bark, and indeed those of most plants, are surrounded and protected from the solvent action of alcohol by resinous matters and gum. By the addition of lime the resin is saponified, and as the

soap is soluble in alcohol and the kinic acid is neutralized by the lime, the alkaloids contained in the interstices of the woody fibre are then most readily dissolved. The extract when properly prepared contains about half its weight of alkaloids in the proportions in which they naturally occur.

According to the evidence of several leading physicians, from twenty to thirty pills of three grains each are generally sufficient to cure an attack of intermittent fever. Five or ten pills are given in the course of twenty-four hours, at intervals as distant as possible from the attacks. After each dose it is advisable to take a glass of sherry or port.

Wine of Quinium.

The wine of quinium is recommended as a valuable tonic and febrifuge; it has been found of much service, when quinine alone has failed, in preventing the return of obstinate intermittent fevers. The dose of this wine, which is prepared in the laboratories of the General Apothecaries' Company with the finest sherry, is from two drachms to a fluid ounce for adults, and from one to two teaspoonfuls for children.

Kamela (Rottlera Tinctoria.)

The substance known under the name of Kamela is a brick-red glandular powder which is scraped from the tricoccous capsules of the *Rottlera tinctoria* of Roxburg. This tree, which belongs to the Natural Order Euphorbiaceæ, grows abundantly on the hilly districts of India and Burmah, also in the Philippine Islands and North Eastern Australia. According to Roxburg, the fruit ripens in February and March, when it is gathered, and the red glandular powder carefully brushed from the fruit and preserved for use. This powder has been used in India from time immemorial as a rich orange-brown dye for silk, the colouring matter, which is of a resinous character, being extracted by alkaline solutions. It has likewise been employed medicinally in certain cutaneous diseases with marked success, but it is chiefly as an anthelmintic that it claims the notice of English practitioners.

Its vermifuge properties have been carefully studied in India by Drs. Mackinnon and Anderson. The former

physician relates sixty-three cases of tænia successfully treated by this remedy, which he considers far superior to either turpentine or kousso, and Dr. Anderson records ninety-five cases, in ninety-three of which the worm was expelled after the third or fourth dose. Many other instances of its efficacy in India are mentioned, but until recently only one case of its successful administration in tænia has been recorded in England. During the last few months, however, Dr. Ramskill, Physician to the Royal Free Hospital, has employed it with partial success in numerous cases of tape-worm, six of which are recorded in the *Lancet** of May 15th. The chemical properties and composition of Kamela have been carefully studied by Dr. Thomas Anderson, Professor of Chemistry in the University of Glasgow. The powder has little smell or taste and like lycopodium it is difficultly miscible with water. Ether dissolves a considerable quantity of a resinous matter, and if the solution be allowed to stand for a couple of days it solidifies into a mass of granular crystals which when purified is seen to consist of minute scales of a yellowish colour and satiny lustre. This substance has been named by Dr. Anderson *Rottlerine*.

The formula deduced from analysis of this substance is $C_{22}H_{10}O_6$, but as yet, owing to the difficulty of combining it with other elements or compounds, the correctness of this formula has not been established. A proximate analysis gave—

Resinous colouring matters (including Rottlerine) .	78·19
Albuminous substances	7·34
Cellulose, &c.	7·14
Water	3·49
Ash	3·84
Volatile oil	trace
Volatile colouring matter	?
	100·00

Alcohol appears to extract the medicinal constituents most perfectly, and it is probable that the tincture made with absolute alcohol will be found the more suitable form for administering it. The powder may be given in doses of from one to three drachms.

* Dr. Arthur Leared, of the Great Northern Hospital, and Dr. William Moore, of Dublin, have likewise found Kamela a most valuable remedy in tape-worm and ascarides.

The tincture is given in doses of from one to two drachms in water, but as water causes a deposition of the resinous matters it is probable that the efficacy of the tincture would be greater if given on sugar.

In some cases it causes sickness, headache, and purging, but generally no unpleasant effects result from its use.*

Aconitum heterophyllum (Atees.)

The pulverized root, or more properly rhizome, of *Aconitum heterophyllum* has long been much used by the natives of India under the name of *Atees* as a pure bitter tonic and febrifuge. Unlike the rest of the genus Aconitum, it possesses no poisonous properties.

This drug, new to English practitioners, was first introduced to notice by Dr. Thomas Thompson, Superintendent of the Botanic Garden at Calcutta, whose letter on the subject was communicated to the Pharmaceutical Society† by Mr. Hanbury. Recently Mr. James Robertson has availed himself of the same medium‡ to make known the results obtained by a medical gentleman in the service of the East India Company. This gentleman regards *atees* as second only to quinine as a febrifuge. It does not affect the head and has a decided influence in preventing relapses. The dose of the powder is a scruple three times a day. The plant is figured by Royle in his illustrations of the botany of the Himalayas, and somewhat resembles the *Aconitum napellus*, only the leaves are not so deeply cut. The rhizomes are about an inch long, light gray externally and white within, and of a pure bitter taste. It grows at a height of from 9000 to 10,000 feet.

Alisma Plantago (Water Plantain).

The pulverized root of the water plantain is now extensively used in France, and with most favourable results, in the treatment of chorea and epilepsy. The patient is restricted to very regular diet, and the powder is given morning and evening in doses of three grains, which may be increased gradually to a teaspoonful. Some practi-

* For further information regarding the history and properties of Kamela see *Pharmaceutical Journal*, Vol. XVII., p. 405, and *Lancet*, May 15, 1858.

† Vol. XVI., p. 311. ‡ Vol. XVII., p. 550.

tioners, in order to obtain a rapid result, give even as much as two or three teaspoonfuls in the course of the day. If it produces eructation and a sensation of constriction of the stomach, these phenomena may be regarded as premonitory signs of a prompt amelioration of the disease. In general it produces no other unpleasant symptoms, and may be continued for a long time, without occasioning the slightest injurious effects upon the economy. It may be continued during the catamenial period, and given to very young children, commencing with doses of half a grain. Dr. Hochstetter, who has used it extensively, has been in the habit of giving it to his patients continually for several months.

The *Alisma plantago*, or water plantain, which belongs to the natural order Alismaceæ, grows abundantly in ditches and rivers in Great Britain.

The best season for collecting the roots is in the spring and autumn.

Not having been used medicinally in England, it cannot now be obtained, but the Directors intend to have some collected in August, and will then be enabled to supply it to the profession.

Glycerole of Aloes.

M. Chausit recommends a solution of alcoholic extract of aloes in glycerine in the treatment of *lichen agrius*. A case is cited of a laundress who had suffered for six weeks from lichen, complicated with painful fissures in the fingers, and surrounded by an inflamed skin with violent pruritus. After trying various topical applications for three weeks without success, the fingers were kept immovably extended upon a small splint, and the glycerole of aloes applied by means of a camel's hair pencil. In four days the bleeding chaps completely healed, and the hypertrophy and redness of the skin were much diminished; eight days later all traces of the eruption disappeared.

The author was led to the employment of aloes for the treatment of these troublesome ulcerations, from having observed the remarkable power of the tincture (which is used under the name of Friar's Balsam as a popular remedy for cuts and bruises) in expediting cicatrization in veterinary practice. Encouraged by his success, the author applied the glycerole of aloes to the excoriations from eczema,

which are analogous to the fissures in lichen, in the condition of their production and the influence they exercise in perpetuating the eruption; numerous cases successfully treated are recorded.

The action of glycerole of aloes differs essentially from that of the ordinary topical astringents and slight caustics, such as lead, zinc, tannin, nitrate of silver, &c. It is a tonic, and in this point of view offers great advantage. It acts quickly, five or six applications being sufficient to procure the cicatrization of old obstinate fissures which not only constitute a painful symptom, but become the cause of a farther extension of the disease. It is remarkable that, after the employment of glycerole of aloes the tissues have a great tendency to return to their normal condition. The tension and renitence promptly disappear, as does also the thickening of the skin—this tissue recovering all its suppleness, and indeed, in some cases, acquiring a greater degree of this than it formerly possessed.

Glycerole of aloes is a bright mahogany-coloured liquid, which never becomes turbid nor deposits. It is applied once or twice a day, according to circumstances.

Benzine or Benzol.

At a recent meeting of the French Academy, M. Bonnet, of Espinal, read a paper in which he announced that benzine is a specific for the itch. The author states that if benzine be rubbed on the parts affected, and also very slightly on the other parts of the body, a cure will be effected in the course of five minutes, after which the patient may take a warm bath for half an hour. In cases, however, where the itch is accompanied by a secondary eruption, the latter will require a separate treatment.

Benzine was first obtained by heating benzoic acid with excess of caustic lime or baryta. It may be procured likewise by passing the vapour of that acid over iron heated to redness. By these means an atom of benzoic acid is resolved into two of carbonic acid and one of benzine.

$$\underbrace{C_{14}H_6O_4}_{\text{Benzoic Acid.}} = \underbrace{C_{12}H_6}_{\text{Benzine.}} + 2CO_2$$

It may also be obtained by the dry distillation of kinic acid or by heating phthalic acid with excess of caustic lime.

Benzine is one of the products of the destructive distillation of coal, and occurs in large proportion in coal tar naphtha, associated with its homologues toluol ($C_{14}H_8$), cumol ($C_{18}H_{12}$), and cymol ($C_{20}H_{14}$), and with certain volatile bases such as aniline, picoline, and quinoleine, besides numerous other allied bodies. From these various compounds the benzine is separated by fractional distillation. Being very volatile, the first portion of the distillate contains the greater part of the benzine. This portion is agitated successively with dilute sulphuric acid, water and weak solution of potash. After being thus treated, it is again distilled, and the portion which passes over between eighty and eighty-five degrees Centigrade is nearly pure benzine. In order to obtain it perfectly pure it is solidified by a freezing mixture and submitted to pressure, whereby the other impurities are completely separated. The benzine of commerce is exceedingly impure, containing frequently as much as eighty per cent. of other hydrocarbons, besides various empyreumatic substances, which impart to it an extremely disagreeable odour. When perfectly pure, benzine at the ordinary temperature is a colourless liquid of agreeable odour and of a specific gravity of 850. It boils at 80·4 C. Submitted to temperature of —12 C, it solidifies into a crystalline mass resembling camphor. It is nearly insoluble in water, but mixes readily with alcohol and ether.

Since the attention of the profession was first called to the efficacy of benzine in scabies, the Company has supplied it to several practitioners, who have found its application eminently successful in the treatment of this disease, and also of obstinate ringworm.

Quassin.

Quassia has long been used as a pure bitter tonic, devoid of all irritant, stimulant, and astringent properties. It is an excellent stomachic, promotes appetite, and assists the digestive functions. It is a favourite remedy with many practitioners, in dyspepsia, anorexia, and other functional derangements of the stomach. *Lignum quassiæ*, distinguished by its intensely bitter taste, contains with gummy extractive, pectin and salts, a considerable quantity of a peculiar bitter principle, called *quassin* or *quassite*. This substance is the most intense bitter known. It has been

stated by Chemists to be obtainable in a definite crystalline form, but generally it is amorphous and mixed with a minute quantity of a dark-brown colouring matter, from which it is exceedingly difficult to separate it, and which slight impurity does not in any way interfere with its therapeutic action.

As all the medicinal qualities of the quassia wood are concentrated in the quassin, the latter will probably be found the most convenient form of administering it. The dose of quassin is from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain, given in the form of pill or alcoholic solution. It is probable that *quassin* would be found of great service in the obstinate stomach complaints which gouty subjects so frequently suffer from.

Collodion and Castor-oil as an artificial Cuticle.

This mixture has been used with success in King's College Hospital as an application to burns and abrasions, to form a sort of artificial cuticle. It has been employed at the suggestion of Dr. Savage, at the Samaritan Hospital, in two cases of vesico-vaginal fistula. In one of these cases there was a recto-vaginal fistula also. In both, the excoriation of the labia, perinæum, and thighs, from the constant dribbling of urine, and the consequent smarting, had been very distressing. Extreme cleanliness, careful drying of the parts, and the use of simple ointment, afforded but little relief. The mixture of one part of collodion and two parts of castor-oil was used, and gave the most marked relief. It causes some smarting for a few minutes after its application, but it then forms a smooth elastic coating or varnish, which resists the action of the urine for many hours, and effectually protects the excoriated skin from that irritating fluid.

This mixture of castor-oil and collodion has more recently been very successfully employed in numerous cases of chafed cuticle, occasioned by walking and riding on horseback. Its efficacy, however, depends greatly upon the nature of the collodion employed. If it be in the slightest degree acid, as is generally the case, it is liable to cause irritation and pain. To obviate this inconvenience, the General Apothecaries' Company prepare a perfectly *neutral* collodion of sufficient consistence to form with the castor-oil an artificial cuticle. The mixture is sold in stoppered bottles, which should be kept in a cool place and excluded from the light.

Animal Charcoal, an Antidote to the Poison of Cantharides.

M. Thouery, a French *pharmacien*, recommends animal charcoal as a valuable antidote to the poisonous principle of cantharides. He experimented on dogs, and relates fifty-four cases which were successfully treated. Recently he was called to attend a patient who appeared to be suffering under the effects of an irritant poison. He administered large and alternate doses of animal charcoal and calcined magnesia. The symptoms were immediately mitigated, and in two days the patient had entirely recovered.

It may be thought that the recovery of the patient was due to the calcined magnesia, but the editor is inclined to think that the animal charcoal was the real antidote. Animal charcoal possesses the remarkable power of absorbing from fluids any animal or vegetable poison which may be held in solution. In an examination the editor made of many specimens of bitter ale, which a few years ago was said to contain strychnine, he found that by boiling beer, to which had been added minute quantities of strychnine, with animal charcoal, *every trace of the strychnine* was removed from the beer, and not only the strychnine, but even the bitter principle of the hop. From these facts he is of opinion that animal charcoal would prove to be a most valuable antidote in all cases of poisoning by vegetable or animal substances. The Directors of the Company are now preparing a small portable case of antidotes to poisons, which the practitioner may conveniently carry in his pocket. Each case will contain a little manual descriptive of the proper treatment.

Diaphoretic Compound Camphor Powder.

The prescription for an excellent diaphoretic powder which is extensively used in the York County Hospital, is the following:—

Nitrate of Potash	ʒxii
Dover's Powder	ʒvi
Camphor	ʒiii

The camphor, pounded in the usual manner, is mixed with the other ingredients. The dose is a scruple taken at bed-time in gruel. This powder has long been a favourite remedy with Dr. Simpson of York.

ORIGINAL ARTICLES.

On the Impurities of Water.

At a season when sanatory measures are engaging so prominent a share of professional and public attention, it is hoped that the following remarks on the impurities of water may not be considered unsuited to the pages of the *Record of Pharmacy and Therapeutics*. The water supplied by public companies to the principal cities and towns of England is derived from rivers, which are the natural drains of the country. They receive in their course the sewage of towns and the surface drainage of manured lands, and derive, moreover, vast quantities of decaying animal and vegetable matter from the numberless aquatic plants and animals which abound in them. Organic matter in a state of decay, whether of animal or vegetable origin, is inimical to health, and water containing such is more or less injurious. The decomposition of organic matter is well known to be greatly hastened when it becomes mixed with a large volume of water, and hence it arises that sewage when poured into a river undergoes rapid decomposition and evolves large quantities of offensive gases and vapours.

It is difficult, indeed impossible, to adduce a correct formula for organic matter; we may, however, represent the two classes thereof—nitrogenous and non-nitrogenous—by the general formulæ n (CHONSP) and n (CHO). The recognised products of decomposition are carbonic acid, carburetted hydrogen, sulphuretted hydrogen, phosphuretted hydrogen, ammonia and water; but other constituents of unknown composition are doubtlessly evolved simultaneously, for it is notorious that the odours arising from putrescent organic matter are infinitely more offensive to the sense of smell and more injurious to health than either of the known gases and vapours above-mentioned; and from the fact that the emanations from stagnant water, or water containing organic matter, are, if not the primary cause, at least important aids to the induction of zymotic diseases, we are irresistibly led to conclude that from decaying organic

matter there are evolved other gases or vapours, which are infinitely more antagonistic to health than any of the gases with which chemists are acquainted.

Heat facilitates the decomposition of organic matter, and when water is boiled, all the putrescible constituents are decomposed, the principal products of decomposition being expelled with the steam. Hence in following the common method of analysing waters, fallacious results are obtained.

The general method adopted is to evaporate three separate portions in porcelain dishes to dryness—in the first to determine the quantity of "organic matter," silica, iron, alumina and phosphates, lime and magnesia. In the second the chlorine and sulphuric acid, and in the third the potash and soda. The acids and bases are associated together in the order of their respective affinities, and if the sum of the constituents agrees with the weight of the total solid residue obtained by direct evaporation, the analysis is considered complete. Now it will at once be obvious that by such a method of proceeding it is absolutely impossible to arrive at any satisfactory opinion as to the hygienic character of a water.

Whatever may be the actual nature of the exhalations which engender the numerous diseases classed under the general term *zymotic*, it will be evident that in evaporating a sample of water to dryness all the gases or vapours which escape spontaneously at the common temperature will be expelled with the steam, and consequently elude detection. The so-called "organic matter," remaining with the mineral constituents after evaporation to dryness, consists almost entirely of charcoal, and the loss of weight experienced on ignition forms but a very imperfect guide to a knowledge of the quantity of putrescible organic matter originally present, and the more so as at the temperature required to burn off the carbonaceous residue some of the mineral constituents themselves are volatilized, and so the loss of weight on ignition by no means represents the actual quantity of organic matter present in the residue. A series of experiments recently made on mixtures of urine (which may be regarded as the type of the impurities of river water) and distilled water have established the important fact that by evaporating to dryness a given bulk of water mixed with urine, the *whole* of the urea is converted into carbonate of

ammonia which escapes with the steam.* And so with other organic matter, all the combinations produced in the course of decay which are of a volatile character are actually dissipated in the process of analysis commonly adopted. It is therefore evident that the present mode of examining a water to decide upon its fitness for domestic purposes is exceedingly imperfect and of little value.

It is now pretty clearly established that all the nitrogen of organic matter during its decomposition is converted into *ammonia*. Now ammonia is exceedingly soluble in water, and the greater part of the nitrogen of organic matter will consequently remain as such in the water examined. The quantity of nitrogen in organic substances is known; and by determining the ammonia in water, it appears that we might arrive at an approximate idea of the quantity of organic matter from which that ammonia has been derived.

Thus in comparative experiments made with the present supply of water to London, and distilled water mixed with various proportions of urine of known contents of urea, the unpleasant fact has been clearly demonstrated that in the vapour of one pint of the water now supplied to the metropolis, there is a quantity of ammonia corresponding to eleven drops of *urine*. It may be urged that some of the ammonia in Thames water is derived from rain, but whether derived from this source (and a small proportion undoubtedly is) or from animal refuse actually decomposing in the river, the fact remains, that whatever amount of ammonia may be found in Thames or other river water, that ammonia must have been originally derived from decomposing nitrogeneous matter.

The medical practitioner is frequently called upon by his patients to give an opinion on the quality of water for dietetic purposes, and it may be of some interest to point out a simple means of testing its quality. This may be done by three processes:—

1st. By taking the hardness by means of soap test.
2nd. By determining the ammonia.
3rd. By testing the action of the water upon lead.

* The details of these experiments, which would occupy too much space in the *Record*, will shortly be published in the *Philosophical Magazine*.

All these processes may be performed by the medical man with the greatest facility and by means of very simple apparatus:—

1st. Water ought to be condemned for drinking if the hardness before boiling exceeds thirty degrees, and after an hour's boiling fifteen degrees.
2nd. If on distilling a portion, the distillate should be *alkaline* to test paper.
3rd. If the water be discoloured by organic matter, or if it rapidly tarnishes a piece of bright sheet-lead, and retains any of the lead in solution.

If the hardness exceeds the limit mentioned, the water will be liable to cause irritability of the stomach and will be unfit for cooking vegetables. An alkaline distillate indicates much animal refuse; and if the water rapidly tarnishes a piece of bright sheet-lead it indicates a dangerous solvent action on the metal.

The Directors of the General Apothecaries' Company, impressed with the great importance of medical men having the means of testing the quality of water supplied to towns in which they reside, contemplate arranging a box of tests, which will be accompanied by a little manual descriptive of the method of proceeding.

On the Action of Disinfectants.

The special action of disinfectants has hitherto attracted but little attention, and is little understood, although various materials, supposed to possess the power of destroying offensive odours, have been used for that especial purpose from time immemorial. In order to understand the real action of disinfecting agents, it will be necessary to enter into an examination of the effects thereof upon fæcal and other offensive matters, and to detail the peculiar properties of each.

In studying these important agents, which are now very numerous, it will be convenient to divide them into two classes:—

1st. Diffusive disinfectants.
2nd. Local disinfectants.

By diffusive disinfectants is meant such as are volatile at

the ordinary temperature, and diffuse themselves readily through the atmosphere. These include—

1st. Chlorine and the lower oxides of chlorine.
2nd. Nitrous and nitric acids.
3rd. Sulphurous acid.

The essentially *local* disinfectants are:—

1st. Acid perchloride of iron.
2nd. Chloride of zinc (Burnett's disinfecting fluid).
3rd. Manganate and permanganate of potash (Condy's disinfectant).
4th. Ledoyens' disinfectant (1 lb. of nitrate of lead in a gallon of water).
5th. Larnaudés' disinfectant (a solution of sulphate of zinc and sulphate of copper).

For disinfecting water-closets and sewers, the latter class are efficacious. Their action consists entirely in removing sulphuretted hydrogen and sulphide of ammonium; but there is no evidence to prove that the other offensively smelling gases arising from fæcal matter are in any way destroyed either by chloride of zinc, perchloride of iron, or by the disinfectant of Larnaudés'. It is well known that fæcal matter, in decomposing, evolves much ammonia, sulphuretted hydrogen, and sulphide of ammonium, besides other and more offensive gases with which chemists are unacquainted.

The action of perchloride of iron, in decomposing sulphuretted hydrogen and sulphide of ammonium, is expressed in the following equations:—

$$\underbrace{Fe_2Cl_3}_{\text{Perchloride of Iron.}} + \underbrace{HS}_{\text{Hydro-sulphuric Acid.}} = \underbrace{2\,FeCl}_{\text{Protochloride of Iron.}} + \underbrace{S}_{\text{Sulphur.}} + \underbrace{HCl}_{\text{Hydro-chloric Acid.}}$$

$$\underbrace{Fe_2Cl_3}_{\text{Perchloride of Iron.}} + \underbrace{3\,NH_4S}_{\text{Sulphide of Ammonium.}} = \underbrace{2\,(FeS)}_{\text{Sulphide of Iron.}} + \underbrace{3\,NH_4Cl}_{\text{Chloride of Ammonium.}} + \underbrace{S}_{\text{Sulphur.}}$$

Chloride of zinc does not decompose sulphuretted hydrogen, but its action on sulphide of ammonium is somewhat similar to that of perchloride of iron, the zinc combining with the sulphur to form sulphide of zinc, while the

ammonium of the sulphide of ammonium unites with the chlorine to form chloride of ammonium.

$$\underbrace{ZnCl}_{\text{Chloride of Zinc.}} + \underbrace{NH_4S}_{\text{Sulphide of Ammonium.}} = \underbrace{ZnS}_{\text{Sulphide of Zinc.}} + \underbrace{NH_4Cl}_{\text{Chloride of Ammonium.}}$$

Larnaudés' disinfectant likewise removes the sulphuretted hydrogen and sulphide of ammonium, but its use is attended with the great disadvantage of introducing *sulphates* into the substance to be disinfected. These sulphates in time become reduced to sulphurets, and consequently no permanent disinfection is produced. The same insuperable objection applies also to every one of the sulphates of the metallic oxides, which have often been suggested as disinfectants. The influence of manganate and permanganate of potash is of a different character.

The potassium, equally with zinc, iron, and other metals, decomposes and renders innocuous the sulphuretted hydrogen and sulphuret of ammonium; but the principal agent of disinfection is the *nascent* oxygen which is liberated from the acid in presence of decaying organic matter.

When the green manganate of potash is dissolved in water, it soon changes into permanganate, with deposition of brown binoxide of manganese, as is shown in the following equation:—

$$\underbrace{3\,(KO, MnO_3)}_{\text{Manganate of Potash.}} = \underbrace{KO, Mn_2O_7}_{\text{Permanganate of Potash.}} + \underbrace{MnO_2}_{\text{Binoxide of Manganese.}} + \underbrace{2\,KO}_{\text{Potash.}}$$

If largely diluted with water, it absorbs oxygen and becomes converted into the permanganate, without any appreciable deposition of the brown binoxide.

Permanganic acid is a very unstable compound, and readily parts with three equivalents of *nascent* oxygen to any oxidizable substance, binoxide of manganese remaining;

$$\underbrace{Mn_2O_7}_{\text{Permanganic Acid.}} = \underbrace{2\,(MnO_2)}_{\text{Binoxide of Manganese.}} + \underbrace{O_3}_{\text{Oxygen.}}$$

This compound therefore possesses a double action: the potassium decomposes the sulphuretted hydrogen and sulphuret of ammonium, while the acid evolves oxygen in a condition of activity ready to destroy any other noxious gases in the fæcal matter. Its action, however, is essentially

local, and consequently it is not applicable to the disinfection of the atmosphere of rooms.

100lbs. of manganate of potash, assuming it to be absolutely pure, would, in contact with fæcal matter, give off 8·11lbs. of *nascent* oxygen, while the potash liberated would decompose 17·23lbs. of sulphuretted hydrogen or 34·47lbs. of sulphuret of ammonium.

100lbs. of perchloride of iron will decompose 10·46lbs. of sulphuretted hydrogen or 62·76lbs. of sulphuret of ammonium. It gives off no nascent oxygen, and consequently acts as a disinfectant only by removing the above mentioned sulphur compounds.

Chloride of zinc will not decompose *free* sulphuretted hydrogen, but 100lbs. will decompose and render odourless 49·92lbs. of sulphuret of ammonium.

Ledoyen's disinfectant, which is a solution of one-part of nitrate of lead in ten parts of water, would appear to be the best of all the local disinfectants if theoretical considerations and actual results were in perfect accord. The lead decomposes both sulphuretted hydrogen and sulphuret of ammonium, 100lbs. being capable of decomposing 10·25lbs. of sulphuretted hydrogen or 20·5lbs. of sulphuret of ammonium.

The nitric acid liberated from the nitrate ought to play an important part in oxidizing the fæcal matter; but it has been shown by a series of experiments conducted in the Company's Laboratories, that, on adding nitrate of lead to sewage matter, the nitric acid liberated on the formation of sulphuret of lead immediately combines with the earthy and alkaline bases present, and so its oxidizing properties are destroyed.

Perchloride of iron and nitrate of lead act as disinfectants merely by decomposing sulphuretted hydrogen and sulphuret of ammonium. Chloride of zinc decomposes only sulphuret of ammonium, and has no effect whatever upon sulphuretted hydrogen. Manganate of potash, by the potash alone decomposes both; it is difficult, however, to determine to what extent the *nascent* oxygen may destroy organic matter, and consequently a comparison cannot be drawn between the effects of this substance and the metallic chlorides and nitrates. The disinfectants designated by the term *diffusive* act not only locally, but, being volatile, they appear to be capable of destroying all the offensive gases

and vapours which are dissipated into the atmosphere of a sick room. Chlorine, nitrous acid, and sulphurous acid may be regarded as diffusive disinfectants; when liberated in a gaseous condition they gradually diffuse into the atmosphere and remove all offensive smells in a very limited time. The disinfecting properties of sulphurous acid appear to depend entirely upon its power of decomposing sulphuretted hydrogen, one equivalent being capable of decomposing two equivalents of that gas;

$$SO_2 + 2HS = 3S + 2HO.$$

In the presence of ammonia, which invariably accompanies the gaseous emanations from decomposing animal matter, the action of sulphurous acid is neutralized, and consequently as a general disinfectant it is of little value. Of the true disinfectants *chlorine* and *nitrous acid* occupy the first rank, and offer the strongest claims to the attention of the profession. It must, however, be borne in mind that the action both of chlorine and nitrous acid is due entirely to the liberation of *nascent oxygen* which is the true disinfectant. Nitrous acid (NO_3) readily parts with one equivalent of oxygen to any oxidizable body—it then combines with another atom of common oxygen—gives it off again in a nascent condition, and so on *ad infinitum*. The original source of nitrous acid is *ammonia* (NH_3), which is found to be an invariable product of the decomposition of animal matter, and escaping into the atmosphere it soon oxidizes, under the influence of electricity and contact with solid bodies, and becomes converted into *nitrous* acid;

$$NH_3 + 6O = NO_3 + 3\,HO.$$

The author has found nitrous acid in the atmosphere and in rain water, and remembering the singular and continuously oxidizing influence of this gas, it is probable, indeed almost certain, that this is the true source of the *ozone* (nascent oxygen) which is supposed, and justly so, to play such an important part in purifying the atmosphere of the miasma arising from organic matter decaying on the surface of the earth. For disinfecting hospitals and large buildings in which many persons are confined, nitrous acid would be found cheaper and more manageable than chlorine. But for small rooms, chlorine, which can be so

readily procured, is most to be recommended. It may be obtained from either of the three following sources :—

1st. From hypochlorite of lime or soda.
2nd. From red lead, salt and sulphuric acid.
3rd. From binoxide of manganese, salt and sulphuric acid.

The common chloride of lime is a mixture of varying quantities of hypochlorite of lime, chloride of calcium, and free caustic lime. This compound when exposed to air gradually evolves chlorine, accompanied with some of the lower oxides of that element possessing a peculiarly disagreeable odour, and frequently its use is more objectionable to the patient than the odours it is intended to destroy.

Pure chlorine may be obtained by adding sulphuric acid to a mixture of binoxide of manganese and common salt, or to a mixture of red lead and salt. The two following equations show the mode in which the chlorine is evolved :—

$$NaCl+Pb_3O_4+4(HO, SO_3)=3(PbO, SO_3)+NaO, SO_3+Cl+4HO.$$

In this case the sulphuric acid gradually converts the lead and soda into sulphates, while chlorine gas is set at liberty. In a similar manner the chlorine of common salt may be liberated by acting with sulphuric acid on a mixture of salt and binoxide of manganese :—

$$NaCl+MnO_2+2(HO, SO_3)=NaO, SO_3+MnO, SO_3+Cl+2HO.$$

Both the mixture of red lead and salt, and binoxide of manganese and salt, labelled respectively "brown disinfecting powder" and "red disinfecting powder," and accompanied with suitable directions for use, may be obtained of the Company. But in using them it must be borne in mind that, properly to disinfect a sick-room, the evolution of chlorine should be *slow* and *uniform*, and to this end either of the above mixtures are much superior to hypochlorite of lime, moreover being more manageable and far less objectionable to the patient, the Directors recommend them with much confidence to the profession.

SUMMARY
OF
THE NEW REMEDIES

DESCRIBED IN THE LAST NUMBER OF
"THE RECORD."

Hypophosphites of Lime, Soda, and Potash.

These salts continue to be extensively employed in England and on the Continent in cases of phthisis. Some practitioners declare them to be specifics, while others pronounce them to be entirely valueless. It is probable that in confirmed phthisis they afford no permanent relief, but in the earlier stages of that disease they have been found highly serviceable in numerous cases which have come under the notice of the Editor.

Phosphorous Acid,

first introduced by Dr. Rowbotham as a valuable remedy for asthma, has been tried by several other practitioners, and found to afford most marked relief when all other remedies have failed.

Pyrophosphate of Iron and Soda

has been extensively prescribed by Mr. White Cooper, Mr. Ranald Martin, and other eminent physicians, with most satisfactory results; but as it is an unstable compound, and very liable to decompose, especially if kept in a warm place, the directors recommend their new pyrophosphate of iron in pseudo-crystalline scales, as a very superior substitute.

Pernitrate of Iron.

Although an old and very popular chalybeate, there were many objections attending the use of the pernitrate of iron commonly sold. As ordinarily prepared it was a bright and dark-coloured solution. In a few days, and sometimes in an hour or two, it became thick and deposited

basic nitrate of iron, and hence the proper dose of the solution could never be determined. By adopting an entirely new process the Company now prepare a per-nitrate of iron which remains bright and retains its proper strength for any length of time. It has recently been employed with extraordinary success for cases of obstinate diarrhœa in which all other remedies had failed.

Subcarbonate of Bismuth.

Of all the new remedies introduced by the Company to the notice of the profession, the subcarbonate of bismuth occupies pre-eminently the first rank. In the various diseases for which it was recommended it has been found most valuable, and from the extraordinary and increasing demand for it, the Directors are led to consider it the most important addition to the domain of Materia Medica which has been made for many years. By slightly modifying the process of preparation it is now obtained lighter and in a more finely divided form, in which state it is best given in milk.

Cyan-hydrargyrate of Iodide of Potassium

has been frequently prescribed as a remedy for secondary and tertiary syphilis, and especially in cases of obstinate skin diseases. The success which has attended its administration, in numerous instances, justifies the hope that its curative powers may be still more extensively tested.

Iodide of Cadmium,

first suggested by Dr. Garrod as a substitute for iodide of potassium in making iodine ointment, has fully borne out its character. It mixes readily with lard, forming an ointment which is devoid of grittiness, retains its white colour, and does not stain the cuticle. It appears to be more readily absorbed by the skin than iodide of potassium, and a good effect is more rapidly produced by it.

Of the other new preparations introduced into the last number, it is only necessary to mention that they are undergoing a fair trial, and that if found to possess any particular merits, the results obtained by their use will be duly recorded in the forthcoming numbers of the "Record."

The following is a List of Prices

OF

Drugs, Chemicals, and Preparations,

AS SOLD BY THE

GENERAL APOTHECARIES' COMPANY,

(Limited.)

N.B.—With respect to a few items, the prices will vary according to the markets.

DRUGS.

		s.	d.
ALOES, BARB. ELECT.	lb.	4	0
——— CAPE	,,	1	0
——— SOCOT. ELECT.	,,	4	0
AMYGDAL. JORDAN	,,	2	6
——— VALENT.	,,	1	6
AQUA, FLOR. AURANT.	,,	1	4
ARROWROOT, BERMUDA	,,	2	8
——— ST. VINCENT'S	,,	1	8
BALS. CANADEN.	,,	2	6
—— COPAIBÆ	,,	2	8
—— PERUV	,,	8	0
—— TOLUT	,,	4	8
CAMPHOR, ANG	,,	1	8
CAP. PAPAV. CONTUS.	,,	0	8
CARYOPH. AROMAT.	,,	2	0
CERA ALB.	,,	2	8
—— FLAV.	,,	2	3
CETACEUM	,,	2	6
CHIRAYITA	,,	1	4
COCCINELLA	oz.	0	6
CORT. AURANT. ANG	lb.	2	8
—— CASCARILLÆ	,,	1	0
—— CINCHON. CORDIF.	,,	5	4
——— LANCIF.	,,	3	0
—— CINNAM.	,,	5	0
—— LIMONIS.	,,	2	0
—— QUILLAI	,,	5	4
—— SIMAROUB.	,,	2	0
—— ULMI. FULV.	,,	2	6
CROCI IN FŒNO	oz.	2	0
ESS. BERGAMOT, SUPER.	,,	1	3
—— LIMONIS, do.	,,	1	0
FLOR. ANTHEM. ANG.	lb.	2	0
FLOR. ROSÆ, ANG.	lb.	8	0
FOL. BUCHU	,,	2	0
—— CONII	,,	1	4
—— DIGITALIS	,,	1	4
—— HYOSCYAM, BIENNIAL	,,	4	0
—— SENNÆ, ALEX.	,,	2	0
——— PARV.	,,	0	10
—— UVÆ URSI	,,	1	8
GUM ACACIÆ ELECT.	,,	1	9
——— SORTS	,,	0	10
—— AMMON. GUTT.	,,	2	6
GUM ASSAFŒTID.	,,	1	4
—— BENZOES, ELECT	,,	4	6
—— GALBAN.	,,	4	6
—— GAMBOGIÆ	,,	2	6
—— GUAIACI	,,	2	6
—— KINO	,,	1	0
—— MYRRH. ELECT.	,,	3	4
—— SCAMMON. VIRGIN.	,,	44	0
—— TRAGACANTH	,,	4	0
KOUSSO, PULV.	oz.	0	9
LICHEN, ICELAND	lb.	0	8
LIGN. QUASSIÆ INCIS.	,,	0	8
—— SASSAFRAS	,,	0	8
LOBELIA INFLAT.	,,	2	8
MACIS, OPT.	,,	6	0
MANNA, FLAKE	,,	8	0
——— PARV.	,,	3	6
MATICO	,,	1	8
MOSCHUS, GRAIN	oz.	84	0
NUX. MOSCH.	lb.	6	6
OL. AMYGDAL.	,,	1	8
——— ESSENT.	oz.	2	6
— ANETHI ANG.	,,	1	0
— ANISI, IND.	,,	1	6

		s.	d.
OL. ANTHEM. ANG.	oz.	5	6
— CAJEPUTI	,,	1	0
— CARUI, ANG.	,,	1	0
— CARYOPH.	,,	0	9
— CASSIÆ	,,	2	6
— CINNAM.	,,	6	0
— COPAIB. ESS.	,,	0	6
— CROTONIS	,,	1	0
— CUBEBÆ	,,	1	6
— JECORIS ASELLI.	lb.	1	4
— JUNIPER, ANG.	oz.	2	0
— LAVEND. ANG.	,,	4	0
—— EXOT.	,,	1	0
— MENTH. PIP. ANG.	,,	3	6
—— EXOT.	,,	1	6
—— VIRIDIS	,,	1	6
— MYRISTICÆ	,,	1	6
— OLIVÆ, OPT.	lb.	1	0
—— SEC.	,,	0	10
— ORIGANI	oz.	0	6
— PIMENTÆ	,,	2	6
— RICINI, OPT.	lb.	1	0
—— SEC.	,,	0	8
— RORISMAR.	oz.	0	4
— SASSAFRAS	,,	1	0
OPIUM, SMYRNA	lb.	24	0
—— PULV.	oz.	2	0
OTTO ROSÆ	,,	20	0
PIPER. CAYENNE	lb.	3	0
PULV. ALOES, SOCOT.	,,	4	8
—— ACACIÆ	,,	3	4
—— CINCHON. CORDIF.	,,	6	0
—— LANCIF.	,,	4	0
—— CUBEBÆ	,,	2	4
—— GLYCYRRH. DECORT.	,,	4	8
—— IPECAC.	,,	6	8
—— IRIDIS	,,	1	4
—— JALAPÆ	,,	4	0
—— LINI.	,,	0	3
—— cum OLEO.	,,	0	4
—— MYRRH, TKY.	,,	4	8
—— RHEI, ANG.	,,	2	0
—— IND.	,,	6	8
—— TKY.	,,	16	0
—— SAPONIS	,,	2	4
—— SARZÆ, JAM.	,,	5	4
—— SCAMMON. VIRGIN.	,,	52	0
—— SCILLÆ	,,	1	8
—— SINAPIS VER.	,,	2	0
—— ZINGIB.	,,	2	8
RAD. ACONITI, NAPEL.	,,	3	6
—— CALUMBÆ, ELECT.	,,	1	0
RAD. GENTIAN	lb.	0	8
—— GLYCYRRH.	,,	1	0
—— IPECAC.	,,	5	6
—— IRIDIS	,,	0	8
—— JALAPÆ	,,	3	4
—— RHÆI, IND.	,,	4	8
—— TKY.	,,	14	0
—— SANGUINARIÆ CANAD.	,,	4	0
—— SARZÆ, JAM. INC.	,,	4	6
—— SCILLÆ	,,	0	8
—— VALERIAN, ANG.	,,	1	0
—— ZINGIB. JAM. ELECT.	,,	2	6
—— SORTS	,,	1	8
SAGO, PERLAT.	,,	0	4
SAPO. CASTIL.	,,	0	8
SECALE CORNUT.	,,	2	4
SEM. CARD. MIN.	,,	5	0
—— CARUI	,,	0	8
—— LINI.	,,	0	3
TAMARIND, OPT.	,,	1	0
TAPIOCA	,,	0	10

CHEMICALS.

ACID, ACETIC. P. L.	lb.	1	0
—— AROMAT.	oz.	1	6
—— BENZOIC	,,	1	8
—— CITRIC	lb.	4	0
—— GALLIC	oz.	1	0
—— CHROMIC	,,	2	0
—— HYDROCHLORIC, PUR.	lb.	1	0
—— HYDROCYANIC. P. L.	oz.	0	6
—— SCHEELE'S	,,	0	9
—— LACTIC	,,	1	6
—— NITRIC, PUR.	lb.	1	4
—— PHOSPHORIC, DIL.	,,	2	8
—— SULPHURIC, PUR.	,,	1	0
—— AROMAT.	,,	4	0
—— TANNIC	oz.	0	9
—— TARTARIC, PULV.	lb.	2	0
ACONITINA	gr.	1	6
ÆTHER, ACETIC	lb.	6	8
—— CHLORIC	,,	4	8
—— SULPH. RECTIF.	,,	6	8
ALLOXAN	oz.	7	0
AMMON. BENZOAT.	,,	2	0
—— HYDROCHLOR. PUR.	lb.	2	0
—— SESQUICARB. PUR.	,,	1	4
AMYLENE	oz.	2	6
ANTIM. POTASS. TART.	lb.	2	8
—— PULV. COMP.	,,	2	8
ARGENTI CYANID.	oz.	6	8

		s.	d.
ARGENTI NITRAS, FUSA	oz.	4	8
——— CRYS.	,,	4	6
——— OXID.	,,	8	6
ATROPINA	gr.	0	6
BEBEERINE, SULPH.	oz.	5	6
BISMUTH, TRISNIT.	lb.	6	8
——— SUBCARB.	,,	6	8
CALC. CHLORIN. PULV.	,,	0	4
——— SOLUT.	,,	0	4
—— HYPOPHOSPH.	oz.	6	0
CHLOROFORM	lb.	8	0
CINCHON. DISULPH.	oz.	4	8
COLLODION	lb.	8	0
CREOSOTE	oz.	0	8
CRETA PRÆPAR.	lb.	0	3
——— PRÆCIP.	,,	0	10
CUPRI, AMMON. SULPH.	oz.	0	6
EMETINA	,,	10	6
FERRI, AMMON. CHLORID.	lb.	4	0
——— CITRAS	,,	5	4
——— cum ZINCO	,,	5	4
——— TART.	,,	5	4
—— CARB. cum SACCH.	,,	3	6
—— CITRAS cum QUINA (20 per cent. pure Quinine)	oz.	4	6
—— IODIDUM	,,	1	8
—— LACTAS	,,	3	0
—— PERNITRATIS, LIQ.	lb.	1	8
—— PERACETAT. LIQ.	,,	1	8
—— POTASS. TART.	,,	5	4
—— SESQUIOXYD. PUR.	,,	1	8
—— SULPHAS	,,	0	8
—— VALERIANAS	oz.	4	0
GLYCERINE	lb.	5	4
——— IODURET	,,	10	8
HYDRARG. AMMON. CHLORID.	,,	4	8
——— BICHLORID.	,,	3	4
——— BINIODID.	oz.	1	8
——— CHLORID.	lb.	4	0
——— cum CRETA	,,	3	4
——— IODIDUM	oz.	2	0
——— NITRIC OXYD.	lb.	4	8
——— SULPH. cum SULPH.	,,	4	0
IODOFORM	oz.	12	0
IODINE (RE-SUBLIM.)	,,	2	0
JALAPINE	,,	8	0
KALI, ACIDULAT.	lb.	2	4
LIN. CAMPHOR. COMP.	,,	3	4
—— HYDRARG.	,,	2	4
—— SAPONIS, COMP.	,,	2	8
LIQ. AMMON. ACET. CONC. 1 to 7	,,	1	8
——— P. L. 960	,,	0	8
LIQ. AMMON. FORT. 880	lb.	1	8
—— CORNU CERVI.	,,	1	0
—— HYD. ARSEN. cum HYD.	,,	1	8
—— PLUMBI DIACET.	,,	0	8
—— POTASSÆ	,,	0	8
——— BRANDISH	,,	1	4
LUPULINE	oz.	2	0
MAGNES. BICARB. SOLUT.	lb.	0	10
——— CALC.	,,	3	6
——— POND.	,,	4	8
——— CARBON. PULV.	,,	0	10
——— POND.	,,	2	8
MAGNES. SULPHAS	cwt.	10	6
——— PUR. CRYST.	lb.	0	4
MANGANESII, SULPH.	oz.	0	8
MORPHIÆ, ACETAS	,,	12	6
——— HYDROCH.	,,	12	6
——— SULPH.	,,	12	6
——— BIMEC. SOL.	,,	0	6
NAPHTHALINE	,,	1	6
NARCOTINA	,,	20	0
PEPSINE	,,	4	0
PLUMBI ACET. PUR.	lb.	1	4
——— IODIDUM	oz.	1	8
POTASS. ACETAS	lb.	3	4
——— BICARB. PULV.	,,	1	4
——— CARBON. PUR.	,,	1	0
——— CHLORAS	,,	2	4
——— NITRAS PUR.	,,	0	10
——— PULV.	,,	1	0
——— SULPH. PULV.	,,	0	8
——— TART	,,	2	8
POTASSII BROMIDUM	oz.	1	4
——— CYANID.	,,	0	6
——— IODIDUM	,,	1	0
——— SULPHURET	lb.	1	8
——— CHLORIDUM	,,	1	0
QUINÆ, DISULPH.	oz.	7	6
——— (NEUTRAL)	,,	8	6
—— VALERIANAS	,,	28	0
QUINIDIN, SULPHAS	,,	5	0
SACCHAR. LACTIS	lb.	1	8
SALACINE	oz.	2	4
SANTONINE	,,	8	0
SCAMMONINE	,,	10	0
SODÆ BIBORAC. PULV.	lb.	1	4
—— CARB. EXSICAT.	,,	1	4
—— CHLORID. SOLUT.	,,	0	6
—— HYPOPHOSPH.	oz.	6	0
—— POTASS. TART. PUR.	lb.	1	4
—— SESQUICARB.	,,	0	8
SP. ÆTHER, NIT. ·834	,,	3	4

		s.	d.
SP. ÆTHER, SULPH.	lb.	3	4
——— COMP.	„	4	0
— AMMON. AROMAT.	„	3	4
——— FŒTID.	„	3	4
SPONGIA UST.	„	10	0
STRYCHNIA, CRYST.	oz.	16	0
——— PULV.	„	15	0
SULPHUR. IODIDUM.	„	2	0
——— SUBLIM.	lb.	0	3
——— PRÆCIP. PUR.	„	1	4
VERATRIA	oz.	12	0
ZINCI, ACETAS	lb.	5	4
—— CHLORID. (STICKS)	oz.	0	8
—— IODIDUM	„	2	6
—— OXYDUM	lb.	2	8
—— SULPH. PUR.	„	0	8
—— VALERIAN.	oz.	3	6

PREPARATIONS, &c.

ACETUM CANTHARIDIS	lb.	8	0
——— COLCHICI	„	1	8
——— DESTILL.	„	0	6
——— OPII	„	4	0
——— SCILLÆ	„	1	4
AQUA, CINNAM.	„	1	4
—— DESTILL.	gal.	0	6
—— FLOR. SAMB.	lb.	0	6
—— LAVEND. ANG.	„	6	8
—— ROSÆ	„	0	6
CAPSICINE	oz.	3	6
CERAT. CETAC.	lb.	1	10
——— CALAM.	„	1	4
——— HYDRARG. COMP.	„	4	0
——— PLUMBI CO.	„	1	4
——— RESINÆ	„	1	4
——— SABINÆ	„	2	8
——— SAPONIS	„	2	8
COPAIBA, SOLUBLE	„	4	0
CONFEC. AMYGDAL. PULV.	„	4	0
——— AROMAT.	„	4	8
——— OPII	„	4	4
——— ROSÆ CANIN.	„	1	4
——— GALL.	„	1	8
——— RUTÆ	„	4	0
——— PIPER. NIGR.	„	2	8
——— SENNÆ. P. L.	„	2	4
DECOCT. ALOES (COMP. 1 to 3)	„	5	4
——— SARSÆ, JAM. (COMP. 1 to 15)	„	12	0
——— (SIMP. 1 to 15)	„	14	0
DIGITALINE	gr.	0	6
ELATERIUM	oz.	20	0
EMP. AMMONIAC.	lb.	2	8
——— C. HYDRARG.	„	4	0
—— BELLADON.	„	3	4
—— CANTHAR.	„	4	0
—— FERRI	„	1	4
—— GALBANI	„	1	8
—— HYDRARG.	„	2	8
—— OPII	„	6	0
—— PLUMBI.	„	0	10
—— PICIS, COMP.	„	1	4
—— ROBORANS.	„	1	8
——— C. SANG. DRACON.	„	2	4
—— SAPONIS	„	1	4
ESS. AMBERGRIS	oz.	4	0
—— CAMPH. CONC.	lb.	4	0
—— JASMIN	„	14	0
—— MILLEFLEUR	„	14	0
—— PAPAV. ALB.	„	3	4
—— ZINGIB. CONCENT.	„	5	4
EXT. ALOES, SOCOT. AQUOS.	„	6	8
—— ANTHEMIDIS	„	6	8
—— BELLADONNÆ	„	8	0
—— CANAB. IND. RESIN	oz.	3	4
——— AQUOS.	„	2	0
—— CINCHON. FLAV.	„	2	0
——— LANCIF.	„	1	0
—— COPAIBÆ RESIN	„	0	4
—— COLCHICI, ACETIC	„	1	0
—— COLOCYNTH. COMP.	lb.	16	0
——— PULV.	„	20	0
—— CONII	„	4	0
—— FELLIS, BOV.	„	14	0
—— GENTIAN	„	2	8
—— GLYCYRRH.	„	4	8
—— HUMULI	„	12	0
—— HYOSCYAMI	„	8	0
—— IGNAT. AMAR.	oz.	5	4
—— JALAPÆ	„	1	0
——— RESIN.	„	4	0
—— LACTUCÆ	„	0	8
—— NUCIS VOMIC. ALCOHOL	„	4	0
—— OPII	„	3	6
—— PAPAVERIS	lb.	4	8
—— PAREIRÆ BRAV.	oz.	2	6
—— RHEI	„	1	6
—— SARSÆ, JAM.	lb.	16	0
——— COMP.	„	14	0
——— HYD.-ALCOH.	„	16	0
—— STRAMONII	oz.	1	0

		s.	d.
EXT. TARAXACI	lb.	5	4
GINGERINE	oz.	4	0
INFUS. AURANT. CONCENT.	lb.	2	8
—— BUCHU	,,	5	4
—— CALUMBÆ	,,	2	8
—— CARYOPH.	,,	2	8
—— CASCARILL.	,,	2	8
—— CINCHON. CORD.	,,	24	0
—— LANCIF.	,,	16	0
—— GENT. CO. CONC.	,,	2	8
—— HUMULI CONC.	,,	4	8
—— QUASSIÆ	,,	2	0
—— RHÆI, IND.	,,	4	8
—— TKY.	,,	7	4
—— ROSÆ	,,	3	4
—— SENNÆ	,,	2	8
LACTUCARIUM	,,	30	0
LIQUOR AMMON. VALERIAN (8 grs. to an ounce)	,,	4	0
—— CINCHONÆ SACCH.	,,	10	0
—— MENYANTH. TRIFOL.	,,	4	0
—— OPII, SEDAT.	,,	16	0
—— QUINÆ, AMMON.	,,	6	8
—— QUINIODIN ACETAT. (5 oz. bot.)		4	0
—— SULPH.	,,	4	0
—— SENNÆ, DULC.	lb.	3	4
—— TARAXACI	,,	5	4
—— SUCC.	,,	6	8
MIST. SENNÆ COMP.	,,	0	10
OL. FILICIS MARIS	oz.	3	6
— JECORIS cum QUINA	lb.	4	0
— TEREB. PURIF.	,,	1	4
OXYMEL, SCILLÆ	,,	1	2
—— SIMPLEX	,,	1	2
PIL. ALOES cum MYRRH	,,	8	0
— COLOCYNTH. COMP.	,,	16	0
— FERRI COMP.	,,	5	4
— GALBANI COMP.	,,	6	8
— HYDRARGYRI	,,	3	4
—— CHLOR. COMP.	,,	5	4
— IPECAC. COMP.	,,	5	4
— RHÆI COMP.	,,	8	0
— SAPONIS COMP.	,,	8	0
— SCILLÆ COMP.	,,	4	0
PULV. CINNAM. COMP.	,,	5	4
—— CRETÆ COMP.	,,	2	4
—— cum OPIO	,,	4	8
—— IPECAC. COMP.	,,	6	8
—— JALAPÆ COMP.	,,	3	4
—— SCAMMON. COMP.	,,	32	0
—— TRAGAC. COMP.	,,	2	8

		s.	d.
SAPO, MOLLIS. P.L.	lb.	1	2
SPT. ARMORACIÆ COMP.	,,	3	4
—— MYRIST.	,,	2	8
—— RORISMAR.	,,	3	4
SYR. AURANT.	,,	1	4
—— CROCI	,,	1	8
—— FERRI CITR.	,,	3	4
—— cum QUINA	,,	4	0
—— FERRI IODIDI	,,	2	8
—— cum QUINA	,,	4	0
—— MORI	,,	1	8
—— PAPAV. ALB.	,,	1	0
—— RUBR.	,,	1	0
—— RHAMNI	,,	1	0
—— SARZÆ, JAM.	,,	5	4
—— SCILLÆ	,,	1	0
—— SENNÆ	,,	1	4
—— TOLUT.	,,	1	4
—— VIOLÆ	,,	2	4
—— ZINGIB.	,,	1	4
TINCT. ACONITI	,,	5	4
—— ALOES	,,	2	8
—— COMP.	,,	3	4
—— ASSAFŒTIDÆ	,,	3	4
—— AURANTII	,,	2	8
—— BENZOINI COMP.	,,	4	0
—— CALUMBÆ	,,	2	8
—— CAMPH. COMP.	,,	2	8
—— CANNAB. IND.	,,	5	4
—— CANTHARIDIS	,,	2	8
—— CAPSICI	,,	2	8
—— CARDAM. COMP.	,,	2	8
—— CASCARILLÆ	,,	2	8
—— CASTOREI	,,	8	0
—— CATECHU COMP.	,,	2	8
—— CINCHONÆ	,,	3	4
—— COMP.	,,	4	0
—— CINNAMOMI COMP.	,,	2	8
—— CONII	,,	3	4
—— CUBEBÆ	,,	3	4
—— DIGITALIS	,,	2	8
—— ERGOT. ÆTHEREA	,,	6	8
—— FERRI SESQUICHLORID.	,,	3	4
—— GENTIAN COMP.	,,	2	8
—— GUAIACI COMP.	,,	4	0
—— HYOSCYAMI	,,	2	8
—— JALAPÆ	,,	2	8
—— IODINII COMP.	,,	5	4
—— KINO	,,	3	4
—— LAVENDULÆ CO.	,,	3	4
—— LIMONUM	,,	2	8
—— LOBELIÆ	,,	3	4

		s.	d.
TINCT. LOBELIÆ ÆTHEREA ...	lb.	5	4
—— LUPULI	„	2	8
—— MYRRHÆ	„	3	4
—— OPII	„	4	8
—— QUINÆ COMP.....	„	5	4
—— RHEI COMP.	„	3	4
—— SCILLÆ	„	2	8
—— SENNÆ COMP.....	„	2	8
—— SUMBUL.....	„	3	4
—— TOLUTANI	„	4	0
—— VALERIANÆ	„	2	8
———— COMP.....	„	3	4
—— ZINGIB.	„	3	4
UNG. BENZOINAT.	„	2	8
—— GALLÆ COMP.	„	2	8

		s.	d.
UNG. HYDRARGYRI	lb.	3	4
—— HYDRARGYRI NITRATIS .	„	3	4
———— NIT. OXYD.	„	2	8
—— IODINI COMP.	„	5	4
—— PICIS.....	„	1	4
—— SAMBUCI	„	2	0
—— SULPH.	„	1	4
———— COMP.	„	1	4
VIN. ALOES	„	3	4
—— ANTIM. TART.	„	2	8
—— COLCHICI	„	3	4
—— FERRI	„	3	4
—— IPECAC.....	„	3	4
—— OPII	„	6	8
—— VERATRI	„	3	4

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