





THE SUBSTITUTION OF HOMŒOPATHIC MEDICINES.

WE are anxious to call the serious attention of the trade to a letter from Messrs. Leath and Ross, which appears in our issue of this month. Those gentlemen have taken some trouble to furnish us with abundant proof of the accuracy of their complaint, and we have in our possession some very discreditable specimens of mean and dishonest trickery, in the shape of bottles of homœopathic medicines, which have evidently been tampered with. It is assuredly somewhat pitiable to see any man in a respectable position taking such everlasting pains to remove one label and attach another, throwing away his integrity at the same time, for the sake of a few pence. It is still more contemptible if, after that performance, the tradesman should chuckle to himself in the idea that he had done a smart thing. Under the circumstances, such an action is far meaner than the street-boy's when he sells us an *Echo* of yesterday instead of to-day. We are glad that Messrs. Leath and Ross have reason to believe that such tricks are comparatively rare among chemists, and we are quite sure that they cannot be at all general; but it is evident that the whole trade is interested in the promotion of strict honesty, because it is not desirable that the public should, by any means, or in the slightest degree, lose that confidence in chemists which is the best stock-in-trade a pharmacist can possess.

POISONOUS COLOURS.

It is rather amusing to watch the desperate encounters which every now and again occur between the irrepressible votaries of medicine and chemistry, on the one hand, and the indignant champions of maligned commerce on the other. The Adulteration Act, for instance, is fast becoming a stone of stumbling and a rock of offence to many opposing interests, and we can scarcely wonder that the poor worried milkman, or the harassed tea vendor, beset with police inspectors and detectives, should find his brow contracting, and his voice assuming an irascible tone, as he meets the suspicious countenances and equivocal utterances of his various customers. The question of poisonous colours has long been a bone of contention between interested manufacturers and uninterested health officers. Amongst the former class the *American Manufacturers' Review* has taken up the defensive, and boldly asserts that the "hue and cry of would-be hygienists is a bit of scientific humbug." It says:—

"It would be folly to deny that there are a number of pigments and colours that are poisonous in the ordinary acceptation of the term—that is to say, will affect the human organism injuriously when introduced into the stomach, or directly into the blood. But paints and dyes are not intended either to be eaten, or to be made into poultices for wounds; they are intended for purposes of textile ornamentation, and in being thus used, they become in most instances so firmly fixed upon the fibre, that the idea of their exercising a deleterious influence cannot be reasonably entertained. To enforce our position, let us take the aniline colours. Arsenic enters largely into the process of their preparation, and very many of them contain arsenic when they are placed in the market. They are used to an enormous extent in dyeing fabrics and colouring cordials, hair oils, etc., yet not a single authentic case of

poisoning by aniline colours when thus applied is on record, at least, as far as our knowledge extends. . . . The colouring power of these dyes is so enormous, that only a very small portion suffices to stain a large quantity of fabric. It has been demonstrated by analysis, that, taking the most poisonous sample of aniline red that was found in the market, the quantity of arsenic in a square inch of average fabric would amount to about the one hundred thousandth part of a grain, a quantity practically null."

So much for the manufacturer, against whom as a standing witness comes Dr. Joseph G. Richardson, widely known in America, as a "practitioner, lecturer and author." He reports as follows:—

"J. B. a farmer, seventy-four years old, residing near Darby, in the vicinity of Philadelphia, came under my care in the out-patient department of the Pennsylvania Hospital, January 27, 1873. His neck, face and head were much swollen, and displayed an erysipelatous redness, which was accompanied with intense smarting and burning pain, so severe that for more than a month he had been unable (according to his own account) to sleep at night. On investigation, I found that the attack had first made its appearance about seven weeks before, in the form of an eruption of 'little water blisters' upon the sides of the neck and on the chin below the angles of the mouth, from whence it had spread to the extent above mentioned. . . . I learned that two weeks before the affection first appeared, he had commenced wearing a silk neck-handkerchief, newly dyed of a crimson colour. . . . On examining the handkerchief, I immediately recognised the brilliant hue of red aniline, with which most microscopists are so familiar; but, in order to determine the point beyond all doubt, I tested a small portion of the stuff as recommended by M. Tardieu in his memoir upon the subject, namely, by first boiling the suspected tissue in strong alcohol, when the spirit became of a bright red colour, whilst the fabric was partly bleached in the process, and afterwards, by adding ammonia to the tincture thus prepared, which, by rapidly decolorizing the fluid, demonstrated that the cause of all this mischief was aniline, and not coralline."

In confirmation of this, Dr. Alfred L. Carroll, New York, relates two similar instances which occurred in his own practice last summer, and many other cases have been published in the various medical journals. Of course in a contest of this kind, some margin must be left on both sides for overdrawn statements. But in the face of the evidence there seems no doubt that aniline colours are injurious to the skin, although the effects produced on individuals may widely differ.

ENTERPRISE.

We respectfully request the attention of the Pharmaceutical Council to the following "prospectus" of the Universal Drug Supply Association (Limited), announcing the intention of the directors to establish branches in the various London districts. We cut it from the *Times* of July 12. Here are certain gentlemen, who are anything and everything except registered chemists and druggists coolly advertising themselves as ready to undertake the dispensing of prescriptions at any hour of the day or night. Is this legal?

1. The central store of the Association, situate at 357, Oxford-street, within a few minutes' walk of the Circus, and two doors from Messrs. Gilbey's (late the Pantheon), is established, and in full working order. It is under the management of qualified apothecaries and chemists.

2. The compounding department receives especial attention.
3. Prescriptions are made up with the utmost possible despatch, at any hour of the day or night, and delivered either in town or country.
4. The directors are entering into arrangements for the supply of many foreign productions, which have been hitherto obtainable only with difficulty; and, from the facility and extent of their operations, are enabled not only to command all articles of the very first quality, but to place them at the disposal of the public at very much lower rates than those hitherto charged, still admitting of a liberal dividend to the shareholders.
5. The directors have now decided to extend their operations, by establishing several branches in the different London districts, and acquiring premises suitable for a manufactory, where the conversion of the raw material will be carried on, and also where a special department will be fitted with the most approved appliances for producing the various mineral and other waters, from which they may fairly anticipate a very large and remunerative business.
6. For this purpose they have decided to issue a second allotment of shares, in number not to exceed 2,000 £5 shares fully paid up.
7. As an investment the shares of this Association present most favourable features, there being nothing speculative in its transactions. The directors have every confidence, from their present satisfactory returns, that each share will bear a minimum dividend of 6 per cent. per annum, payable half-yearly, together with a further yearly division of the surplus profits, after a reserve fund for contingencies and the half-yearly 6 per cent. dividend has been provided for.
8. The first issue of shares for the establishment of the central store has been fully subscribed for by the directors and their friends, and those shares now to be issued are exclusively for the purpose of extending the operations of the Association.
9. For the benefit of the necessitous poor, persons charitably disposed can purchase books at the store, containing 21 orders, each order entitling the holder and his or her family to purchase articles of every description dealt in by the Association at cost price, provided such articles are for their own use.
10. Orders by post are promptly attended to, and despatched by an early conveyance after receipt.

HOMŒOPATHIC SENTIMENTS.

THERE was a medical homœopathic dinner at San Francisco on the birthday of Hahnemann (April 10th), and the champagne seems to have been of a very high quality. One toast was "The San Francisco Medical and Surgical Dispensary," which the President helped along with the following sentiment:—"May it continue to prosper, and scatter its blessings among the sick poor of all nations, for all time to come." One cannot fail to admire the coolness with which in this toast San Francisco asserts its metropolitan character, and ignores the pretensions of little local institutions in Europe and America. But the sentiment was a modest one compared with the next, which was proposed by Dr. M. T. Wilson, and which ran as follows:—"Homœopathy, like the Star of Empire, westward takes her way, effectually spreading her healing wings o'er land and sea, overleaping all barriers of class, caste, or distinction. Her motto is: *Veni, vidi, vici.*" After vainly struggling to get some meaning in this bouncing magnificence we come to the conclusion that the gentleman who composed it had very appropriate initials.

SIMPLE TREATMENT.

THE proverbial value of gratuitous advice is humorously satirised by the editor of the *Dumebury News*, who tells us how a neighbour troubled with a severe cold on the lungs effected his cure:—He boiled a little boneset and horehound together, and drank freely of the tea before going to

bed. The next day he took five pills, put one kind of plaster on his breast, another under his arms, and still another on his back. Under advice from an experienced old lady, he took all these off with an oyster knife in the afternoon, and slapped on a mustard plaster instead. His mother put some onion drafts on his feet and gave him a lump of tar to swallow. Then he put some hot bricks to his feet and went to bed. Next morning another old lady came in with a bottle of goose oil, and gave him a dose of it in a quill; and an aunt arrived at about the same time from Bethel, with a bundle of sweet fern, which she made into tea, and gave him every half hour until noon, when he took a big dose of salts. After dinner, his wife, who had seen a fine old lady of great experience in doctoring, on Franklin-street, gave him two pills of her own make, about the size and shape of an English walnut, and two tablespoonfuls of home-made balsam to keep them down. Then he took half-a-pint of hot rum at the suggestion of an old sea-captain in the next house, and steamed his legs with an alcohol bath. At this crisis two of the neighbours arrived, who saw at once that his blood was out of order, and gave him half-a-pint of spearmint tea, and a big dose of castor oil. Before going to bed he took eight of a new kind of pills, wrapped about his neck a flannel soaked in hot vinegar and salt, and had feathers burnt on a hot shovel in his room. He is now thoroughly cured, and full of gratitude. We advise our readers to cut this out and keep it where it can be readily found when danger threatens.

ECONOMY OF COAL.

THE *Boston Journal of Chemistry* tells a curious story, which carries out literally some of the comic conceits indulged in recently in consequence of the price of coals. It is said that the British freight steamer *Cassini* sailed from London to Philadelphia last February, and when twenty days out, found its supply of coals exhausted. In order to meet the emergency some empty grain bags were first used, but they did not answer well, so the master next ordered the sacrifice of several cases of assafœtida, which were accordingly supplied to the furnace. Nitro-glycerine would have been a luxury in comparison with this, and it was a considerable time before the steamer got unmedicated. Among the rest of the cargo consumed were 500 serons of Peruvian bark, worth not less than £7,000, which were consigned to Messrs. Powers and Weightman, quinine manufacturers, of Philadelphia. It is said that the captain is censured for not having used more discretion in the selection of articles for fuel.

NOBLE GIFTS.

WE announced some time ago that Mr. Holloway was about to erect at Virginia Water, at his own cost, an institution for the reception of middle-class lunatics where the cost of maintenance would be very moderate, but where the arrangements and medical aid would be of the highest possible character. The building, which is a very handsome one, is in course of erection, but it seems this is but the first instalment of Mr. Holloway's munificence. It has now transpired, says the *Times*, that Mr. Holloway has decided to erect two or more hospitals in the vicinity of London—one for the reception of incurables, a class in our midst peculiarly claiming the attention of the philanthropist; another for the reception of convalescents, who want bracing after long suffering before renewing their struggles in the world. The estimated cost of sites and buildings is put at

£250,000. Mr. Holloway does not propose to endow the hospitals. He will erect and present the hospitals, but will leave to the philanthropic of this and future ages the duty of maintaining them. Mr. Holloway has recently had an interview with Mr. and Mrs. Gladstone, at which he explained his intentions. Mr. Holloway desires to secure the best advice as to locality, the number of possible recipients, the best form of building, and requisites towards making them at once, architecturally, the most ornamental, and internally the most perfect in the kingdom. With this view letters have been addressed to medical and other authorities inviting a full expression of opinion. One can but admire the generous spirit which prompts this gentleman to make such a splendid use of the fortune which he has acquired by energy and courage, and we must also recognise the thoughtful ingenuity of the new paths of charity struck out, and the bold but just reliance which entrusts their maintenance to the unknown future.

PLATINUM FOR COINAGE.

By the time that the English mind has been "educated" to follow in the wake of other countries, and adopt the metric system of weights and measures and a decimal coinage, the very material which constitutes our "filthy lucre" may have been superseded. The idea of substituting platinum for our gold and silver coins, is not a new one. Years ago Russia made the experiment; but science not having kept pace with enterprise, the attempt was a failure—not that platinum was found to be objectionable for purposes of circulation, but solely on account of the difficulty of working it. That difficulty was, however, overcome by Deville and Debray in 1859; and at the International Exhibition in 1862, Messrs. Johnson, Matthey, and Co., exhibited an ingot of pure smelted platinum, 280 lbs. in weight, and valued at £4,000. The expediency, therefore, of employing it in coinage, is again being discussed, and the advantages claimed for the new rival are far from being few or unimportant. It is the heaviest metal that could be used, its specific gravity being 21.5, whilst that of gold is only 19.2; and this fact affords an excellent security against counterfeits. It resists corrosion and the action of chemical agents quite as well, if not better, than gold; and being, moreover, of a harder nature, it does not require so much alloy to protect it from wear and tear; its scarcity also gives it a sufficiently intrinsic value. When the question of an uniform system of international currency is under consideration these facts will doubtless receive due attention from the various scientific commissions.

A BOTANICAL ATTRACTION.

Those who regard botany as a dry science should study it in the fashion recommended by Sir Walter Scott, as the proper mode in which to view fair Melrose aright. Once a year the Royal Botanic Society gives the opportunity of viewing their charming grounds by the pale moonlight, though truly they aid fair Luna in an abundant degree. This annual *fête* was held last Wednesday evening, and a more lovely night could not have been chosen. The air was soft but not close, the velvety turf was quite dry, no wind interfered with the thousands of lights which by their variety produced a charming artificial light and shade, while some ten thousand ladies and gentlemen, the former in all the radiance of ball-room costume, paraded the broad promenades or rested in the airy conservatories. The gentle undulations of the gardens, and the luxuriance of the foliage made the illuminations particularly effective, and

when the rose and green tinted magnesium lights were brought into action, the gay scene partook of an almost unearthly character. Several military bands enlivened the entertainment, and a handsome show of fuschias and other flowers attracted but too little attention. Without in Regent's Park was crowded a mass of carriages sufficient to carry away the inhabitants of a good-sized town. The study of botany under such circumstances as these possesses certainly all the fascinations which its lovers claim for it.

TOILET SOAPS BY THE COLD PROCESS.—There are two methods by which toilet soaps may be prepared, these are known as the hot and the cold processes. The fine English soaps are chiefly made by boiling, but in America most of the fancy soaps are made by the cold method. When made by boiling, a weak caustic lye is used, and the soap is boiled until it is almost perfectly free from alkali. The soap, which is then in solution, is separated from the water by "salting out;" the glycerin, of course, remains in the water and is lost. The cold process is briefly as follows: The fat is melted in a well-cleaned iron or copper kettle at a low temperature, then filtered through fine linen or muslin into another kettle, and cooled to 104° Fah. or lower; a very strong lye, usually about 36° B. is added, 80 lbs. of fat requiring about 40 lbs. of lye. It is then stirred with a wooden paddle until a ring made by stirring may be recognized. At this time the colouring matter and perfumery are added. It is next run into frames lined with muslin, closed, and left for twelve hours, by which timesaponification will have taken place, the temperature rising to over 175° Fah. It is now ready to be taken from the frame, cut, dried, and sold. Soaps made by this process are softer and pleasanter, because they contain the glycerin; but they are unfortunately always more or less alkaline, no matter how much care is bestowed upon their preparation. A Frenchman named Mialhe claims to have invented a method of neutralizing the free alkali, and thus combining the advantages of both methods and making a perfectly neutral glycerin soap. This is accomplished by taking the ordinary soap prepared by the cold process, shaving it up fine, and spreading it out on grates in suitable chambers, where it is exposed to the action of carbonic acid gas until all the free soda is converted into the bicarbonate of soda. Thus a perfectly neutral soap is obtained, which contains all the glycerin present in the grease and a certain quantity of bicarbonate of soda.

DARWINISM IN THE KITCHEN.—The proofs of the truth of the Darwinian theory of development are getting more and more overwhelming. It explains many phenomena which would otherwise remain inscrutable. Our New York contemporary, the *American Grocer*, has made a clever use of it in the following verses:—

"I was taking off my bonnet,
One afternoon, at three,
When a hinseck jump'd upon it,
As proved to be a flea.

"Then I takes it to the grate,
Between the bars to stick it;
But I hadn't long to wait
Ere it changed into a cricket.

"Says I, 'Surely my senses
Is a gettin' in a fog,'
So to drown it I commences,
When it halts to a frog.

"Hore my heart began to thump,
And no wonder I felt fuuky;
For the frog with one big jump
Leap'd hisself into a monkey.

"Then I open'd wide my eyes,
His features for to scan,
And observed, with great surprise,
That the monkey was a man.

"But he vanished from my sight,
And I sunk upon the floor,
Just as Missus, with a light,
Came inside the kitchen door.

"Then beginning to abuse me,
She says, 'Sarah, you've been drinkin'.'
I says, 'No, mum, you'll excuse me,
But I've merely been a thinkin'.'

"But, as sure as I'm a cinder,
That party what you see
A-gettin' out o' whinder,
Have developed from a flea!"



NOVELTIES IN FRENCH PHARMACY.

DURING a recent visit to Paris we collected a few of the elegant pharmaceutical novelties which the accomplished French pharmacists produce so carefully, and some of which may be profitably introduced in the better class trade of this country. We shall proceed to give a short description of some of these.

M. Limousin has lately introduced a novel method of administering powder in what he terms a *Cachet Médicamenteux*. This consists of two round discs of wafer paper, fitting on each other and fastened round the edges, enclosing between them a certain dose of the medicament. These *cachets* vary in size from that of a sixpence to a florin, according to the bulk of the powder. They are most perfectly made, and each is stamped with embossed letters indicating the name and quantity of the medicine enclosed. These are put up for sale in pretty little tin cases, and as a contribution to elegant pharmacy, these *cachets* deserve to rank high. Among the powders thus treated we may name the sulphate of quinine, rhubarb, sulphur, reduced iron, magnesia, and charcoal. M. Limousin's London agents will be found enumerated in his advertisement.

Another novelty, which is quite worth examination, is the *porte-remède* of M. Reynal. M. Reynal's invention is medicated, soluble bougies and suppositories. These are a composition of gum and sugar, which perfectly maintain their form, and are variously medicated. The bougies, for example, are medicated with sulphate of zinc, tannin, rhatany, chloride of zinc, etc., and are for use in cases of gleet where an injection would be employed. By using these bougies it is evident that the remedy is kept in continual contact with the disease, and is therefore so much the more certainly efficacious. They have been very thoroughly tested in certain of the special hospitals of Paris with most favourable results. Messrs. Roberts and Co., of New Bond-street, are M. Reynal's agents in England.

Dr. Vivien's cod-liver oil dragées are already known to some extent in this country. They are like red sugar-plums, but each encloses a portion of extract of cod's liver. Dr. Vivien has recently made considerable improvements in the preparation of this extract in order more perfectly to obtain the medicinal properties of the oil. With the same extract the same gentleman prepares a cod-liver wine, which is also a pleasant preparation.

The protoxalate of iron is a comparatively new medicinal preparation, but its merits have been somewhat extensively tested by several eminent physicians of Paris. From a report presented last year to the Paris Academy of Medicine, and signed by (among others) Drs. Viglu, Herard, and Gubler, we take the following paragraph:—"This preparation, being almost tasteless, is readily taken by patients, and never disagrees with the stomach. In doses of 10 or 12 centigrammes a day it gives new strength, and cures chloro-anæmia, like other good preparations of iron; but what chiefly distinguishes this new salt of iron is, that it never brings on constipation; on the contrary, when the doses are increased to 30, 40, or 50 centigrammes a day, it is an effectual cure for that complaint." The protoxalate of iron is a lemon yellow powder, almost tasteless and very stable. Messrs. Grimault and Co. are the manufacturers, according to a process of Dr. Girard. Messrs. Newbery are the English agents.

An eye ointment, manufactured by M. Cremer, and called *Pomade de Cremer*, is especially worth the notice of surgeons. It is an ointment of the hydrated binocide of mercury, a preparation recognised by all the chief oculists as the best application for ulcerous and inflammatory affections of the

eye. The peculiarity of M. Cremer's invention is the tube in which the pomade is supplied. This is very similar to the well-known perfume fountains; but it has a fine point, so that it may be directed to any particular spot under the eyelid or beneath the skin, and the quantity regulated with the most perfect certainty. Messrs. Newbery are also agents for this.

As items of pharmaceutical news in Paris we may mention that Messrs. Newbery have recently opened their more central and convenient offices in the Rue de Provence, where they are developing their scheme for representing the medical specialists of both nations.

M. Chassaing has removed from his former establishment at 2 to 5, Rue de la Coutellerie, where he has a very commodious establishment. His bi-digestive wine is making good progress in England.

Mr. Woodcock has bought the Pharmacie Meyerbeer in Paris, and added another to the already considerable roll of English and American chemists in that city.

The French pharmacists have made great efforts to represent their profession well at the Vienna Exhibition, respecting which we hope to have more to say next month.

The very important perfumery house of Légrand invites through our pages the attention of British buyers to its special products. This firm was the one specially appointed as perfumers to the late Emperor.

NORTH GERMANY.

BERLIN.

MENTION was made in the last number of this journal that the increase in the number of *Apotheken* in Berlin did not keep pace with the progress of its population, and that especially during the last two years, notwithstanding the astounding growth of the city and its inhabitants, as regards numbers, only one or two new *Apotheken* were licensed.

At this moment (the 6th July, 1873) the President of Police in Berlin issues a notice to the effect that eight additional licenses shall be granted immediately. Although it may be two years ere these eight new shops will be in working order, this is certainly a good step in advance. It is rumoured too that it is on the cards to proceed still more vigorously in the same direction to bring the number of *Apotheken*—of which there will be now sixty—eventually to seventy. The desire to increase them to 100 is nevertheless not unreasonable.

The mode of starting a new business in Berlin is this. The applicant must name the particular district where he wishes to fix himself, and presuming that the license for a new shop is granted, the president of police will assign minutely the locality for the future *Apotheke*. The applicant must then produce his *curriculum vitæ*, a statement of his property and his certificate as apothecary; he must buy a house, and establish therein the *Apotheke*, which will then be inspected on behalf of the government, and afterwards may be opened for business.

Hitherto strict impartiality with regard to the granting of licenses has not been the rule, and a very little time ago it was most difficult for any *Apotheker* to obtain a license, unless he had connections in the highest circles. Lately, a concession has again been granted to a former proprietor who, for many years, has carried on the business of brick manufacturer. This gentleman can now sell his business, if he chooses so to do, like another party who, by a similar transaction, pocketed some 60,000 thalers.

Many such cases might be enumerated; but it is not the purpose to write a *chronique scandaleuse* on the proceedings of the heads of the department; on the contrary, all previous dark doings shall be and remain covered by this new notice, which will no doubt be followed by others, provided the new licenses are granted according to seniority, and not on the principle of high connections and nepotism.

It should be said here that the police presidency of Berlin is merely the medium and not the distributor of licenses; these are in Berlin, as in all provincial towns, in the hands chief commissioner of the district.

The General Meeting of the "Grossen Deutschen Apothekervereins," whose constitution was confirmed on the 9th May by the German emperor during his stay in St. Petersburg, will

take place in Cologne on the 4th September, 1873. All friends and brethren in the profession will be welcome, and pharmacutists from England will be received with particular pleasure. As Vienna is attracting so many travellers to the continent this year, it may be mentioned that Cologne is a place well suited for a short halt. The committee has made the novel and doubtless very practical arrangement that members of the profession who may be prevented from attending personally may state their opinion or proposal in writing in order to initiate discussion on any matters. The committee will reply to inquiries on this subject, which should be addressed to APOTHEKENBESITZER DR. SCHACHT, in Berlin.

MALT EXTRACT.

Since Joh. Hoff, by extensive advertising, attracted the eyes of the world to his malt extract, and urged on by Liebig's theories as to the nourishment of man, physicians have been busy in studying the effects, and pharmacutists the production of, a real extract, only and solely prepared from malt. The "German Pharmacopœia" has even adopted as official an ordinary thick extract of malt, and mentions one impregnated with iron; since then in all German *apotheken* malt extract is produced in large quantities. The excise authorities have now taken the matter up and summoned many apothecaries to pay malt duty in the belief that a liquid similar to beer is produced therefrom. No answer has as yet been given to the complaints made about this demand on the part of the apothecaries; but it is evident that a duty in the sense of a tax on malt liquors is not contemplated by the Excise Act, which names particularly only the fermented liquids obtained from the malt.

In all German *apotheken* a condensed malt extract is now sold in wide-necked bottles of about 150 grammes, at 7½ silbergroschen (= 9d.).

Of late malt extract has been dried and converted into a powder—it easily dissolves, is not easily affected by damp, and is very convenient for dispensing.

STUDIENDIRECTORS, OR PRECEPTORS OF PHARMACY IN GERMAN UNIVERSITIES.

One often hears mention made of "studying pharmacutists," *i.e.*, these who prepare themselves for government examination within the university. These students, however, must not be confounded with those studying medicine or law, the latter having perfect freedom to select which lectures to attend, while the pharmacutists have to take at the beginning of each session instructions from the "Studiendirector" (an institution of past ages) as to the lectures they are to attend, in the fashion of Wagner and Faust-Mephistopheles. The pharmacutist is often twice the age of another student, he comes with experiences gathered in his own life, has earned his living for many years, and may have starved himself in order to scrape together the sum necessary to complete his studies.

Now at last these "Studiendirectoren" have obtained the *coup de grâce*—they need not be pictured in long robes with wigs, etc.—the whole institution was a sham. There has never been heard of a case of penalty if a pharmaceutical attended other than the proscribed lectures or left those unattended which had been named by Mr. "Studiendirector."

It would certainly be worth knowing, from a historical point of view, why the pharmacutist who can never go to the university before he is 22½ years or age must have an academical guardian, while other students, who, as a rule, enter the university at the age of 17, must discover for themselves the advantages and every disadvantage of an academical life.

As a rule the pharmacutists in Prussian universities are looked upon almost with contempt; while all other students matriculate, and are named in the official registers, the pharmacutist is only entitled "to hear," and they are mentioned merely as so many who "hear" lectures.

It is not surprising, therefore, that in Prussian universities the number of those who are only allowed "to listen," and who were hitherto guarded by a "Studiendirector," became gradually less, while in other German universities they are increasing in number in such a degree that, in Leipzig, at this moment they equal the aggregate number of all Prussian universities, with the exception of that in Berlin only.

This state of things is not surprising. Professors of veterinary science, surgery, &c., are everywhere, but nowhere is there a professor of pharmacy, and even to read a lecture on pharmaceutical chemistry is held to be derogatory to their dignity by professors of chemistry in Prussia, so a private tutor is deputed for the task; the case is similar as regards practical pharmacy and other branches.

SOUTH GERMANY.

VIENNA, June 29th, 1873.

THE "Allgemeine Oesterreichische Apotheker Verein" has a great number of opponents, especially among those members of the profession who favour free-trade principles. Some two years ago the committee of the Society placed the real state of affairs regarding pharmacutists in Austria before the Reichsrath, in the form of a memorial, and as a consequence the petitions presented by the opposing party (for free-trade) were simply refused by Government. The apostles of this latter persuasion immediately commenced to revile and abuse every proceeding of the Society in a monthly publication—"Die Pharmaceutische Post," established and supported by that clique. Notwithstanding this animosity, the Society has lately gained ground in a manner highly commendable. Established originally for the purpose of assisting poor or sick members, the Society (always mindful of this primary object) resolved to make a collection of important drugs, and thus afford diligent students of pharmacy an opportunity of extending their knowledge. The first impulse to this collection was given by valuable contributions and presents from eminent members of the profession. This collection developed in a short time into a magnificent show, and rendered the acquisition of a library necessary, and also opened the way for giving gratuitous instructions to students. In addition to this, the Society opened a few years ago an analytical laboratory, and resolved to found two scholarships to be awarded annually to two poor but industrious students of pharmacy. The Austrian Government recognises the zeal of the Society by giving it every possible assistance and encouragement.

Instead of aiding the Society to ameliorate the existing state of things by a steadfast working hand in hand, the enemies formed themselves into an association in opposition, the rules of which were published some time ago; all this, however, being done without the support of any well-known name. The new Association, under the title "Allgemeine Oesterreichische Pharmaceuten Verein," commands but little confidence, and the adversaries seem almost afraid of joining issue; at any rate a profound silence reigns at present in their camp.

On Friday, the 27th June, the jury for Group III., "Chemical Industry," at the Vienna Universal Exhibition, commenced the inspection of exhibits, and especially those of pharmaceutical preparations, medicinal plants, and ethereal oils. The members of the jury are the following:—President: Professor Dr. A. W. Hoffman, of Berlin. Vice-presidents: Professor Wurtz, Paris; Professor Hlasiwetz, Vienna; and Gastinel Bey, Egypt; Mr. T. Lawrence Smith, America; M. Chandelon, Belgium; Dr. T. Pizarro and Dr. J. Paula da Fouseca, Brazils; M. Benzon, Denmark; Dr. von Fehling, Dr. Hübner Kunheim, Dr. Wagner, and Dr. Wunder, German Empire; Don José Torres Munoz de Luna and Don José Gil de León, Spain; MM. Sainte-Claire-Deville, Kuhlmann, and Chiris, France; Dr. Crace Calvert, Great Britain; Sigs. Cannizzaro, Candiani, and Gemellaro, Spagna, Italy; M. Serrurier, Netherlands; Herren Hartl, Hoenstetter, Matscheko, Dr. Schrötter, and Seybel, Austria; Dr. Neutwich, MM. Mosch, Kochmeister, Machlup, Rosa, and Dr. Pillar, Hungary; M. Beilstein, Russia; M. Bergstrand, Sweden; Dr. Kopp, Dr. Goppelsröder, MM. Bertheaud, and Hürlmann, Switzerland; M. Boukowski and Dr. Labisch, Turkey.

STEARIN MANUFACTURE—continued from last issue.

By separation of the fatty matters a dilute watery solution of glycerine is obtained—the alcoholates of triatomic glycerine with which the sebacic acid in the fat is impregnated, which

has only to be evaporated in order to obtain the glycerine. This process has been adopted in most of the manufactories only recently. A very limited use of glycerine was made in former years, while at present it is produced at the rate of many thousand cwts., and is extensively used in the manufacture of various toilet articles, for soap, for refining wine, etc. It does not freeze in even very cold weather, and is therefore an excellent lubricant and very useful in gas meters. This property of glycerine is so well known that the several glass vessels filled with some really beautiful crystals of glycerine and modestly occupying the corners of the Milly Monument, attracted especial attention. Like phenoline, benzoline, and many other organic combinations, glycerine only crystallizes in a state of perfect purity, and the minutest foreign matter deprives it of this property. Once in a solid state, it will melt only in a high summer temperature. Under certain conditions the crystals attain a size which allows their angles to be measured. Whether in practice this glycerine will be extensively used is very questionable, owing to its naturally high price; it is, however, certain that for scientific experiments it will be of great service.

The quantity of purified glycerine produced at Sarg's manufactory is estimated at 10,000 cwts. For the production of this large quantity it is of course necessary to buy up alkalines from other works.

Of late years frequent attempts have been made to replace stearic acid by some cheaper product, and paraffin, composition, Belmontine, and other kinds of candles have been produced; although largely used they will never supersede the undoubtedly finer stearin candles. A few years ago the manufacture of candles of bleached ozokerit commenced, and this ozokerit promises to play an important part in future in Austrian industry. Ozokerit or earthwax, in the Polish language called *wisk*, is chiefly found in Galicia on the slopes of the mountain chain, known as the Carpathian, especially in the vicinity of Boryslaw near Drohobicz, also in Moldavia near Slamick, and on the Caspian Sea. It is found in blocks often to the weight of several cwts., or in layers between the slate which contains the mineral oils, at a depth of frequently more than 120 feet. In a low temperature it is brittle and hard, not unlike bees'-wax, pliable when pressed in the hand, and varying in colour from orange-yellow to greenish black. The fracture is fibrous; smell of an ethereal sweetish kind, rather agreeable, and somewhat like wax, from which it derives the name ozokerit. It melts between 50 to 56°C., and its specific gravity is 0.920 to 0.950.

There are two manufactories in Austria which refine and bleach this earthwax on a large scale. They are the Galizische Actieu Gesellschaft in Boryslaw, and the Ceresin Fabrik, near Stockerau. Both are well represented in the Exhibition Palace by articles exhibited in Group III. The Ceresin Fabrik especially seems to have attained very good results in its manipulation of ozokerit, their exhibits being remarkable for complete freedom from smell, for a dazzling white colour, and for the almost imperceptible difference from bees'-wax in regard to colour, appearance, and ductility.

Being much cheaper than wax, and equally well adapted for the manufacture of candles, flowers, figures, paper, &c., it is also useful for cosmetrical, technical, and pharmacutical purposes, and employed in many places throughout Austria in preference to bees-wax. The refined or purified ozokerit is sold under the name of *ceresin*.

A DANGEROUS DONKEY.—A short time ago an old man, named Cassidy, who hawks salt and whiting in the district, was grazing his donkey on the road side, near Foulford, when it suddenly turned upon him, knocked him down, and was in the way of despatching him with its feet and teeth, when a man, who was at work in the neighbouring field, came to his rescue with a pitchfork. The donkey was driven off, and the old man conveyed home. His limbs were torn in several places, and his injuries were so serious that medical assistance was called in. The doctor, among other remedies, ordered half a dozen leeches to be applied to the wounded parts, but Cassidy's wife being in doubt as to how they should be administered, fried three and boiled three. The patient took them all, remarking that he had least difficulty in swallowing the boiled ones! As it was not the first occasion on which his life had been endangered by the donkey, it was killed.—*Galloway Advertiser*.

CURIOSITIES OF PHARMACY.

OBSELETE AND QUESTIONABLE ANIMAL REMEDIES.

BY P. L. SIMMONDS.

NOW that practical education and scientific knowledge, added to profound chemical research, are so widely diffused, and inquiry and publicity have added to the general stock of information, it is curious to look back upon some of the quaint opinions entertained as to the medicinal virtues and uses of the most singular substances. Thinking that it might amuse and interest many, I have thrown together a few jottings as to some of the animal products, which certainly have no place in applied zoology or practical pharmacy at the present time. Many of the animal substances which found a place in the old pharmacopœias have long since been struck out, and but comparatively few remain; the vegetable and mineral kingdoms supplying most of our drugs and remedial agents.

Insects once formed a class of medicines, which were considered highly effective in certain cases; and there was a time when three gnats were taken as a dose, just as three grains of calomel might be taken now; while three drops of lady-bird milk were formerly prescribed as seriously as a small dose of some fashionable medicine at the present day.

Ants' eggs are not only considered good food for ducks, but they also serve as a choice relish for bread and butter, like caviare. Ants' brood or ants' eggs are subjected to a duty on import in several of the northern countries, especially in Denmark and Norway, and even in Spain. In Norway ants are collected and steeped in boiling water, and then is thus obtained the peculiar secretion dilute formic acid, which serves the purposes of vinegar.

Wood-lice and ants were formerly used, and many beetles prescribed for relieving toothache. It is even still alleged that the little insect known as the golden cetonina, found in considerable numbers on rose-trees, when pounded to a powder and administered internally, produces in the person a sound sleep, which lasts sometimes thirty-six hours, and which has the effect in many cases of nullifying hydrophobia symptoms.

The Deetamalec resin of India, which has a most disagreeable odour, is said to be formed by the puncture of insects on the branches of *Gardenia lucida*, Roxburgh; a tree found in the Coorg jungles and other places. Powdered or made into an ointment, with country calomel and ghee, or fluid butter, it is extensively used in the East as a dressing for slight wounds or putrid sores, either in man or beast.

The sacred beetle (*Scarabæus sacer*) is eaten by the women of Egypt, and regarded as the emblem of fertility. The oil beetle (*Meloe proscarabæus*) exudes a deep yellow oil from the joints of the legs, which was esteemed diuretic, and used in rheumatic complaints. It has also been recommended in hydrophobia. Captain Owen, R.N., in his "Narrative of Voyages on the Eastern Coast of Africa," vol. ii. p. 238, states that a kind of paste made from the cockroach (*Blattorius talis*), administered internally, was found one of the most powerful antispasmodics known, and particularly useful when diluted with water in the case of lock-jaw. *Blaps sulcata* is eaten by the Turkish women, cooked with butter, in order to make themselves fat. It is also believed to act as an antidote against the carache and the sting of the scorpion.

In Attwood's "History of Dominica," we are told that the fat of snakes is esteemed an excellent remedy for rheumatism or for sprains, by rubbing it mixed with strong rum. The skins of the dog's-head snake are also made use of thro by some surgeons in medicine.

The vulgar Persians entertain the belief that a species of snake, and a hard green substance about the size of a bean, found in some part of the animal, is reckoned an infallible cure for the bite of a serpent. Gollig stones, extracted generally from the head of the porcupine, are in much repute among the Malays for medicinal purposes.

The flesh of serpents was held in high repute by the ancients medicinally, and when properly prepared seems to have been a very agreeable article of food, corresponding with

the turtle soup of the present day. Vipers are much used on the Continent still, I believe, for their medicinal reputation, and the Italians occasionally regale themselves with a jelly made of stewed vipers. Macfarlane, in his "Southern Italy," tells us that though no Roman or Neapolitan peasant will eat of a tame goose, yet he has seen great black snakes fried and eaten both in Calabria and Sicily. Kaempfer informs us that snakes are eaten in Japan. Sir Emerson Tennant, in his work on Ceylon, says:—"The Singhalese have a notion that swallowing the tongue of the iguana is a remedy for sundry diseases."

In Guatemala there is a popular belief that lizards eaten alive cure the cancer. The Indians are said to have made this important discovery, and in 1780 the subject was investigated by European physicians. I do not find this remedy in the modern pharmacopœias, nevertheless the inhabitants of Amatitlan, the town where the discovery was first made, still adhere to their belief in its efficacy.

The man who first ate a live oyster or clam was certainly a venturesome fellow; but the eccentric individual who allowed a live lizard to run down his throat was infinitely more so. There is no accounting for taste. Probably some of our learned physiologists and medical men may be able to explain their therapeutic effects.

The skink (*Scincus officinalis*) has held a high reputation in Eastern countries from time immemorial as a restorative, but its medicinal virtues are but fanciful. In Arabia it is believed to cure cutaneous diseases, and even elephantiasis; and Pliny reports that it was considered a specific against poisoned arrows.

Mr. T. C. Auber, in a paper on "Economic Zoology," read at one of the meetings of the British Association, thus spoke of the lion:—"Formerly the fat of the lion was an object of much importance in medicine, as great virtues were attributed to it. Only as lately as 1618 lions' fat was amongst the *materia medica* of our pharmacopœia. Galen prescribed it as an antidote for poisons, and, mixed with wine, he asserted it expelled evil beasts, but whether from the person or his vicinity we are not informed. The smell was said to drive away serpents. The Roman physicians had great faith in remedies derived from this animal. Pliny enumerates the following:—First, as a cosmetic, the fat, mixed with the oil of roses, protects the skin of the face from all kinds of spots, and preserves the delicacy of the complexion; and, secondly, as an unguent, it was used in various affections of the joints, especially in cases of injury from frost. The gall was considered a powerful remedy; mixed with water, it was applied to weak eyes; mixed with lions' fat, and taken internally in very small doses, it was considered a remedy for epilepsy, but the patient is ordered to run immediately after swallowing it. Quartan fevers they professed to cure by giving the patient a roasted lion's heart; and quotidian fevers, with the mixture of its fat with the oil of roses. They also believed that wild beasts flew from those anointed with lions' fat, and that it was even a safeguard from human treachery. If Roman physicians had such faith in the leonine products, it is not surprising that the magicians of that day should also employ portions of the king of beasts. We are informed that they sold an ointment made of the fat as a means for obtaining the favour of kings and other great people for the person anointed with it. They also attributed the same virtues to the possession of a lion's rib, especially if taken from the right side; also to the shaggy hairs of the lower jaw. In these times it is difficult to understand the meaning of such remedies, but it is not so very long since, we had many animal products in general use which were supposed to be efficacious in consequence of the peculiar characteristics of the animals themselves when living."

The Marquis of Hastings in his private journal, when Governor-General of India, tells us that when a lion was killed anxious interest was made with his servants for a bit of the flesh, though it should be but of the size of a hazel nut.

Every native in the camp, male or female, who was fortunate enough to get a morsel, dressed it and ate it. They have a thorough conviction that the eating a piece of lion's flesh strengthens the constitution inculcably, and is a preservative against many particular distempers. This superstition does not apply in India to tiger's flesh, though the whiskers and claws of that animal are considered as

very potent for bewitching people. Probably this is why the ladies in the higher circles of our country now wear so much tiger-claw jewellery.

The natives of the Malay peninsula, however, eat the flesh of the tiger, believing it to be a sovereign specific for all diseases, besides imparting to him who partakes of it the courage and sagacity of the animal.

It is pretended (says Dr. Brooks) that the skin of the red wild cat has a great virtue in easing the gout when it is laid upon the grieved part, for which reason it is held in high esteem at the Cape.

Remedial effects have been assigned to various parts of the domestic cat. Thus, Pliny asserts that the ashes of the liver, mixed in water and drunk, "helpeth the stone." Galen maintained that the ashes of the head of a black cat, burned in a glazed vessel, and put in the eye with a quill, "helpeth the haw, wert, and web in the eye; and if there be heat in the night, two or three oak leaves wetted with water, and applied, helpeth the same." Both Wesin and Sylvius, two ancient physicians, prescribed a diet of cat's flesh for hæmorrhoids and lumbago.

Pliny also tells us that the fæces of this animal were used as a remedial agent. "First, mixed with mustard, it was held of great value in curing ulcers in the head; or alone as a cataplasm, it was used to draw out thorns." Secondly, mixed with resin and oil of roses (a very necessary addition) it was administered as a remedy for uterine ulcerations.

The fat of many wild animals, such as the panther, lion, wolf, boar, bear, and goat, was used for an unguent in elephantiasis and other diseases. Chimpanzee fat and marrow, and the adipose tissue of the monkey and alligator, are in high favour as rubefacients among the Africans in Sierra Leone.

Bear's grease from the time of the Romans has enjoyed a great reputation as a pomade for the hair, but with no other reason than the supposition that the full growth of hair on the animal whence it is derived is in some way connected with its fat. The spread of knowledge has, however, led in this, as in many other cases, to want of faith in its virtues, and a preference for more agreeable ingredients; bear's grease soon becomes rancid, and like lard, beef marrow, and other animal fats is rather injurious than beneficial to the growth of the hair. The day has long gone by when bears were kept alive in the shop of the hairdresser, and after a short display, slaughtered for their fat, which sold at high prices.

The oil obtained from the fat of the dugong (*Halicore Australis*) has, however, a justly ascribed medicinal reputation, from possessing similar therapeutic properties to cod-liver oil, and also for the treatment and cure of many other chronic diseases. Its efficiency in deafness is vouched for by Mr. Wall, of the Sydney Museum, who states that a man who had for twenty-six years been deprived of the power of hearing, applied to him for some of the oil, and after three applications his hearing was completely restored. A gentleman and lady of Sydney, however, whose desire to make some new discovery, exceeded their acquaintance with the characteristics of herbivorous cetaceæ, and who were unaware that the dugong is not endowed by nature with a covering of hair, applied the oil in the hope of promoting the growth of their hair. After repeated applications, they discovered that the oil possessed strong depilatory qualities, and gradually found their hair coming off.

The fat with which the hippopotamus is covered is considered delicious; it is used in South Africa for making puddings, instead of butter. When salted, it is called "zee koe spek" by the Dutch colonists, and is greatly prized, not only for the table, but for its reputed medicinal qualities. The Portuguese settlers on the East Coast are permitted by their priests to eat the flesh of this animal in Lent, passing it off as fish, from its amphibious habits, and hence their consciences are at ease.

In Siam, the coagulated blood of the rhinoceros (called "Luet nangul") is used as a medicine, and the hoofs of the deer, grated, for the curing of wounds. It has lately become fashionable on the Continent to prescribe blood as a restorative, and where the stomach will not receive it fresh, it is given in the dried form, and disguised, as many medicines are. Dried goat's blood is taxed pretty heavily on import into France—13'60 the hundredweight.

The only part of the elephant used in medicine was the

tusk, known by the name of ivory; however, it has much the same virtues as hartshorn, and may be prepared in the same manner. The filings, with us, are sold for making jelly. Some pretend it will cure the jaundice, kill worms, ease pain, strengthen the stomach, and abate the fits of an epilepsy.

France imports wolfs' teeth at a duty of one halfpenny the hundredweight; but what they are used for, unless for the *outré* ornaments now worn by ladies, I am at a loss to conceive, especially if they are to be had by the hundredweight.

Vipers are admitted duty free, and so are dried multi-pedes—probably centipedes. The marrow of deer and crabs' eyes are also in request. The latter have long gone out of demand with us, although they were formerly in some repute as antacids. They are, it is probably known, concretions found in the stomach of the cray fish (*Astacus fluviatilis*), before it casts its shells in July. At Astracan and other places, large quantities of this crustacean are bruised with mallets and allowed to putrify in heaps, after which the flesh is washed and the two concretions picked out; but chalk answers every purpose to which these stones were used. We have seen what crabs' eyes are, but what "crab butter," named in the French tariff, is, I can scarcely conceive, unless it be what we know as crab or carapa oil (*Carapa guianensis*).

The calcareous spongy plate which strengthens the back of the common cuttlefish (*Sepia officinalis*) was formerly much prized in medicine as an absorbent. Large supplies are received at Bombay from the Persian Gulf. I do not know whether it is still used for making tooth powder and pomade.

The thin opescula of some shells were formerly employed in *Materia Medica*, under the names of *Ringius aromaticus*, *Blatta byzantina*, etc. When burnt they exhale a strong smell like castoreum. The funes were considered a remedy for epilepsy. They were also used in decoction as laxatives. For all the imaginary virtues they possess the "hats" or covers of the periwinkle would be equally efficacious, and if there is still any demand for them in Egypt, Turkey, etc., those who indulge in this cockney dainty might save and sell the opesca.

The serrated snout or jaw of the swordfish (called in the Eastern Archipelago, the jupanang) is a very considerable article of trade for the China market, being used as medicine. Mr. Anderson (Mission to Sumatra in 1823) says he purchased at Delhi, for half a dollar, the largest he had ever seen, being five feet five inches in length, and armed on each side with teeth of an immense size, some two inches in length and fifty-six in number.

The "tollo" (*Squalus fernandinus*) a species of dogfish, is remarkable for two dorsal spines like those of the *Squalus acanthias*. These spines are triangular, bent at the point, as hard as ivory, two inches and a half long, and five lines broad. They are said to be an efficacious remedy for the toothache, by holding the point of one of them to the affected tooth. The hind claw of the bittern, which is remarkably long, was once supposed a grand preservative for the teeth, and was often set in silver, and used as a toothpick.

The double horn of the small black rhinoceros of Africa is prized for its medicinal reputation. The Indians and Chinese turn them into drinking cups, which are believed to sweat if poison be administered in them. Only one good cup can be carved from the end of each horn, but the parings and fragments are all preserved and used in medicine and for amulets; bits of the horn are bound with twine round ulcerated limbs by the African natives.

The tongue of the he goat was formerly given as a diuretic, and to open obstructions of the viscera. The blood, the suet, the dung, and the urine were also often used in medicine. From the chamois goat of Switzerland, the fat, the gall, and the stone sometimes found in the stomach, and called by some, "German bezoar," were used in medicine. The stone is generally about the size of a walnut, is of a blackish colour, and has a fine smell when broken. It was formerly in great request, because it was thought to have the virtues of oriental bezoar. The dose was from half a scruple to a scruple in some cordial water. Bezoar was formerly in the highest esteem as a cordial and *a. ex pharini*, and it has always borne an extravagant

price; but its virtues are only on a par with those of crabs' eyes, or any other absorbent powder. The Mhor antelope is much sought after by the Arabs on account of producing the bezoar so highly valued in Eastern medicine. They are commonly called in Morocco, "Baid-el-Mhorr," mhorr's eggs.

The most esteemed bezoar is the oriental brought from Borneo, and also obtained at some of the ports of the Persian Gulf. Varieties of this concretion are found in the stomach of the wild boar in India, in the gall-bladder of the ox, common in Nepal, and in the gall-bladder of the camel. This last, under the name of "Punee," is much prized as a yellow paint by the Hindoos. The Persian bezoar is said to be procured from the chamois or wild goat (*Capra gazella*). Cow bezoar will fetch 40s. or 50s. the pound in the Indian bazaars, while the bezoar stones from the Ghats will not fetch as many farthings the pound. According to Frezier, bezoars have been obtained from the South American wild gnanaoos. Gall-stones or the biliary calculi of the ox, consisting chiefly of the yellow colouring matter of the bile, are occasionally employed here by artists for painting, but formerly the gall or bile was much used in medicine; now the gastric juice is chiefly employed in preparing pepsine or as rennet in coagulating milk.

Castoreum, from its fetid and disagreeable odour, was once much relied on as an antispasmodic and stimulant. It is extensively used by the North American Indians in the manufacture of a perfumed medicine or perfume for enticing the lynx to enter into the snaring cabins.

Kyraceum, an excretion of the Cape mountain badger, (*Hyrax Capensis*), had at one time a fictitious reputation as an antispasmodic.

Discarded from the service of the physician, a few mollusca have found a resting-place in the *Materia Medica* of the common people, who inherit to the full their wise ancestors' faith in their virtues, which are enhanced by some superstitions, traditions, and observances. Slugs and snails were anciently, and in some parts are to this day, a popular remedy in consumptive complaints. They are sometimes made into a mucilaginous broth, sometimes swallowed in a raw state, and sometimes the shell is pricked through with a large pin, to enable the patient to suck the oozing liquor.

One may see considerable quantities of *Helix pomatia* and *H. aspersa* in Covent Garden Market, which are sold for this purpose; and still greater quantities are sold in all the large Continental cities. In the Isle of Bourbon, the *Navicula elliptica* is commonly used to make a soup for the sick; and in the same and adjacent islands the animal of *Melania amarula*, which is very bitter, passes for an excellent remedy in the dropsy. The *pedra de las ojos*, which are merely worn fragments of shells, are considered in some parts of South America as the most extraordinary production of their coasts, being, in the philosophy of the natives, both a stone and an animal!

These fragments are from one to four lines in diameter, with a plain and convex surface, and when excited by lemon-juice move in proportion as the carbonic acid is disengaged. Placed in the eye, the pretended animal turns on itself, and expels every other foreign substance that may have been accidentally introduced. At the salt works of Araya, and at the village of Maniquares, they were offered to Humboldt and his fellow-traveller by hundreds, and the natives were not only earnest to show them the experiment of the lemon-juice, but wished to put sand into their eyes that they might themselves try the efficacy of the remedy.

The same custom and superstition is said to prevail in Guernsey, and in the olden time did prevail in the Highlands of Scotland. The Rev. John Frazer, writing in the year 1702, says:—"Snail-stones are much commended for the eyes; and I'm confident their cooling virtue is prevalent against pains bred by a hot cause; their origin is thus, some excrementitious parts avoided by these creatures, condensed by the circumjacent air, and turned to a round figure by the frequent turning, but this is observable that some of them, especially snail-stones, have the exact figure of the snail."

A correspondent of the *Scientific American*, New York, writing recently on the uses of snails, gravely asserts that "Cataract on the eye is cured by applying a drop of clean

water taken from the live snail, by piercing what might be termed the tail of the snail shell with a pin. This application has the effect of eating off the substance that grows over the sight of the eye. A relative of mine was thus cured; by applying this water two or three times a day, say two or three months, the sight was restored and remained good. This was prescribed by a physician as a last resort."

Misadventures of a curious instance often occur from ignorance, as in the case of what came before a parish surgeon, who, in the course of his rounds, said:—"Well, my good woman, how is your husband to-day? Better, no doubt?" "Oh, yes, surely," said the woman, "he is as well as ever, and gone to the field." "I thought so," continued the doctor. "The leeches have cured him. Wonderful effect they have. You got the leeches, of course?" "Oh, yes, they did him a great deal of good, tho' he could not take them all." "Take them all! Why, my good woman how did you apply them?" "Oh, I managed nicely," said the wife, looking quite contented with herself. "For variety's sake I boiled one half, and made a fry of the other. The first he got down very well, but the second made him sick. But what he took was quite enough," continued she, seeing some horror in the doctor's countenance, "for he was better the next morning, and to-day he is quite well." "Umph!" said the doctor, with a sapient shake of the head: "If they have cured him that is sufficient, but they would have been better applied externally." The woman replied that she would do so the next time; and no doubt, if fate ever throws a score of unfortunate leeches into her power again, she will make a poultice of them.

In conclusion, I may add that we do not resort here to assafetida as a food seasoning,* as the Persians do, nor to the scarce and expensive ambergris used as a flavouring in the East, nor do we strew arsenic like salt on our bread and butter, and eat it to preserve a youthful and blooming appearance, as the miners and peasants of Upper Austria are said to do. But the components of some of the food zests which we use as sauces and condiments are perfect mysteries. There is a sauce described in the "Almanac des Gourmands," "with which you could eat your own father." This would be a rather dangerous sauce for natives to use, who are destitute of those civilized appliances, knives and forks, since they would be very likely to eat their own fingers with the sauce.

NAMES OF VARIOUS SORTS OF TEA.—The designations by which the various sorts of tea are known in the market, and the meanings attached to them, may be worth notice. Congo is a corruption of Kangfu, signifying labour, and the Moning Congo advertised by tea dealers is simply a sort of the same tea grown at Wuning, a district and city, the name of which, being interpreted, means "military rest." Souchong signifies "little sprouts;" Pekoe, "white down;" Bohea is derived from the Wukce Hills on which it is produced; Oolong means "black dragon;" Hungmoey, "red plum;" Campoi, "selected firing;" Hyson, "fair spring;" Twankay, taken from Tunkee, or "Beacon Brook;" what is called "Young Hyson" is in Chinese termed Yutseen, or "Before the rains;" Gunpowder the Chinese call Yuen Choo, or "Round Pearls." There are a number of other names given to tea, but these will be recognised as those most familiar. What are termed "chop names," are the fancy designations given by Chinese dealers to their teas, after having been made up into parcels of many hundred chests each. The tea is grown in the first instance by small farmers, who carry the produce of their respective gardens to the nearest depot, where it is collected by brokers, and by them made up into chests for delivery to the dealers, who convey it for sale to the foreign mart. These dealers are very particular in the selection of high-sounding and felicitous titles for their several parcels or chops, and very often a particular chop acquires such a fame as to be eagerly sought after for each successive season.

* Either Mr. Simmonds or Dr. Lankester is wrong on this point. The latter, in his "Lectures on Food," tells us that Assafetida is sometimes rubbed over the plate, at some of the London cook-shops, when the customer wants his chop rather high flavoured.—Ed. C. and D.

AT THE EXHIBITION.

IV.

THE FOOD DEPARTMENT.

AFTER all the special feature of this year's exhibition is unquestionably the food display. We include in this remark the valuable and popular lectures on cookery, which have been delivered by Mr. Buckmaster in the annexe. That these have been listened to mainly by just that class of people who least need his instruction is not an overwhelming objection to the enterprise. There is nothing so much needed in British social economy as a revolution in the ideas and system of cooking, especially among the poor. The ignorance, waste, and prejudice, which are effective bars to comfortable but cheap dinners in this country among the lower classes, are real enemies to social amelioration. We are not now referring to the very poorest classes whom absolute poverty unhappily denies almost necessary sustenance, but to those classes a little higher in the scale, who, with a little better acquaintance with the rudiments of the cookery art, might keep house far more luxuriously and even more economically than they do at present. And a little advance in that direction would have the tendency of adding to the cheerfulness, sobriety, and general well-being of our working classes. The ridiculous prejudice, for example, which undoubtedly exists against the use of Australian meat, is surely not unconquerable; the apparent preference for any rather than a fish diet; the ignorance about the value of soup; and general shortcomings in comfort and cleanliness are moral as well as physical drawbacks to our national progress; and we say that social philanthropists could hardly set themselves a more practically useful task than to battle with such a prejudice as this. This sort of instruction, it is evident, must permeate from the more enlightened classes to those beneath them if it is to be spread at all, and it is a matter of the utmost importance that a nation like ours whose climate, as well as the hereditary energy of its inhabitants, render a more abundant supply of animal food necessary than is the case under gentler skies, should be well instructed in the most economical methods of preparing it. On this ground, therefore, we consider the School of Cookery, which has been initiated at South Kensington, is an experiment for which the nation may well be thankful to Her Majesty's Commissioners.

It would have been an infinitely difficult task to have made a really comprehensive collection of foods, but it would have been hardly possible to arrange any collection more unsystematically than has been done at the Exhibition. There is absolutely no design at all. A collection of glass cases, with anybody's specialities who chose to send them, is not instructive, while the elaborately compiled placards which indicate diagrammatically the chemical composition of various foods are absolutely worthless to the general public, and could only be of value to the student in a book. Maccaroni, soda-water, cigars, mustard, chocolate, bon-bons, and sugared almonds are the most interesting and prominent features of the Food Collection; a sure proof that Her Majesty's Commissioners have made no serious attempt to afford education of any value. They had a big shop, and it was required to stock it. The bill of fare reminds one of the full dress costume of the South Sea Islanders when they were first persuaded to adopt the luxury of habiliments—Wellington boots and a cocked hat.

Of all things we should have been glad to see a really thorough exhibition of the various processes, more or less successful, for preserving food; a scheme which surely it would not have been vastly difficult to carry out. In its place what earthly purpose can a heap of tins of Australian mutton serve?

Messrs. Cricuolo, Kay, and Co., an Anglo-Italian firm, deserve the first place for their really interesting display of the maccaroni manufacture. This maccaroni is made from Italian dark hard wheat, which is richer in gluten than that which is commonly used for bread-making in this country. The name given to the prepared flour of this grain is semolina. To make maccaroni the semolina is mixed with a little hot water, after which a large marble wheel is made, by the aid of machinery, to rotate upon it for about an hour, or until

the whole has acquired a suitable consistence. The paste is then transferred to a large iron cylinder, with perforations at the bottom, through which it is forced by a screw piston worked by steam. In short, the character or shape of these perforations determine at once the *form* of the macaroni, which is afterwards either hung upon bamboo canes or otherwise placed on wire sieves to dry.

By the use of steam machinery in the manufacture of Anglo-Italian macaroni the objectionable manipulation practised at Naples is avoided, and the result is a paste which, for freshness and sweetness, leaves nothing to be desired. This process is exhibited daily by Neapolitan workmen, and we hope will have the effect of bringing into wider use the wholesome and delicious foods which may be made from macaroni.

Messrs. J. and J. Colman occupy a good space, and exhibit the manufacture of pure mustard. The brown and white seeds are being acted upon, and the process, though not particularly complicated, is sufficiently attractive.

Messrs. Hill and Jones and Frederic Allen have some machinery at work manufacturing sugared almonds and other specimens of sweets. The former are prepared by pouring strong syrup over them in a revolving evaporating dish, until they are covered with a sufficient coating of sugar.

Upstairs, among the more prominent exhibits, we may mention some magnificent wedding cakes, exhibited by various artistic confectioners. We presume, however, that our readers are superior to such requirements, and therefore pass to those matters more nearly concerning them. Messrs. Peek, Frean, and Co., and Huntley and Palmer make very handsome displays of biscuits. These eminent firms ably maintain English supremacy in biscuit manufacture. We have not particulars of the first-mentioned firm, but any one who sees their immense factory on the way to the Crystal Palace can form an idea of the extent of their trade. Messrs. Huntley and Palmer employ 2,500 people at Reading. We may especially call the attention of chemists to the prettily put up little tins of biscuits which they supply for the counter. Their meat wafers and sweet wheaten biscuits are especially adapted to chemists' sale.

Messrs. Goodall, Backhouse, and Co., of Leeds, are prominently represented with their popular Yorkshire Relish and other dietetic preparations. We notice, also, that Mr. Isaac Garrett of Brighton, having escaped from the tender mercies of Miss Christiana Edmunds, is regaling the inhabitants of Brighton with a sixpenny Brighton Relish.

Among a multitude of other goods we should like to specify the unfermented bread and other preparations of Mr. Henry Dodson of Blackman-street, Southwark. Specimens of this unfermented bread have been kept in the South Kensington Museum for three years, without losing its sweetness or showing the slightest mould. Unfermented biscuits for children's food, and unfermented biscuit powder for the same purpose, are also prepared by this firm.

Mr. Halford, of St. Martin's-lane, has lately introduced an excellent curried fowl in tins. The curry is of the richest flavour, and for exportation, as well as for home consumption, we should judge this article would be extremely popular.

Two handsome shows of that very interesting branch of practical chemistry, fruit essences, and such like preparations, are exhibited by Messrs. W. J. Bush and Co., of London, and Mr. John Mackay, of Edinburgh.

There are a good many French exhibitors in this department. They are especially strong in chocolates. Such eminent firms as the Compagnie Française, Messrs. Louit Frères, of Bordeaux, and others, make exceptionally handsome displays. Messrs. Fry and Sons, of Bristol, make the most powerful display of cocoa, with botanic and other illustrations of its manufacture. Schweitzer's cocoatina is also very prominent, Dottridge's cocavra, and other preparations.

Messrs. George Neighbour and Son's bee-hives and honey-combs attract much attention. Norway and Sweden are well represented, both for food and drink; but there does not seem to have been any serious intention of making a fair European collection of food peculiarities, though that would have been of no small interest.

Among other articles prepared by chemists may be named Clarke's Woburn Sauce, Cooper's Effervescing Lozenges, various condiments from Mr. Hughes, of Manchester, Mellin's Concentrated Extract of Milk, and Messrs. T. and H. Smith

and Co.'s handsome display of their specialities, gingerine, &c.

Taken in all, it may be fairly said that the collection well illustrates the fringe of our ordinary food, and many of the exhibits are highly creditable to individuals; but the Commissioners, we think, have hardly taken the pains which might fairly have been expected from them to arrange, systematize, and, if possible, develop the subject in its fulness.

Medical Gleanings.

SOMETHING less than £28,000 seems to be the result of the Metropolitan Hospital Sunday, a figure which everybody seems to think needs some explanation. That Liverpool, with a population of half a million, and without a tenth part of the puffing which London could command, should raise £10,000, and London with six times the number of inhabitants, and under the special patronage of the Royal Family, with the aid of both the Archbishops, and with nearly all the nobility and a plethora of wealth, should have failed even to treble that figure is a fact which may be capable of many methods of explanation, but is to most people a surprise nevertheless. An intelligent lay journal, the *Spectator*, ventured to prophesy before the event a result of £80,000—a guess certainly extravagant, but indicating what it was thought might be the result of a universal appeal to the religious world of London. The medical journals pretend to be fairly satisfied with the result as a first attempt, and they endeavour to magnify the difficulties and obstacles which have occurred in working out the scheme. That some sort of organization had to be constructed is of course evident enough, but we fail to see what special difficulties lay in the way in London which have not existed in other towns, and we have never heard of such before. The truth is very probably that the public has a sort of impression, not very logical it is true, but yet not altogether unfounded, that the hospitals are less charitable institutions than immense training schools and afterwards advertisement aids for the medical profession. And the latter has so persistently magnified its office and vaunted its claims that there is perhaps a growing tinge of disgust in the public mind which has in some degree affected the contributions of Hospital Sunday.

The medical evidence in the Tichborne trial was not reported in the daily papers with that accuracy for which they are generally distinguished. Mr. Barnard Holt referred, it may be supposed, to "venesection" when describing the bleeding from a vein. This was reported as "vivisection." The *Lancet* remarks that at the former trial one of the medical witnesses had occasion to speak of the *commissure* of the eyelids, a term which the ingenious reporter twisted into *commissur*. It gives another instance, still more absurd, of a witness giving evidence before a coroner that the deceased had suffered from *traumatic delirium*. He read next morning in the paper that "Mr. So-and-so, the surgeon in attendance, gave evidence that the deceased, after his injury, had suffered from *aromatic delirium*."

Referring to Sir Roger naturally reminds us of the Shah. "These be your gods, oh Israel!" True to its custom of obsequious respect to crowned heads, the *Lancet* inserts an article on the Shah and the London hospitals, apparently for the simple object of introducing some of the ordinary delicious phrases about the "gracious acts" of "His Majesty," and describing "His Majesty" as "intelligent and enlightened." It issued that two of the Shah's suite were shown through Hanwell Asylum, and having visited all the wards and the grounds, expressed their regret at not having seen the patients. Of course the anecdote is untrue, but it is compiled to illustrate the beautiful order and excellence of the arrangements of that establishment.

The progress of the ladies into medical territory is alternately checked and encouraged, but *e pur si muove*. At Bristol a resident house surgeon to the Children's Hospital having been advertised for, a Miss Eliza Walker, M.D., who holds diplomas from the Universities of Zurich for proficiency in medicine, surgery, and obstetrics, came forward as a candidate, to the no small indignation of her male rivals, and of the

existing medical officers of the hospital, who threatened to resign in a body if Miss Walker were appointed by the committee. The subject was thereupon wisely referred to the subscribers generally, and a meeting was convened for Wednesday for its discussion and settlement. A motion proposed by the Rev. Prebendary Percival, to the effect that appointments to the hospital should be open to women, was accordingly carried by 72 votes against 17. We learn that the existing staff of the institution have promised to reconsider their determination to "strike;" and that the institution—which is a very valuable one—is not likely to suffer from the appointment of Miss Walker, which may now be regarded as certain.

At Edinburgh, however, where the chief battles have been fought, the judges in the Court of Session have decided by a majority of seven against five against Miss Jex Blake and her companions. The case came before them as an appeal from the senators against the decision of Lord Ordinary Gifford, who had ordered the university to give the ladies opportunities of continuing their studies. The ladies can now if they choose appeal to the House of Lords, or, as the *Lancet*, we think, sensibly suggests, they may employ their money better by establishing a college of their own, where they might be prepared especially for those branches of the profession for which they are most suitable.

The conservative prejudices of that section of the medical profession which believes in the guinea, the whole guinea, and nothing but the guinea, must have been somewhat shocked at the unexpected audacity of somebody who has recently brought out a penny weekly journal under the title of *Medical Notes and Queries*. The idea involved in this publication is to enable the public to get its medical advice for a penny a week. The "large staff of eminent medical authorities," which has been engaged at a reckless expense to conduct this philanthropic undertaking, seems to have graduated through the medical department of the *Family Herald*. The medical advice is much of the same calibre; but then perhaps the same might be said of some specimens of the guinea article.

MEDICAL ASPECT OF MISERY.

A VERY interesting lecture on Hypochondriasis was delivered at St. Mary's Hospital, on June 25th, by Dr. Thomas King Chambers. He treated mental misery as a true disease; a very terrible disease, and one which but few persons are acquainted with. A disease which is really a pathological condition, and not *caused*, though sometimes excited by disappointments, loss of wealth, loss of friends, relatives, or position. Shrewd observation, the lecturer remarked, will show that these are mere pretexts offered in explanation of a misery. Thanks to the All-merciful, all these things are borne daily by millions with cheerfulness: "Some natural tears they drop, but wipe them soon;" but involuntarily protracted sorrow is always a pathological state. True hypochondriacs are quite different from persons with disordered intellects. As a rule, their understanding is very clear. "The patients who come to us are often shrewd men of business, pushing inventors, judicious speculators, so long as the disease does not interfere with their usefulness. If skaters, they are distinguished by cutting the most elaborately graceful figures; if sportsmen, they are dead shots. I select these instances purposely, because sedentary and scholarly habits have been popularly associated with the disease; but I think the association arises from the accident that the higher intellects are naturally attracted to literature. I have not found hypochondriasis oftener preceded by excess of brain-work or of desk-work, than by athletic training."

The most striking features in this lecture were the use made of the works of two of the greatest English geniuses, Bunyan and Shakespeare, in illustration of the author's remarks, and his testimony as a medical expert to the minute accuracy of the imaginative creations which have been left behind by those authors. "The most vivid picture extant of an hypochondriac is contained in the autobiography entitled, 'Grace Abounding Unto the Chief

Sinners.' It is a history of the feelings of 'God's poor servant, John Bunyan,' as he styles himself. The plain tale of his inward misery, from boyhood up to his imprisonment in Bodford jail, explains many passages in his larger work, 'The Pilgrim's Progress,' which do not accord with the psychical experiences of healthy Christians. I refer especially to the Slough of Despond, the Man in the Iron Cage, the description of Doubting Castle, Mrs. Diffidence, and Giant Despair. He says, in words which naturally break into poetic rhythm, 'I behold the condition of the dog and toad, and counted the estate of everything that God had made far better than this dreadful state of mine.' No healthy man ever felt like that; but to the hypochondriac, alone in creation, no past, no future, can be so bad as the present—*hora novissima, tempora pessima*.

"A vague alarm of impending evil very frequently accompanies the misery, and sometimes (as in Bunyan's case), it takes the concrete form of a dread of hell, and thoughts about devils. In dreams they assume a definite shape, and seem trying to draw the sufferer along with them. Sometimes there is a dread of death; but I think it is exceptional, and that when you find such a fear in a diseased degree, the case is likely to turn out one of ordinary insanity, delusions of the intellect supervening. More commonly death is looked forward to as a relief from misery, and would be considered not unwelcome. In such cases patients will sometimes commit suicide, not like madmen, in a sudden whim, or uncontrollable impulse, but in a deliberate manner. Indubitably, suicide would be much more common, but for the reason which Hamlet, the prince of hypochondriacs, rightly assigns. 'The dread of something after death,' acts as a powerful safeguard. I wish Shakespeare could have truthfully written, 'The hope of something after death,' which is a much better reason for avoiding suicide; but such a feeling is inconsistent with the character he is painting. While the fit is on, the only motive influence over the soul is fear, and that, I believe, preserves many a one from self-destruction. It is a stupid and a blasphemous act to hurl back the Creator's best gift in His face, and it well deserves the disgrace and punishment which men attach to it. But irrational it is not, for the hypochondriac may with reason argue that he had rather be or do anything than 'grunt and sweat under this weary life.' Nay, more, if a man be so credulous as to think the grave the end of his being, and can imagine 'this sensible, warm motion, to become a kneaded clod,' it is difficult to answer his arguments for extinguishing himself. Suicide is a cure for hypochondriasis, as a cure the hypochondriac seeks it, with a full knowledge of the nature and bearings of the action, and therefore he should be held entirely responsible. To call the deed one of 'temporary insanity,' where there is no evidence of delusion, is pure effeminacy."

The lecturer brought out very acutely some striking proofs of the evidently personal acquaintance with the disease which Bunyan possessed. A temporary loss of muscular power is a common symptom in hypochondriasis. In the "Pilgrim's Progress," Bunyan makes Giant Despair lose the use of his hands at a moment most lucky for the heroes of the allegory. A common-place artist too in depicting the workings of a soul in misery would have almost certainly presented a background of mist and lowering clouds. But this would not have been true, for in hypochondriasis a high state of the barometer is frequently an aggravating condition. So Bunyan says, "We sometimes, in sunshiny weather, fell into fits;" while Hamlet, pointing from his window to a starry sky, is made to describe his disease thus:—

"I have of lato (but wherefore I know not), lost all my mirth, foregone all custom of exercises: and indeed, it goes so heavily with my disposition, that this goodly frame, the earth, seems to me a sterile promontory; this most excellent canopy, the air, look you—this brave overhanging firmament—this majestical roof fretted with golden fire, why it appears no other thing to me than a foul and pestilent congregation of vapours."

As to the treatment of hypochondriacs Dr. Chambers divides his remarks into two parts, *physical* and *moral*. He recommends a nutritious diet, plenty of rest, very mild aperients if constipation occurs, and except in special cases, when there is an actual deficiency of sleep, the avoidance of opiates and alcohol.

As to moral treatment Bunyan is an excellent guide. When Christian and Hopeful were in the dungeon, in doleful ease indeed, the former suddenly bethought him that he had a key in his bosom called "Promise," with which he picked one after another the locks that lay between them and liberty. "And so they went up to the mountains, to behold the gardens, and orchards, and fountains of water, where also they drank and washed themselves, and did eat freely of the vineyards." But poor Bunyan was not altogether fortunate in the comforters he met with. He tells us, in "Grace Abounding," "I took an opportunity to break my mind to an ancient Christian, and told him all my case. I told him also that I was afraid I had sinned the sin against the Holy Ghost; and he told me he thought so too." It is all very well to agree with a maniac's whims, but a hypochondriac may claim a right to be reasoned with, and John Bunyan was badly used.

Twelve years in Bedford jail, however, though it was a filthy and noisome den, was no doubt the means of curing poor Bunyan. He had plenty of rest, was well fed by admiring friends, and was occupied nearly all the time in what was really his true vocation—the production of that marvellous life-drama which Macaulay describes as one of the only two really original works of imagination produced in England during the sixteenth century, the other being *Paradise Lost*.

THE CIVIL SERVICE SUPPLY ASSOCIATION.

IN the *Cornhill Magazine* for July, "one of the original members," "a post-office man," tells the story of the Civil Service Supply Association. Our readers will know how to value the writer's enthusiasm when he speaks of "the high sense of honour which pervades the Government Service," illustrated, this gentleman seems to think, stained as it appears to us, by the conduct of these Civil Service Stores. We give the story, however, as it appears:—

"The Civil Service Supply Association is the oldest co-operative society in the service, and it has been the model upon which all other London co-operative societies have been formed. Although barely eight years old, and in its commencement most humble, it is now selling goods at the enormous rate of £780,000 a year, and is fast revolutionizing the retail trade, not only of London, but of the whole country. Surely the story of its rise and progress is worth the telling.

"The Association originated in the Post-Office. The winter of 1864-5 (like many other winters, and for that matter summers too) found a good many of us Post-Office men engaged in a rather hard struggle to make both ends meet. Some of us had ventured to ask for higher pay, and had been favoured with the usual sympathetic but depressing reply, that it was regretted that the circumstances of the case would not justify any addition to our salaries, &c., &c.

"Feeling, as we did, sharply, the general rise in the cost of living, especially in the price of all articles of clothing consequent on the American War, one or two of us had already bethought ourselves of co-operation as a means of lessening our difficulties. I, for one, being a Liberal in politics (for there are some few Liberals in the Civil Service) had watched with interest the doings of the Rochdale Pioneers, but could not at all see how to apply their experience to our own case.

"One day, however, two office friends came to me—it was, as I well remember, a foggy, gloomy day in November, enough to make one more than usually despondent—and declared once for all, that they must either have more to spend or manage to spend less. They had given up all hope of more pay, and as a last resource they proposed that we should try to spend less by means of co-operation. Their idea was that we should induce a number of Post-Office men to procure their supplies of coal from some one coal-merchant, in the expectation that by the largeness of the united order, and by the payment of ready money, we should obtain a considerable abatement in price. Talking the matter over, we resolved to try buying or hiring or this plan, but we had

we decided to make a beginning with tea. That very afternoon one of us on his way home called at a celebrated wholesale house (I even now withhold names for fear of the wrath of retail traders), and learnt that by buying half a chest at a time, and paying for it in ready money, we should save from 6d. to 9d. a lb. We therefore invited a few other office friends to join us. Each wrote down on a list the quantity he would take, at the same time handing in the money to pay for it. Some of the most cautious limited themselves to a single pound; others boldly co-operated to the extent of two pounds, a few rash men pledged themselves to three pounds, and we promoters had to take enough to make up the full order. The tea was bought, and after office hours we weighed and divided it amongst the purchasers. It proved to be excellent, and soon a demand arose for more. Other men in the office, who had heard of our successful venture, wished to join, and this time there was no need for us promoters to take more than we wanted. Some one now luckily discovered an empty cupboard in the office, and here we locked up our second half chest of tea till we could divide it amongst ourselves.

"This cupboard was the original store of the Civil Service Supply Association.

"More tea being very shortly needed, we prepared for a third purchase, and now so many joined us that we had to buy a whole chest. It was no joke to make up 100 lbs. of tea into parcels of two or three pounds a piece, but we were lucky enough to find one who, like old Trapbois, was willing, nay eager, to undertake the task for a consideration. This was a funny little fellow, since dead, whose duties were very humble, and salary yet more so. Though nominally a clerk, he was regarded as a kind of cross between a clerk and a messenger. Poor fellow! while his small salary had no prospect of increase, his large family increased but too fast. His remuneration for this piece of extra service was the surplus tea (some three or four pounds) contained in each chest, beyond the nominal amount.

"Our success in tea led us on to buy coffee; and each time that our list went round the office more and more men asked leave to join. Our poor cupboard soon became too small for our ever increasing stocks, to which, moreover, we thought of adding sugar and other groceries. With no small anxiety we found ourselves constrained to hire a store-room outside the building, a step that we felt could not be safely taken unless we formed ourselves into a regular association. Hence arose the Post-Office Supply Association, which, being afterwards extended to the whole of the Civil Service, in the end took the title of the 'Civil Service Supply Association.' Our first impulse was to call ourselves the 'Post-Office Co-operative Society;' but even the boldest of us shrank from so hazardous an avowal—so strong only eight short years ago was the prejudice against co-operation, regarded as it was by many as identical with socialism. In a word, we took the thing but not the name.

"A small committee of Post-Office men was formed; and after much anxious deliberation they resolved, and a daring step they thought it, to take a little room at a rent of twelve shillings a week, in the perhaps not over-fashionable neighbourhood of Bridgewater-square, Barbican.

"The following is an extract from the original prospectus of the Association, now a very scarce and highly prized document:—

"This Association has been formed for the purpose of supplying officers of the Post Office and their friends with articles of all kinds, both for domestic consumption and general use, at the lowest wholesale prices.

"The advantages of the scheme are obvious, but its full benefits can best be secured by a general combination in support of it on the part of the officers of the various departments.

"It is intended that the articles mentioned in the accompanying price list shall be purchased by the committee and distributed amongst the members. Arrangements for the supply of all other articles have been entered into with the firms named in the accompanying list."

"Even when the Association was fairly started, and carrying on its business on its own premises, the committee did not venture to order any goods without ascertaining from the members what quantity of each article was needed. The business soon outgrew the room in Bridgewater-square, and the committee, in a fit of extraordinary daring, engaged for a printer the upper floor of a small house in Bath-street, on the ground floor of which the worthy typographer carried on his business. The committee, however, having therein the third

long since been pulled down to make way for the new Post-office buildings, but those who went there to co-operate in those early days must have a vivid recollection of the narrow staircase, where one was elbowed by printers' devils, and of the dark little rooms crowded with purchasers. Here, however, we stayed but a short time, the business growing so rapidly that within a very few months the committee had again to seek larger premises, and this time, after making temporary use of some premises in Wood-street, they took a really desperate leap. After many a hunt for a house big enough to meet any probable increase of business, two of our committee discovered a suitable one in Monkwell-street, a very narrow out of the way thoroughfare near Cripplegate Church, and filled with confidence by past success, they took it on their own responsibility at a rent of £100 a year. Great was the anxiety of the remainder of the committee at this bold proceeding, though the intention was to sub-let the upper floor of the house to some firm that should undertake to sell goods to the members at wholesale prices. Tenants were found in certain hosiers, relatives of one of the Post-office clerks, and the arrangement worked fairly well for a time, but as soon as it could safely do so, the committee regained possession of the floor, and undertook the sale of hosiery on its own account.

"From this point the narrative, from being one of small beginnings, becomes the story of a large and rapidly increasing business.

"First, the committee obtained part of an adjoining house, then the whole of it, and after a time the other adjoining house, and part of a house on the opposite side of the street. A fresh house was taken in Villiers-street, and subsequently a larger one in Long Aere, for the convenience of West End members. Before this time, a great pressure had been put upon the committee to open a West End store; but they would not then make the venture, and this, amongst other causes, led to the establishment of this sister Association, entitled 'The Civil Service Co-operative Society,' which has its stores in the Haymarket.

"The City business of the Association will, during the present month, be removed to very large and handsome premises, near the Herald's College, in Queen Victoria-street, now building expressly for its use.

"I have not mentioned the extreme difficulty which the committee experienced in inducing wholesale houses to deal with the Association, especially when its doings found their way into print. Though ready money was always offered, together with good orders, most of the wholesale houses hung back, declaring that unless the orders were very large indeed, they should not feel warranted in encountering the fierce opposition of the retail traders. And now let us mark the consequences of this opposition. Very large orders being out of the question, so long as custom proceeded only from a limited number of persons, each of moderate income, and Civil servants generally not yet joining in the movement, the co-operators were obliged, in self-defence, to extend admission to quasi-membership beyond Civil Service bounds. Even this extraneous aid barely carried them through the struggle; the retailers having, over and over again, succeeded in deterring particular firms from supplying them with goods. These quasi-members, however, called by us 'subscribers,' were by no means admitted to any share in management, which indeed during the first year was strictly confined to a Post-office committee, though afterwards extended to representatives from the Civil Services generally. The exclusion of the general public from authority we have regarded as one of the chief causes of our success. Subscribers, however, by an annual payment of 5s., obtain all the commercial advantages enjoyed by full members, except that their purchases are not delivered carriage-free. The full members become so by taking each a £1 share, of which, however, only 10s. has been called up. No one is allowed to hold more than a single share, nor are shares saleable or transferable in any way. On a member's death, his share is cancelled, and his deposit returned to his family. Until about a month ago any Civil Servant not below the rank of a clerk was eligible as a shareholder; but actual admission to the shareholding body required the approval of the committee. The number of shareholders, which has largely increased during the last three or four years, is now about 4,200.

"By the rules of the Association, any profits which may be made are to be spent in reducing the prices at which the

goods are sold. Even in the outset, prices were not fixed higher than is deemed needful to cover the working expenses, which now amount to only 6 or 7 per cent. on the wholesale purchase price; but, of course, the committee in its calculations has always taken good care to be well on the safe side. It is, perhaps, owing to extreme prudence in this matter, though, probably, still more to the need felt for a considerable working capital, that the Association has gradually accumulated the sum of about £75,000. The very magnitude of this capital has, however, proved a source of danger; for, without question, some persons have at different times obtained shares simply in the hope of breaking up the Association and getting a share of the spoil. Happily these unjustifiable attempts have hitherto always met with signal defeat, an overwhelming majority of the shareholders being determined to maintain the Association in honest and faithful accordance with the principles upon which it was founded.

"At the last half-yearly meeting of the Association in April, a proposal was brought forward, to limit the shareholding body to the present number. After a prolonged and animated discussion, it was resolved to submit the proposal to the vote of the whole of the shareholders, which was taken by ballot. Out of the 4,200 shareholders only 1,200 voted, but of those who did vote there was a majority of 400 in favour of the proposal, which was accordingly carried. Of course, could the accumulated profits be divided, this limitation of the number of shareholders would give the shares a considerable value. Legal opinion, however, is entirely against the possibility of thus disposing of any past accumulations, which by the rules can only be spent in reducing the prices of articles sold. It is expected that those who have thus obtained a limitation of the shareholding body, will now endeavour to carry such an alteration in the rules as will allow future profits to be devoted to a Widow and Orphan Fund, or to some such purpose. Any change in the constitution of the Association, having for its object the benefit of the civil servants as distinguished from their friends the subscribers, is viewed with much anxiety and disfavour by most of the earlier members of the society.

"The number of subscribers is now limited to 15,000. Whilst this number furnishes a clientele sufficiently strong to enable wholesale houses to disregard the retail traders, some check is placed upon the enlargement of the business, and consequent increase in the labour and responsibility of management.

"The extraordinary rapidity with which the business has grown, will best be seen from the following table showing the amount of sales at the stores during each year of the Association's existence, viz. :—

Date.	Amount of Sales.	Date.	Amount of Sales.
1865	£5,000	1869	£245,000
1866	21,000	1870	447,000
1867	83,000	1871	646,000
1868	218,000	1872	723,000

"During the half year ended March 31st last, the sales reached 392,000*l.*, being, therefore, at the rate of £784,000 a year, viz. : for grocery and wine, £410,000; for hosiery and clothing, £192,000; and for fancy goods, stationery, &c., £182,000. At the present time about 8,100 lbs. of tea and about 15 tons of sugar are sold weekly.

"The articles sold at the stores consist principally of groceries, cigars, and tobacco, wine and spirits, hosiery and drapery, stationery, books and music, watches and jewellery. But most of these articles, and, indeed, almost every other article of ordinary demand, can also be obtained by members and subscribers at low rates, though, of course, only for ready money, at all such warehouses and shops as have arrangements with us. The latest Quarterly Price List, which, from a single small sheet has grown to be a book of more than 200 pages, shows that the covenanting firms are not less than about 250, while the reduction promised in prices ranges from 5 to 25 per cent. It is believed that this additional business amounts, at least, to £800,000, and not improbably to as much as £1,000,000 a year. Contrary to what might be expected, this part of the system works satisfactorily; for, though purchasers are invited to complain to the committee if they ever have reason to suppose they do not obtain the full discount promised, few complaints are received. These, however, are all thoroughly examined, and whenever they prove to be well founded, the offending firm is struck off the list. Moreover, members soon learn

from each other at what shops they are civilly and fairly treated, and act accordingly; so that some of the firms which have been connected with the Association from its early days, having gradually acquired a high reputation amongst us, are now doing a very large business with our members.

"The members have the advantage of a tailoring department, carried on in Bedford-street, Strand, which, however, was for a long time a source of great trouble to the committee. Much difficulty was experienced in getting, and still more in keeping, good workmen, who left in a mysterious manner; and the work was frequently so badly done as to convince the committee that the workmen were being bribed to spoil the clothes entrusted to them, and thus to entail loss upon the Association. After a while, and by the exercise of great perseverance, these difficulties have all been overcome and the tailoring department promises to be a great success.

"Notwithstanding that the retail price of the articles sold at the stores is on the average some 6 or 7 per cent. above the wholesale price, it happens every now and then that, owing to a rise in the market price between the publication of the quarterly price lists, the market price becomes higher than the retail price at the stores. Unless the article is one of large general consumption, such as tea, the committee adheres to its retail price until the issue of the next Quarterly Price List. This sometimes leads to an attempt by retail traders to buy up—of course through some subscriber willing to play false to the Association—all the stock in hand. During the Franco-German war an attempt was thus made to buy up all the Champagne, and not many months ago a rapid rise in the market price of white pepper and of anchovies led to similar attempts with these articles. Large orders are never now executed without such inquiry as satisfies the committee of their being made in good faith.

"The Association directly employs about 400 people, and pays upwards of £48,000 a year in salaries and wages. The stores in Long Acre stand at an annual rental of £600, whilst for the new stores in Queen Victoria-street the mere ground rent is no less than £1,400. The premises themselves we are about to purchase for £15,000, while a further rent of £200 a year is paid for a warehouse at Ward's Wharf; where are kept large stocks of every article in the price list, and where are executed all large orders for goods. Something has been said as to the causes of our well-doing, but it seems desirable to inquire further into the reason of success so unprecedented. The Association is now one of the largest buyers and sellers in England, nay, in the world; and yet it was commenced and has been carried on by a body of men who in their ordinary employment neither buy nor sell. Moreover, the *personnel* of the committee so changes, that at the present time there is left upon it but one of the original members; while every fresh committee-man, of course, has to learn the very A B C of commercial business. For explanation, I believe we may fairly point first to the high sense of honour which pervades the Government service, and which always renders it easy to find abundance of men whose integrity is above suspicion; secondly, to the admirable training for business (*viz.*, the adaptation of means to an end, as Mr. Walter Bagshot happily defines it) which the post-office service affords; and thirdly, to the corporate nature of the Civil Service. In the establishment of almost every ordinary trading company, as it seems to me, the promoters aim at some advantage for themselves and their friends beyond what is avowed, getting perhaps a larger allotment of shares, or obtaining them on more favourable terms than the general public, or at least securing appointments for their nominees. Indeed, so general is this practice, that it would, I suppose, be impossible to persuade the public that a company had been formed on such a footing as to give equal benefit to every individual shareholder. On the other hand, when the Civil Service Supply Association was formed, not only did not the originators of it obtain any special benefit for themselves, but no one ever imagined that they did. During the eight years that the Association has been in existence, though nearly £2,500,000 have passed through the committee's hands, there has arisen, so far as I know, no suspicion whatever of any dishonesty, or even of any questionable dealing.

"As I have before stated, the Association originated and was organized in the Post Office—a department which, under the guidance and control of Sir Rowland Hill, had seen a great rise of able and energetic men. Even in earlier days Post

Office men had of course taken constant part in a vast and complex business; but the introduction of penny postage had prodigiously enlarged this business in all its branches. Moreover, Sir Rowland's system of management—particularly his bold application of the principle of promotion by merit instead of by seniority—had not only advanced able men to important posts, but had brought out throughout the service powers previous latent. Mr. Scudamore, in a recent lecture, stated that the indirect results of Sir Rowland's postal reforms have been even greater than the direct. Amongst these indirect results, as due to the general spirit of activity and enterprise thus engendered, may, I believe, be reckoned the establishment of the Civil Service Supply Association and the kindred societies which this has called into life.

"Another main element of success is the corporate nature of the Post Office, and of the Civil Service generally. This provided a large business connexion, already linked together and accessible without the aid of advertisements, as soon as the value of the Association was proved. Moreover, there was a special guarantee for integrity. Every one in the Post Office either knows or can easily know something of every brother officer of whatever rank, and this holds good, though perhaps in a lesser degree, of every Government department. Every Committee-man has felt that his reputation as a civil servant was of far too great a value to be endangered by any unfair dealing in the affairs of the Association; the motive to rectitude being so strong, that to put men of even moderately good official standing on the committee was to render it certain that the work would be honestly and diligently done. While, however, the Association has thus far succeeded so admirably, it seems to me that its future course is not free from danger.

"The shareholding body, composed as it is of upwards of 4,000 civil servants from all branches of the service, who have been admitted to membership without any reference to their fitness for the position, has sometimes proved very unruly. Latterly, however, the introduction of the plan of voting by proxy has greatly reduced the power of the comparatively small fraction of shareholders who are disposed to be troublesome.

"The pay of the committee, too, for duties involving much sacrifice of well-earned leisure, considerable labour, and great responsibility, is very low. So long as salaries are limited to £80 or £90 a year, the committee must remain a too changeable body, since capable men cannot be permanently retained on such terms. Hitherto the Association has been mainly served by men whose chief motives were pride in its success, and a desire to benefit their fellow-officers, but of course this will not last. The time must come when the chief inducement to such service will be the desire of adding to income: nor should it be expected that the Association will be maintained in full vigour, unless the payment to the committee be made sufficient to induce well-qualified men to serve mainly as a matter of business.

"A reduction in the shareholding body, with a limitation of it to suitable persons, is now out of the question. Many of us post-office men thought, and still think, that a great mistake was made in not resolutely retaining the control of the Association in the Post Office service; though, of course, we quite approved of admitting the remainder of the Civil Service to all the other advantages of membership. I feel no doubt that should the present Association ever collapse, the Post-Office men would rapidly and successfully organize a new society on the plan of keeping the control in the hands of a moderate number of trustworthy and reasonable men of their service.

"About two years ago, when our Association limited the number of subscribers to 15,000, a new society, entitled, 'The New Supply Association,' was projected to take in those friends of civil servants and others who could not gain admission to the old. Several of the then members of our Committee joined the direction of the new Association, which is conducted upon the same general principles as our own. I see by the first annual report that the Association, which has its stores in Long Acre, has during the past twelve months sold £20,000 worth of goods to its members, so that it has made a good commencement.

"I must mention, in conclusion, that I have never served, and certainly never intend to serve, on the committee of management myself, although I have had the opportunity of watching its work from the commencement to the present time."

MATCH-MAKING.

THE comparatively low temperature at which sulphur ignites led to its being used at the end of a strip of wood as a means of procuring a flame. The old tinder-box, with its flint and steel, tinder and matches, was a troublesome but ingenious arrangement. As it has now become a matter of history, a short description may be interesting to some readers. The tinder consisted of carbon in a filmy form, procured by burning a piece of rag in a short, cylindrical iron box called the tinder-box, the loose cover of which being inserted extinguished the flame of the burning rag and left the carbon. The steel was a strip of hard iron, curved round at the top and bottom, so as to form a handle, this being held in the left hand, and in the right a flint wedge, the sharp edge of which being struck against the steel chipped off minute fragments; the heat developed by the percussion was sufficient to ignite and even fuse these metallic fragments, which, falling down into the easily combustible carbon, ignited it at every point of contact. The operator, then, blowing upon the tinder to keep up the combustion, applied the point of one of the matches to the incandescent carbon, and with some little contrivance managed to ignite the sulphur, which, in its turn, ignited the wood of the match. The cover was then returned to the box, and the weight of the flint and steel pressing it down extinguished the sparks in the carbon. The operation was not, however, successful; the tinder or the matches might be damp, the flint blunt, and the steel worn; or, on a cold, dark morning, the operator would not unfrequently strike his or her knuckles instead of the steel; a match, too, might be often long in kindling, and it was not pleasant to keep blowing into the tinder-box, and, on pausing a moment to take breath, to inhale sulphurous acid gas and a peculiar odour which the tinder-box always exhaled. When, about the year 1673, phosphorus was discovered, and its easy ignition by friction made known, all persons who could afford to procure the costly novelty did not fail to do so. A minute portion of it, rubbed for a moment between the folds of brown paper, took fire, and ignited a sulphur match applied to the flame. In 1680, Godfrey Hanckwitz, at his laboratory in Southampton-street, Strand, manufactured and sold large quantities of phosphorus for this purpose; and so great was the fame of his new method that he set out on his travels to exhibit and sell the article. The costliness of phosphorus probably prevented its general introduction, and it is remarkable that a century and a half should have elapsed before this substance should have come into general use for our best and readiest form of match. It cannot, however, be said that during this long period phosphorus was altogether neglected as a means of procuring a light. Phosphoric tapers were for some time in use: they were small wax tapers, the wicks of which were coated with phosphorus; they were enclosed in glass tubes.

The following information appears in the *Journal of Applied Chemistry*, and was obtained from a visit to the factory of the New York Match Company:—

"The composition room was the first room entered. As the name indicates, this room is set apart for mixing together the various materials which form the inflammable part of the match. Here may be seen a small iron cylinder, about a foot and a half in diameter and a foot long, placed in a horizontal position, and through the centre of which there runs a shaft, to which are attached paddles, the same in general arrangement as a new-fashioned churn. Through an opening in the upper part were poured the substances to be mixed, as sulphur, chlorate of potash, phosphorus, gluc, whiting, &c., which were made by the revolution of the central shaft (which was turned by steam power) to form a homogeneous mass. We shall now speak of the sticks which form the woodwork of the matches. These are of pine, and come from Canada ready made. The sticks for common matches are five inches in length, for parlour matches four inches, both of which are double the length of the future matches. The sticks for parlour matches are sometimes soaked in paraffin to make them more inflammable. Ascending a pair of stairs we came to a large room, which was quite noisy from machines in operation. These were filling machines. We have frequently taken a strap (as a book-strap) and coiled it up. Supposing that between the windings of the leather we were

to place, uniformly, small sticks; at once we see that we should have a coil of sticks the length of which would be parallel to the axis of the coil. It is thus, on a larger scale, that the sticks are held in position for further treatment, and the above-described machine is called a filler. In this room there are eighteen filling machines, twelve for common and six for parlour matches. One filler (or filling machine) contains three-quarters of a gross. The next process is dipping the coils of sticks into melted sulphur. A handle is attached through the centre of the coil, to the end of which is fastened a cord. The above is first placed on a heated iron-plate to dry the ends of the sticks, and then into a pool of melted sulphur. The cord (one end of which is attached to the wall) gives steadiness to the operation. They are then dipped in the same way into the composition first described, and dried by a current of air; and let us remember that they are as yet held in a coil-like form. We were next shown the unloading machines, which, as the name implies, unloaded the double-ended long matches; at the same time they are cut through the centre, thus forming matches of ordinary lengths. Boxing the same is the next operation, which is done by girls in a very expert manner. There are eighteen boxes for common and five for parlour matches. 700 dollars a day is expended for Revenue stamps. In Austria and other parts of Germany, on account of the abundance and cheapness of timber and labour, this branch of industry is conducted on a still more extended scale, several manufactories making daily about 6,000,000 matches.

CHEMICAL SOCIETY.

PROCEEDINGS of the Chemical Society, Thursday, June 19th, Dr. Odling, F.R.S., President, in the chair. At this meeting, which was the last of the season, nine communications were read, of which the following were the titles:—1. "Researches on the Action of the Copper Zinc Couple on Organic Bodies, III., On Normal and Iso-propyl Iodides," by J. H. Gladstone, F.R.S., and A. Tribe, being a continuation, in the propyl series, of the authors' previous researches. 2. "On the Influence of Pressure on Fermentation. Part II. The Influence of Reduced Atmospheric Pressure on the Alcoholic Fermentation," by Horace T. Brown, in which he finds that, under diminished pressure, the progress of the alcoholic fermentation is retarded in a remarkable way. 3. "On Cymene from Different Sources Optically Considered," by J. H. Gladstone, F.R.S. 4. "Note on the Action of Bromine on Alizarine," by W. H. Perkin, F.R.S. This reaction gives rise to *bromalizarine*, an orange-coloured crystalline substance, possessing feebler dyeing properties than alizarine, the colouring principle of madder. 5. "On some Oxidation and Decomposition Products of Morphine Derivatives," by G. L. Mayer and C. R. A. Wright, D.Sc. 6. "On the Decomposition of Tricalcic Phosphate by Water," by R. Warrington. 7. Communications from the Laboratory of the London Institution No. XII. "On the Nature, and on some Derivatives of Coal-tar Cresol," by Dr. H. E. Armstrong and C. L. Field. 8. "On a New Tellurium Mineral, with Notes, on a Systematic Mineralogical Nomenclature," by J. B. Hannay. 9. "Note on the Relation among the Atomic Weights," by J. A. R. Newlands. The President finally adjourned the meeting until after the recess, congratulating the members on the flourishing state of the Society, and on the number and importance of the papers that had been read during the session.

A NAGUR-TIVE.—The *New York Commercial Advertiser* says:—A Portland photographer engaged a woman to wash the floor of his photographic gallery. The woman, seeing a large basin full of what she presumed was hot water standing on the stove, emptied the contents into her water pail to warm the water it contained. Now, it happened this basin contained a silver bath for negatives, and the result was:—One black floor, two female arms well blackened, an awfully scared Irishwoman, who thought "tho devil had turned her into a nagur, shure," and a loss of 15 dols. to the photographer.



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J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution;
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VIGOUR.

AFTER our experience of the timidity and hesitation displayed by the Pharmaceutical Council in the presence of almost every important question last year, the appearance of energy and decision in that body is as refreshing as it is unexpected. What will become of us all before next May, if the present "revolutionary" spirit continues, the Fates alone can guess. The thirst for destruction grows by what it feeds upon; and institutions, abuses, friends, and foes may well tremble when they see the governing powers resolutely bent on action of some sort even in the relaxing days of July. When such a conservative as Mr. Sandford sets to work to remove the landmarks we may begin to take our last fond look at all familiar objects, and remark with Shelley, "There's nothing sure but mutability."

In nothing was the new tone so manifest as in the quiet decided manner in which the majority of the Council resisted Mr. Schacht's almost pathetic appeals for a little more delay, ere the Society parted with its educational functions. Mr. Schacht only proposed the plan which was always welcome last year, namely, to publish the suggestions and wait for opinions. But clearly that policy has exploded, which need grieve no one. Better that the Council should err occasionally than everlastingly hover between right and wrong. Apart, therefore, from any question as to the merits of this particular issue, we are heartily glad that the meetings of Council show signs of a more healthy condition, and that its members are at last resolved to act promptly and decisively.

The scheme just accomplished, and described by Mr. Schacht as a revolutionary one, is the separation, to an extent, but not entirely, of the School of Pharmacy from the Society as a corporation. The Society will still be proprie-

tors of the school, and will still be responsible for its conduct. The Council will appoint the professors, and a handsome subvention will be contributed each year to the school, in order to aid the work of pharmaceutical education. The three professors will receive a hundred pounds a year each, and the use of laboratory, lecture rooms, and appliances free. With that endowment, with the prestige of their school, and with their own well-recognised talents, they may very reasonably look somewhat hopefully on their future prospects. Another point in the scheme is that the courses of lectures are to be compressed into five months instead of extending over ten months, as at present, so that each professor will go through two courses instead of one each session.

We are disposed to applaud this new arrangement heartily. Not exactly for the reason which has induced Messrs. Sandford and Mackay to advocate it, namely, that it is anomalous that the Society should be both an educating and an examining body. We fail to see how this scheme removes the anomaly. There is but one way of accomplishing that object, and if we thought it so specially desirable that the Society should not exercise both functions, we should earnestly urge, what is certainly not yet the result, the entire abdication of educational business on its part. But in practice it is impossible to attain absolute theoretical perfection. Our idea is that—in educational as in political machinery, the best economy is to utilize to the best possible purpose such arrangements as are in existence. To take the nearest example at hand. No one would maintain that a national system of compulsory education is perfect in theory. It cannot be made to fit in with our British ideas of personal freedom. In that respect it is anomalous. And yet our best statesmen have been forced to arrive at that conclusion, as the only one which satisfies the circumstances of our country. So in the pharmaceutical instance. We admit the anomaly which, by the way, exists also, though on a larger scale, in our great universities; but we find that the system as yet works well, and we are not, therefore, anxious for the mere sake of logical accuracy to see the Pharmaceutical Society abandon its position as an educating body, for which its resources are so well adapted.

But we hail the new scheme because, while it does not relieve the Council of responsibility, it does most certainly place the School of Pharmacy on a more businesslike basis. As Mr. Urwick pointed out, it gives the professors the utmost possible interest in making their classes as attractive and valuable as possible.

Now that the metropolis has been so well cared for, it is probable that the provinces will come in for a share of attention in the matter of education. Perhaps we may again bring before the notice of the Council the suggestion which was made in this Journal a year ago, namely the appointment of a few eligible young men as roving lecturers. Most provincial towns of any size would provide rooms and classes, if Bloomsbury would supply lectures, and therefore every penny spent would go straight to the object intended. None would be wasted on buildings, and the expensive and troublesome machinery of examinations, which a system of payment by results requires, would be avoided. None the less, however, would the seeds of a sound pharmaceutical education be sown throughout the country.

Also we may perhaps hope that this fresh vigour will be employed to some extent in the more effectual enforcement of the Pharmacy Act. The Parliamentary session is almost over, and the members who spoke so warmly and courageously on the platform, have failed to strike a single blow for

us at St. Stephen's against the co-operative stores. Everyone admits that there is a strong case against them, as far as their infringement of the Pharmacy Act is concerned. Will not the Pharmaceutical Council venture on the struggle? The Drug Supply Association, the proprietors of which are unregistered, displays its unhalloved and showy lamps within a stone's throw of two members of the Council. Surely this company is fair game for the solicitor's bag. We cordially welcome the new boldness, and trust it is a principle and not a spasm.

THE TEACHING OF THE STREAMS.

By JOSEPH INCE.

SHOULD the pharmacist, tired with his annual work, seek by brief repose to regain health and strength, he can do nothing better, and few things cheaper, than explore the quiet beauties of the Meuse. The Rhine is a nobler river, with grander scenery and the charms of poetry have lent an added interest to its natural fascination, and crowded it with associations dear to every scholar. Yet we could offer a humble plea in favour of green pastures, and would attempt to lead the weary worker beside the still waters of comfort. Antwerp rises before us in the glow of autumn sunshine; Liège persuades us to linger on our journey; and Huy, picturesque and tranquil, may be thought even by the most stolid to deserve the epithet of romantic.

One step further, and leaving the rush and wear of civilization behind us, we gain a little town which some of our geographers contemptuously omit, but which has an existence notwithstanding, and is called Villers-la Ville. It has hills and dales and rivulets—masses of wild flowers, and a *post-restante* kept in the kitchen drawer of the one wayside inn. There may be seen in this the nineteenth century, live woodmen felling pine trees in the forest; and there may be seen also a small brick archway through which pass two streams, forcibly compelled to issue through one narrow passage; but as they struggle onwards in their impetuous course the one is clear, bright and sparkling, the other foul and muddy. Contact with its polluted brother the first cannot refuse, they are bound together by the inexorable law of bricks and mortar; but never is the limpid stream degraded, and though from time to time the very violence of the descent mingles the waters for an instant, there is a convulsive movement of irritation, and the unsullied spring, conscious of the insult, flings back the contamination, and pure flows on. Travellers tell us of the famous rivers the Rhône and Saône, and men of eloquent thought have pointed out the moral while they describe how the blue waters of the one change neither hue nor speed though in forced companionship at Lyons; we choose, rather, homely illustrations from which we learn a lesson, and we address (strange as it may seem) not students, nor the young men in our great metropolis, but that worthy class so constantly neglected in journal ethics, the fathers who, with anxious hearts, have committed their children to the vortex of town life; or possibly too timid and forboding, have denied their sons the known gain of contact and emulation, fearing lest such advantage might be more than counterbalanced by vitiated morals, a dead conscience, and perverted habits. We say, in a voice in which there is no note of hesitation—Fear not. The safeguard is the home. London has its manifold temptations, Paris has more. The difference between the two cities is that in the one a youth may turn to evil, in the other Satan comes to him, kid-gloved and with a smile; in both there is positive sin to be avoided,

fought and conquered: in both bad influence is imminent, cannot be slighted and must be met. In both amusement courts the unwary in Protean shapes—it may be healthful, necessary and desirable: it may lead to perdition. On the other hand there is infinite facility for improvement, in learning, in industry, and in accomplishment: all three stimulated, raised, as we should say, to the boiling point, by competition. Respecting this we need not expatiate, for it is a point conceded, taken as read, and granted beyond dispute. The moral view is the stumbling-block, the chances of dissipation, though they may not end in riot. There is the dread lest the son might forget his father's house, though he might not sink so low as to hunger after the husks of which the swine did eat. Suffer us once more to say, still without a shadow of hesitation, Fear not, and when most in trouble remember the teaching of the streams. Let the spring be pure (that is your concern), and to the pure will all things be pure. The stream *must* run side by side with its fellow, its waters *must* ever and anon be intermingled, they cannot long as this world lasts, and tares grow with wheat, remain alone. Be not disheartened with the mud, it will do no permanent harm, motion is everything; a man cannot touch pitch and not be defiled, because he stays with his defilement; but the water, eager to pursue its course, will leave the apparent soil behind it—the hill-side rivulet will deepen into a stream; who knows but that the stream may swell into a mighty river? And thus, metaphor apart, you may risk the perils of the untried. God's Providence will be your son's inheritance. The monotony of a country existence is not infallibly productive of high morality, nor is the prolonged discipline of home the best preparation for that warfare which we all, sooner or later, are called to wage.

Gladly we hasten to remind our readers that the records of the sessional year, soon to be numbered with the past, afford the brightest commentary on our theme. The muddy stream remains the same, equally sluggish and unsightly, whether dragging its slow length along some dreary lowland, or gazed upon by the glorious ruins of the Abbey of Villers—the true stream, faithful to the purity of its origin, remains untouched.

Analogy must not be pushed too far, there is the chance of falling, else temptation would be non-existent; but we honour the present generation of the youth of pharmacy in that they have demonstrated how often and how well temptation may be vanquished, and an honourable career achieved. Therefore with more confidence we dismiss the matter, recollecting with gratitude and hope the long list of those whose actual conduct has been so remarkable a confirmation of the teaching of the streams.

BLEACHING WAX.—Wax is freed from its impurities and bleached by melting it with hot water or steam in a tinned copper or wooden vessel, letting it settle, running off the clear supernatant oily-looking liquid into an oblong trough with a line of holes in its bottom, so as to distribute it upon horizontal wooden cylinders, made to revolve half immersed in cold water, and then exposing the thin ribbons or films thus obtained to the blanching action of air, light, and moisture. For this purpose the ribbons are laid upon long webs of canvas stretched horizontally between standards, two feet above the surface of a sheltered field, having a free exposure to the sunbeams. Here they are frequently turned over and covered by nets, to prevent their being blown away by winds, and watered from time to time. Whenever the colour of the wax seems stationary, it is collected, re-melted, and thrown again into ribbons upon the wet cylinder, in order to present new surfaces to the blanching operation. If the weather proves favourable, the wax eventually loses its yellow tint. Neither chlorine, nor even the chlorides of lime and alkalies, can be employed with advantage to bleach wax, because they render it brittle and impair its burning qualities.



THE Parliamentary news of the month is meagre. The withdrawal of the Trade Marks Registration Bill was announced by Mr. Gladstone on July 7th. He intimated at the same time that the President of the Board of Trade would keep his eye fixed on the subject. The Shop Hours Regulation Bill, which has been generally distasteful to the class for whose benefit it was drawn up, has been again postponed; and the Juries Bill is still in Committee of the House of Commons. The general opinion is that the latter has but little prospect of weathering the House of Lords this session.

A petition against Sir John Lubbock's Shop Hours Regulation Bill, signed by the President on behalf of the Pharmaceutical Society, was presented to the House of Commons, on June 24th, by Mr. W. H. Smith. Those points in the bill to which we have already called attention were urged in the petition.

We have the pleasure to announce that we have arranged with Messrs. E. J. Hart and Co., wholesale druggists, of New Orleans, to act as our agents for the Southern States of America. Subscriptions to this journal may be paid through them. We send the CHEMIST AND DRUGGIST to all parts of America post free for two dollars per annum.

Our German correspondence is interesting this month. Readers will probably notice that our Berlin correspondent has a decided tendency towards a freer trade in pharmacy than Germany is yet blessed with, while our representative at Vienna seems to hold views which lean towards conservatism.

We hear that our old friend Mr. Simon has appeared again on the pharmaceutical arena. He has raised a question as to Mr. Haselden's eligibility for the examinership to which he was lately appointed. A bye-law provides that no person shall be appointed an examiner who at the time of appointment is, or who during one year prior to the time of appointment has been, a Member of the Council, other than the President or Vice-President. Mr. Simon considers that the saving clause refers only to the actual President or Vice-president; and does not permit appointment of one who has been such. The point we believe awaits settlement by the Privy Council.

Miss Alice Vickery—the lady candidate who passed the minor examination on the 18th ult., is we understand, lady superintendent of the Ladies' Medical College, in Portland-road, and has passed the Obstetrical Society's examination in midwifery. As soon as the London Medical Schools open their doors to ladies, she intends we believe, to prosecute her studies for a medical diploma. A man struggling with adversity is we are told a sight worthy of the gods; surely woman, exhibiting the dauntless perseverance and patient endurance which have characterized our lady medical students, is an object not less worthy their regard.

The *Pharmaceutical Journal* (June 28th), in a leading article on the Shop Hours Regulation Bill, takes a similar view to that advocated in this journal last month in reference to early closing. Our contemporary says—"Individual action is precisely the action most likely to be effectual. If a few persons in the drug trade resolutely persevere in closing their shops at an earlier hour than has been the custom, the result will be not only to educate public opinion into a recognition of the propriety of such a course, but also to convince those who keep late hours that they are rather losers than gainers by adhering to the old plan."

On the night of June 9th, the shop of Mr. Pattison, chemist, Coleham, Shrewsbury, was found to be on fire, and the family had a narrow escape by ladders from the upper windows. The fumes from the shop were so dense as to prevent any exit by the stairs, and but for the timely discovery and alarm from the outside the inmates would soon have been suffocated.

Several West-end chemists were lately patronised by a customer who, having exhausted other channels of spirituous indulgence, had arrived at chloroform. According to letters written by Mr. Greenish, of New-street, Dorset-square, and Mr. Taylor, Baker-street, Portman-square, the plan adopted was to ring up the unfortunate chemist in the middle of the night, and representing himself to be a medical man, with an urgent case on hand, obtain a supply of the purest chloroform, which he immediately proceeded to inhale in the shop, regardless of the remonstrances of the shivering and fatigued proprietor. Generally his commanding figure seems to have inspired sufficient fear to allow him to escape with impunity. But ultimately he was brought before a magistrate, who seemed to regard him as a lunatic, and remitted him to his friends.

A terrible dispensing accident occurred at the Berks Hospital, Reading, on June 28th. A patient named Mary Corps, aged 32, took a draught between 9 and 10 p.m. which had been prepared for her by the dispenser. As soon as she had taken her medicine she complained of a burning sensation, and asked for water. She then became very ill, and the house surgeon, Mr. Galpin, was sent for. He saw that the case was beyond all medical skill, and the patient died in half-an-hour. It was ascertained that the draught contained four drachms of prussic acid, and that the deceased had taken half that quantity in the medicine administered to her. An inquest was held on the Monday, and the dispenser, who had been four years at the hospital, attended before the jury, and stated that he was very busy on Saturday, having made up nearly 200 prescriptions; he had used prussic acid frequently during the day, and it was near the bottle which he should have used for Miss Corps' prescription. He was unable to account for the mistake, and it was the first that had occurred.—The dispenser was stated to be a very respectable, steady, and careful man, and about 50 years of age.—The jury returned a verdict of "Death by misadventure."

Chemists' errand boys seem to be having a bad time of it just now. The death of two lads under different circumstances has attracted some attention. At Hereford, a lad named Morgan, who was errand boy to Mr. Davies, chemist, Broad-street, went home late on Thursday night, and complained of feeling sick and ill; but as it was thought that he had been smoking, no notice was taken of him. He became much worse during the night, and all that could be got from him was, "It's all the fly powder!" He became delirious, and died in great pain. The surgeon who saw him before death and who made a *post-mortem* examination, stated at the inquest that he found arsenic in large quantities in the stomach and intestines. Mr. Davies said he had cautioned the boy to cover his mouth when mixing fly-powder, but he disregarded the warning; he added that it was impossible that the boy could have inhaled sufficient poison to occasion death. The surgeon also supported this view. Much public interest was manifested in the case, there being no means of proving how the poison was taken, the jury returned an open verdict, "That the deceased had died from the effects of arsenical poisoning, but under what circumstances there was no evidence to show."

Another case occurred at Portsmouth. Mr. Lewis, chemist, of High-street, having just commenced business here, found on a shelf a packet of corn flour, which had been left there by his predecessor. This he gave to his errand boy, directing him to throw it away. No doubt thinking it a pity to throw it away, the boy took it to the servant girl, who prepared the flour, and both she and the boy partook of it. Almost immediately they were taken very ill, and were taken to the hospital, where the boy died. The girl is likely to recover. It is believed that Mr. Lewis's predecessor had mixed some arsenic with the corn flour for the purpose of destroying vermin.

Another lad, who was sent out to deliver medicines, was killed in London by a tram-car, while standing talking to some juvenile companion near the "Finsbury Arms," close to the line of rails and siding. He was caught either by the horse or vehicle, thrown down, and dragged some distance along the road. He was taken to the nearest hospital, where, after lingering in horrible agony for a few hours, he expired.

An aerated water manufacturer at Shrewsbury has been fined for using bottles with another manufacturer's trade-mark on them.

The Michigan Legislature has lately enacted that hereafter druggists or doctors who fail to write or print upon the label of each bottle or paper containing poison the most easily obtainable antidote to the same, shall be subjected to a very severe penalty.

Kelly's butter came before the Liverpool magistrate again on the 9th and 11th inst. It will, perhaps, be remembered that the local analysts had given directly contrary evidence in this case, and the magistrate (Mr. Raffles) gave a decision in favour of the defendant, but on ostensible grounds which the Court of Queen's Bench has regarded as not in accordance with law. They therefore directed a re-trial of the case. It appeared that three eminent chemists had been appealed to (their names did not transpire), and all had declined to undertake the analysis. After a long discussion between the counsel engaged and the magistrate, Mr. Raffles concluded to apply to Professor Anderson, of Glasgow University. If this gentleman should object to undertake the analysis, he (Mr. Raffles) would then ask the Health Committee to favour him by withdrawing from the prosecution. The case was adjourned until the second Wednesday in September.

OBITUARY.

On the 9th May, 1873, Mr. Charles Palmer Gibson, chemist and druggist, of Whitefriargate, Hull, aged 32.

On the 25th May, 1873, Mr. Henry Savage, chemist and druggist, of Brechin.

On the 2nd June, 1873, Mr. George William Pickles, chemist and druggist, of Leeds.

On the 4th of June, 1873, Mr. James Orissa Peggs, chemist and druggist, of Norwich.

On the 13th June, 1873, Mr. Daniel Dixon, chemist and druggist, of Preston.

On the 18th June, 1873, Mr. John Mason, chemist and druggist, of Bournemouth.

On the 2nd July, 1873, Mr. Stanley Wood, chemist and druggist, of Arlington-street, Salford.

ADULTERATION OF SAFFRON.—This drug, from its high price, is exposed to considerable adulterations; and an American pharmaceutical journal not long since reported a particularly flagrant case which was brought under its notice in Boston:—"A quantity of what was sold for 'German saffron' by a wholesale druggist, upon examination proved to be shreds of Campeachy logwood and fustic, ingeniously blended or matted together, and moistened with a little heavy syrup. The deception was so perfect that an experienced druggist purchased the article and sold it for genuine saffron."

THE CHEMIST'S LAMENT.—Professor John Ordonaux has a poem with the above title in the *College Courant*, to which he appends the following—

MORAL.

Oh, how can we ever grow usefully wise,
Till we read Nature's laws through chemistry's eyes?
How show why all people for want of breath, die,
And turn, when inhaled, into onions or rye?
How else can we tell how a musical frog
Is duly evolved from a dull pollywog;
Or unified lovers revealing one soul,
Two hemispheres joined by an opposite pole,
Which being reversed, breaks the chemical force
Of conjugal union, by legal divorce?
How else can we show how our crimes spring from bile
Perverted, and blunting our conscience the while:
Or, if the child fathers the man anyhow,
Why, *æc. hypothesi*, the calf must the cow?
These riddles our chemistry solves for all men,
By ringing the changes on H O C N.

Dr. John Ordonaux, we may add, is Professor of Medical Jurisprudence in the new school of law in Boston University. He graduated at Dartmouth College in 1850, at Harvard Law School in 1852, and received a medical diploma from Columbia University, Washington, D. C., in 1860.



CONDUCTED BY RICHARD J. MOSS, F.O.S.

TOXICOLOGICAL EXERCISE.

WE intend our next exercise to be similar in nature to the last. The substance to be examined shall consist of a mixture of flour and linseed meal, and may contain a small quantity of a well-known metallic poison. The mixture is to be subjected to such an examination as is required to detect the constituents of the suspected poison.

Students who wish to compete should send us their names and addresses before the 20th inst. On the 25th we shall forward the samples.

Students papers will be received up to the 15th of the following month.

ANSWERS.

The organic powder contained 2.5 per cent. of tartar emetic. Several of the papers received as reports of the last analysis clearly indicate the value of experience in the pursuit of chemical analysis. Or perhaps it would be more correct to say that they show experience to be indispensable. There can be little doubt that many of those who take part in the competition, employ for the first time such tests as those for arsenic, which require some practice in order that they may be successfully applied. A student may be thoroughly read on such a subject, and yet fail utterly when he endeavours to put his knowledge into practice. No amount of mere verbal description can familiarize one with the appearance of a precipitate, for example, to the extent that seeing it once does. The differences in the appearances of the precipitates produced by hydrogen monosulphide in antimonial and in arsenical solutions, and in the behaviour of those precipitates with reagents, are only to be known by actual observation. Books alone cannot supply the requisite knowledge. In this branch of science it is certainly true that the best guide to observation is the best text-book. If our contributors will take the trouble to prepare solutions for themselves, and to examine them with care and attention, they will find out the truth of these remarks. Those who have fallen into the error of mistaking antimony for arsenic in the last exercise, may be disappointed that we have not shown exactly where the error occurred. In the majority of cases we can find nothing wrong but the conclusions arrived at. Tests are minutely described, and the conclusions are in exact accordance with them, and yet wrong. The errors must be errors of judgment, and must proceed from a want of experience. If a student has never observed the characteristic distinctions between the antimonial and the arsenical deposits on copper, he can scarcely be blamed for making mistakes in Reinsch's test. But he is to be blamed for expecting his text-book to perform the duties of the judgment which experiment cultivates.

We promised some remarks about Marsh's test. This test is so well known that it is unnecessary to describe it. There are, however, some precautions to be observed in the application of it, which we notice are frequently neglected. In the first place, when a delicate application of the test is desired, the hydrogen should be dried by passing it through a tube containing fragments of calcium chloride. A light should not be applied to the gas until sufficient time

has been allowed for the escape of the air contained in the flask and tubes: otherwise an explosion will occur. Before proceeding to apply the test to the substance under examination, the purity of the hydrogen should be ascertained by trying if a deposit is produced in the delivery tube when heated; or by any other test by which traces of arseniuretted hydrogen can be recognised. This is a most important precaution. Sulphuric and hydrochloric acids, and zinc are very liable to contain traces of arsenic, and although these reagents may be purchased as pure, it is quite necessary to test them. It should be remembered that arseniuretted and antimoniuuretted hydrogen are decomposed by strong sulphuric acid, and by nitric and sulphurous acids. They are also decomposed by solutions of a number of salts of the heavy metals, notably those of mercury. It is therefore necessary to ensure that these substances do not interfere with the test. Arseniuretted hydrogen is exceedingly poisonous. Air containing a very small proportion of it has produced fatal results. It is important to remember this in using Marsh's test, or in experimenting with arsenical compounds.

PRIZES.

The First Prize for the detection of the poison in the mixture distributed in May has been awarded to

J. C. THRESH (England), 115, King-street, Dukinfield, who gained the Second Prize in the previous competition.

The Second Prize has been awarded to

FRANK W. YOUNG (F. W. Y.), 40, Blacks Croft, Dundee.

Marks Awarded for Analysis.

England (1st prize)	95
F. W. Y. (2nd prize)	93
C. W. Halliday	91
C. J. M.	90
A. A.	89
Gradatim Excelsior	80
C. E. N.	75
C. F. P.	73
T. S. D.	73
Juvenis H.	71
Semper Fidelis	70
B.	70
T. T.	65
F. W. Fletcher	60
F. B.	60
T. A. C.	60
D. S. Anderson	58
W. Laugher	52
J. T. Tibbles	50
F. N. H.	0
Hydargyri Perchloridum	0
Nemo	0
T. W.	0

TO CORRESPONDENTS.

* * All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

England.—A very good and conclusive examination.

Semper Fidelis.—Your paper was very fair in its way, but you failed to show with sufficient clearness that the poison was tartarated antimony.

B.—You entirely overlooked the acidulous radical. In this case it was easily detected.

T. T.—So far as the detection of antimony was concerned you did very well. It was necessary, however, to show in what condition it was present.

D. S. Anderson.—It was unwarrantable on your part to state that the poison was tartar emetic, without giving evidence of the presence of the tartaric radical.

J. T. Tibbles.—The heating of the stained copper in a Bunsen flame was a waste of time and material. It should be carefully dried and then heated in a tube, so that the sublimate may be examined. If it was ammonia that you employed to neutralize the hydrochloric acid solution which you examined for tartaric acid, it was a mistake, as ammoniacal salts interfere with the precipitation of calcium tartrate. You should have prepared an aqueous solution to be examined for the tartaric radical.

F. N. H.—Your examination appears to have been too hastily performed. If you boiled the hydrogen monosulphide precipitate in strong hydrochloric acid, some of it must have dissolved. It should have dissolved entirely if sufficient time had been allowed. We strongly recommend you to prepare a few solutions, containing small quantities of arsenic and antimony, in different proportions, and to experiment on the separation of those metals. You will thus obtain knowledge which ought to prevent a recurrence of such errors as those into which you fell. To do this would be to do a great deal.

Hydrargyri Perchloridum.—You appear to have been determined to find mercury.

T. W.—It is evident that your hydrochloric acid is useless for arsenical tests. We fear that you assumed the hydrogen monosulphide precipitate to be sulphur without any investigation. The experiment which you describe must have resulted in the precipitation of the antimony present as orange-coloured antimonious sulphide.

W. P., Manchester.—We do not impose any restrictions as to the use of books, but we expect you to carry out the analyses without verbal advice or any other assistance of this nature.

H. H., Bandon.—Inquiries can only be answered through the medium of the journal. The announcement of the exercise contains an answer to your question.

H. J. J.—Your paper was not included in the competition, because it arrived too late. You will miss many a better prize than this in life, unless you cultivate the habit of punctuality.

SEWERAGE AND SEWAGE.

IT is no exaggeration to say that the problem of the conversion of the excremental waste of towns and people and the refuse of factories into useful materials is now engaging as much of the attention of intelligent minds throughout the world as any social question. The English press is burdened with publications on this general subject. Chemists, farmers, political economists, engineers, and physicians are all at work upon it. Costly experiments are being constantly made to test the worth of the various proposed plans. Stock companies are formed, whose business is first to make money for themselves at any rate, and, secondly, to benefit the rest of the world by their ventures. From all this excitement we ought to derive much useful information, and, from the experience gained in foreign countries, gather knowledge which may be turned to practical account in solving a problem which, in the natural course of the country's growth, must eventually be forced upon us. In briefly considering the subject, we draw for our facts upon the recent report of the State Board of Health of Massachusetts, and premise by explaining what is meant by the words

“SEWER,” “SEWERAGE,” AND “SEWAGE.”

The last two are often confounded; but they signify quite different things. A *sewer* is an underground passage for the conveyance of water, filth and fluid, or half fluid, refuse emptied into it from the smaller drains from houses, factories, and streets. *Sewerage* is a system of sewers or subterranean conduits, and the word refers only to these works or constructions, while *sewage* is the material which is or may be conveyed in sewers. Public health requires that the foul fluids, half solids and solids, resulting from human excretion, from the waste of food, from washing, and from the refuse of various manufactures, shall be either speedily removed from among the living, or that the character of these materials shall be so changed that they will not undergo decay. We have, therefore, to consider, first, the primary means of getting rid of this noxious waste; and second, how to utilize its valuable properties after we have provided for its removal. For merely disposing of human refuse, there are two principal systems to which we shall allude. The first is the

DRY EARTH SYSTEM.

Abundant experience has shown, and in these columns we have repeatedly explained the fact, that earth (not gravel or sand), when carefully dried so that it has lost all cohesiveness or stickiness, and has become a powder, possesses the power of absorbing and reducing to an inodorous form the excretions of the human body, provided it be applied in quantities so as to completely cover and absorb all fluidity thereof. The mass may be removed at convenient times and seasons and used immediately as a fertilizer for land, or it may be dried and employed many times without giving off any offensive odour. Similarly, dry ash of hard coal or anthracite may be used instead of earth.

In densely populated cities and towns there are difficulties inherent in this system which will render its general use

impracticable. If it is intended to absorb both the solid and fluid excretions of the human body (and the latter contain far more fertilizing material than the former), four or five pounds of dry earth must be supplied daily for each individual. Thus, in a city of 100,000 people, 250 tons must be brought in every day from the surrounding country, and a somewhat larger amount carried out. And this must be divided among some 10,000 different houses, each of which must be carefully provided for. At the present high price of labour, it is evident that, financially, such operations are out of the question. The case, however, is altogether different with country houses with land from which the earth may be taken and to which it may be profitably returned. Here the wells will be protected from fouling, the stench of unsightly outhouses prevented, and the annoyance occasioned by frost obviated. In prisons and large establishments where labour is cheap, and possibly in boarding schools, the system may also be advantageously applied. Without proceeding further into a subject which we have already fully treated both in theory and practically, by illustrating and describing the many excellent inventions which have been introduced for its application, we proceed to the second systematic method of disposing of human excretion known as the

WATER CARRIAGE SYSTEM.

This is by the underground drains and sewers which all compactly built towns are obliged to have in order to get rid of the surface water falling as rain, and also for drainage of the soil. With these sewers, by means of water closets, baths, &c., the interior of dwellings are brought into close connection. Consequently, whatever gases are contained in these underground passages seek to diffuse themselves through the buildings. These gases are dangerous to health, though what the specially noxious element in them is, no one can define.

The sensible properties of sewer air are quite remarkable. It is by no means fœtid, as many people suppose, neither is it pungent or ammoniacal. It is rather negative in character, faint in odour, mawkish, smelling, perhaps, more like soap than any other familiar substance. This air frequently escapes into houses, diffusing a virulent poison and carrying with it the seeds of disease; it is subject to pressure from sudden influx of water in rainstorms, and in seaboard towns by the action of the tide. It is also caused to rise from the difference of temperature of the house and sewer; and unless the joinings of the soil pipes are perfect, and have not become leaky through contraction and expansion, it is forced out and quickly spreads through the dwelling. Defective traps and similar imperfections in the plumbing also form free vents. For these reasons, it is best to give the whole drainage plan of the house the freest possible communication with the outer air at a point so elevated that the sewer gases cannot fail to be diffused and got rid of. This can readily be done, while building, by carrying the soil pipe, made of iron, at full size, through the roof, and leaving it open like a chimney. By this arrangement all stagnation is prevented; the contents of the house drains are constantly exposed to the oxidizing and purifying influence of currents of air; when rain conductors are filled with water, there is still free escape for the sewer gases; and the water traps throughout the house are relieved from pressure both of the pent-up sewer air on the one side, and of suction, or atmospheric pressure on the other. In the houses already built, a lead pipe may be readily carried from the highest point of the soil pipe directly through the roof; but the larger the pipe and the straighter its course, the better.

THE TREATMENT AND VALUE OF SEWAGE.

Experience having shown that the best method of getting rid of excretal and other matters is by the water carriage system, the question arises what shall be done with the sewage. As we have above intimated, many and various plans have been proposed, from which the conclusion may be justly reached that the purification of sewage is a possibility to an extent that it may be discharged into running streams without vitiating the water to any extent other than to unfit it for drinking purposes. The writer of the report before us qualifies this view, however, with the opinion that no process has yet been proposed which, unless in exceptional cases, renders the purification an operation of real profit, although it may be conducted so that there shall be

some pecuniary return. Before entering upon the description of some of the principal plans, it may not be amiss to add a word as to the value of this waste material. The value of the annual voidings of an average individual is, by competent authority, estimated at from 1.61 dols. to 2.01 dols. The value assigned to "average" sewage by the English Rivers Pollution Commission is per 100 tons 4.10 dols., or about 4 cents per ton. The sewage of London, for example, is estimated to amount to 260,000,000 tons annually, which, considered as worth only two cents a ton, aggregates 5,000,000 dols.; that of New York would be worth close upon 2,000,000 dols.

THE LIME PROCESS

consists in mixing the sewage with a certain proportion of milk or cream of lime, agitating the mixture violently and then allowing it to subside. There settles from the mixture a copious precipitate of a highly putrescible mud, while the liquid flows off in a tolerably clear condition. As far as purifying the sewage is concerned, the process is a failure. The suspended matters removed are also found to contain only about one-tenth of the valuable constituents; so that, as a manure, the product is of no special merit. The drying of the mud is a very offensive operation. Practised in England, the manure only brought 1s. per ton, and sold sparingly. This sum was about one-third its cost of production.

BLYTH'S PROCESS

consists in attempts to recover the ammonia from the sewage. Superphosphate of lime and a salt of magnesia are added, under the supposition that an insoluble phosphate of magnesia and ammonia will be thrown down. Unfortunately, however, this compound is only insoluble in the presence of an excess of ammonia; and, moreover, analyses show that a third part of the phosphoric acid added is left in the solution, proving absolute loss. The English Sewage Commission consider this the worst and most costly plan yet proposed.

HOLDEN'S PROCESS

is a patented operation, and consists in mixing the sewage with sulphate of iron, lime, and coal dust. It not only fails to remove the putrescible organic matters in solution, but actually augments their quantity. An analysis of the air dried mud showed the presence of only .3 per cent. phosphoric acid, .004 per cent. ammonia, and .555 per cent. of organic nitrogen; so that as a manure, it is practically worthless.

THE A B C PROCESS

we fully described in a recent issue of our journal. It derives its name from its essential ingredients, alum, blood, clay, and charcoal, which are mixed with water and run into the sewage in a continuous stream. The good results obtained by its use we have already fully detailed.

THE PHOSPHATE PROCESS

is founded on the fact that certain mineral phosphates, especially those containing alumina, when in a hydrated or freshly precipitated state, eagerly combined with the organic matter contained in the sewage, it being sufficient merely to agitate them in the most foetid sewage to deprive it of all its odour and colour, even if tinctorial substances of great intensity be present in the solution at the same time; while the phosphate of magnesia combines with the ammonia contained in the sewage, and precipitates it also in the state of the double phosphate of ammonia and magnesia. The process delays putrefaction in the effluent water, but the amount of ammonia carried down by the precipitate is found to be practically nothing. The manure is of course valuable on account of the proportion of the phosphate used in its manufacture: but it is hardly probable that it could be made the source of extended profit.

MORFIT'S PROCESS

replaces the natural phosphate of alumina by a new artificial material, which is in fact a waste product at present, being the "mother water" as eliminated by the processes of the inventor for the precipitation of pure phosphates of lime from hydrochloric solutions of mineral phosphates of lime. In his recent work on chemical fertilizers, Dr. Morfit says that the precipitate forms a superior special manure for clay soils, and devotes an entire chapter to detail descriptions of methods for its utilization.—*Scientific American*.



WOHLER'S ORGANIC CHEMISTRY.*

IN chemical phraseology, we may say that this volume represents the solution of the great problems of organic chemistry evaporated to dryness. This description, however, has the disadvantage of being quite incorrect, in respect at least, for the contents of the volume are anything but dry. A casual reader may take but little interest in the preparation or properties of substances rejoicing in such humble appellations as dimethylpseudopropylcarbinol, diethylsulphocarbamide, and perhaps think that chemists must have very little respect for their friends when they call them such names. To the lover of natural science, however, the contents of this volume are at once important and interesting, to the chemist they are of the deepest interest. It will be difficult to determine which of the two great branches of chemical knowledge possess the greater claim on the student of nature; the so-called inorganic chemistry with its important technical applications, and its vast, though as yet almost unrecognised influence on civilization, or the organic branch which is only entering the stage of development which leads to technical utility; but yet would appear to be destined to occupy a high position as a branch of knowledge largely concerned in the analysis of that important compound of force—if we may so call it—the phenomenon of life. The fact that elementary organic chemistry is so poorly represented in English scientific literature would appear to indicate that this branch of knowledge has not received the attention which it deserves from the student class, perhaps, because it is regarded as too advanced to afford easy training in the laws of chemistry. However this may be, we consider that the time has come when organic chemistry should receive more attention from the English student than he has hitherto devoted to it. The appearance of this American edition of a German work is somewhat ominous. It shows us that in this, as in many other branches of science, we are compelled to borrow from our hard working and painstaking neighbours. It is to be hoped that we shall ultimately pay them back good interest on such loans.

The volume under consideration begins with a chapter on the "Constitution of Chemical Compounds," prefixed by the translator for the benefit of the beginner who is unacquainted with the principal terms employed in this branch of chemistry, such as *residues*, *alcohols*, *ethers*, etc. This is followed by a chapter on the "Chemistry of Organic Compounds," giving a brief sketch of the physical properties of organic bodies in general, the valence of carbon, saturation, isomerism, homologous series, the decompositions and transformations of organic bodies, and ultimate analysis. This chapter occupies only twenty-six pages, a circumstance which we regret, as a treatise on organic chemistry, especially an elementary one, is incomplete without a much more exhaustive account of the laws and general principles of this branch of science. Extension of this part would greatly increase the value of the work to the student, and tend to lessen the labour of the teacher. It would appear to be essential to accuracy; such a statement, for example, as this, which occurs on page 20, is inexcusable:—"At a red heat all organic substances burn in oxygen, forming carbonic acid, water, and nitrogen."

After this brief account of the general principles of the science, the student is introduced to the chemistry of those bodies which are regarded as marsh gas derivatives, and subsequently to the derivatives of benzene, naphthalene, and anthracene. This is done by thoroughly considering the best known members of each series and its derivatives, their preparation and properties; while only the prominent physical properties of the less important members are very briefly stated. We have no doubt that this is the best plan

* Wohler's "Outlines of Organic Chemistry," by RUDOLPH FITTIG, Ph.D., etc.; translated from the eighth German edition, with additions by IRA REMSEN, M.D., Ph.D., Philadelphia. H. C. Lee, 1873.

to pursue in a work of this nature. The greater part of the volume is thus occupied, the remainder consisting of a chapter on the glucosides, and one on vegetable substances but little known, including the alkaloids, oils, resins, and gums, many of which are of considerable pharmaceutical interest. There are also chapters on biliary and on protein compounds, and finally one on animal chemistry. It will thus be seen that the ground traversed is very extensive. The prominent feature of these chapters is that they consist almost exclusively of well-arranged facts, while reference to theoretical consideration is seldom made. If we were to estimate the value of this work by the number of facts it contains, and the manner in which they are arranged, we should be disposed to place it high in the list of chemical literature. It certainly supplies a desideratum, by placing within the reach of the English student an excellent elementary treatise on organic chemistry, and a most useful guide to the laboratory work of this branch of science.

MANUAL OF CHEMICAL ANALYSIS.*

In the preface to this work the author states that "it is the duty of the pharmacist and the dispensing practitioner of medicine, as also, to a considerable extent, of the druggist and the manufacturing chemist, to examine the medical chemicals of commerce as to their identity, quality, and purity." And in presenting this book to the public he trusts that it will supply a want, in the form of a "special guide for ready reference in the application of chemical analysis to such examinations." There is novelty in the title of the book. It is just one of those titles likely to attract the attention of a large number of pharmaceutical chemists and students. Many are not satisfied with the simple and concise instructions given in the "British Pharmacopœia," for the recognition of preparations, and the detection of impurities; and have wished for such assistance as would enable them to extend the examinations, and also to become acquainted with the nature of the impurities, the latter information being below pharmacopœial dignity. Those who have gone properly through a systematic course of chemical analysis, are the least likely to feel this want; and unquestionably such a course is a most valuable preparation for the practice of pharmacy. We must not ignore the fact, however, that at present the practice of pharmacy is not exclusively confined to accomplished chemists. The proper study of chemical analysis involves the expenditure of more time and labour than many are willing to bestow upon it. We must remember then, in examining this work, that those into whose hands it is most likely to fall possess but a scanty knowledge of the general principles of chemical analysis. To keep them out of difficulties and confusions, and lead them to correct conclusions in their attempts at amateur analysis, is a task of no mean magnitude. To accomplish such a task it is at least essential that information should be given in a manner as far as possible removed from the risks of misinterpretation; for those who know a little about a subject, but yet not enough to enable them to form an idea of the true extent of their ignorance, are always more likely to rush to hasty conclusions than those who are free from the dangerous thing—a little knowledge. The task, however, has been undertaken by the author: let us see with what success he has accomplished it.

The work consists of two parts. The first part treats of Operations and Reagents, Qualitative and Volumetric Analysis. On the subject of operations the author confines himself to a few practical hints. Precipitation is here referred to as "the most important mode of detecting and discriminating bodies by their physical and chemical properties." On this subject he says:—"The formation of an insoluble body from a solution can be effected either by a change or modification of the solvent, or by the production of one or more new bodies, insoluble in the solvent." One way, then, of forming an insoluble body, is by producing a body insoluble in the solvent. This may be an explanation, but we

fail to see it. In order to understand it, perhaps it is only necessary to comprehend it thoroughly. The chapter on reagents is in many respects remarkable. It exhibits very prominently the author's peculiar style, which is verbose and prolix to a painful degree; while from a logical point of view, we cannot help regarding it as strange. It is here stated that "a sufficient knowledge of theoretical chemistry in its details, and especially a familiarity with the deportment, properties, and relations of the common compounds and reagents, are indispensable to the pursuit of chemical tests and examinations. Upon such knowledge depend the conception and comprehension of the conditions necessary for the formation of new compounds, and for the manifestation of the various reactions, as well as the correct inference from the observations and results of all investigations; and without it they will remain unavailing and uncertain." A page further on a little more light is thrown upon the subject. It is stated that "In operations of chemical analysis it must always be borne in mind and well understood that, in the processes and phenomena taking place between the reagents and the substances acted upon, as in all chemical changes and reactions, certain laws and definite limits exist between cause and effect, and that the ability of correctly applying knowledge, judgment, and skill, and of drawing the right inference from necessary as well as from casual reactions and phenomena, must rule and guide the methods and operations of the investigator, and carry them beyond mere conjecture and empiricism." As examples of style these extracts need no comment.

In this chapter we find allusion made to the excessive use of reagents, "which may re-dissolve, and consequently destroy the precipitate whereon the reaction is based." It is difficult to understand what is meant by a reaction being based upon a precipitate. In almost all cases of precipitation, the precipitate is a product of a reaction; and it cannot be a product and a basis of the same phenomenon. On page 39 there is a list of metals "whose sulphides do not possess acid properties, not combining with, and, therefore, insoluble in alkaline sulphides." This list includes the metals—silver, lead, and copper, which form double sulphides with one or other of the alkali metals. The author does not appear to be aware of this fact. Because the double sulphides are not produced in the wet way, it does not follow that they are not produced at all. On page 41 there is a process given for the separation of a number of metals, including silver, mercury, and lead, as sulphides, from a solution acidulated with hydrochloric or nitric acid—a novelty in chemical analysis. The author states that he omitted chemical notation "for want of unanimity and absolute certainty in this particular point of chemical philosophy." In an evil moment, however, he committed some remarkable formulæ to paper: here are some sulphides soluble in ammonium sulphhydrate—"AsS, SbS, SnS, AuS, PtS." There are also some curious oxides soluble in potassium hydrate—"Pb, Sb₂O₃, SnO₂, Tn, Al, Co." It is to be regretted that the want of unanimity and absolute certainty was not considered applicable to these formulæ. It is evidently needless to enter at length into the examination of the second part of the book—"The Medical Chemicals and their Preparations." It is only right, however, to state that it does not present so many decidedly objectionable features as the first part. Many of the tests described are rough, and are not suited for the detection of small quantities of impurities. In a manual of this sort it is of course necessary that the same tests should be frequently referred to, in treating of different substances liable to contain similar impurities. But we doubt the wisdom of occupying space by giving on each occasion a short description of the test. It would be much better to describe the tests once for all minutely, and to point out the precautions to be taken in applying them. The modifications of a test required by special cases could be described when necessary. In this way space would be turned to much better account. The author has his own ideas about the value of space. We find that references are omitted for the purpose of saving it, while at the same time there is scarcely an illustration in the book which does not occur more than once. Indeed, there is one picture of a test-tube, which appears on eight different occasions, occupying about three-quarters of a page each time; and there are many smaller illustrations inserted almost as frequently. A portion of the

* *Manual of Chemical Analysis as applied to the Examination of Medical Chemicals.* By FREDERICK HOFFMANN, Ph. D., Pharmacist in New York. New York: D. Appleton and Co.

space thus wasted would have sufficed to give the necessary references, which should not have been omitted. The liberties taken with the matter of some well-known works on chemical analysis, render the omission of references the more inexcusable. While agreeing with the author that the difficulties to be overcome in a work of this sort are great, and allowing him full credit for attempting to cope with them "in a pursuit and position which exclude, almost wholly, the quiet reflection and undisturbed study requisite for the prosecution of scientific or literary labour;" we are, nevertheless, of the opinion that no such difficulties could constitute an adequate excuse for the grave error of judgment which he committed in presenting such a defective volume to the public.

FOODS.*

THE third volume of Messrs. Henry S. King and Co.'s interesting International Scientific Series is contributed by Dr. Edward Smith, and is a comprehensive *résumé* of our present chemical and physiological knowledge of the various foods, solid and liquid, which go so far to ameliorate the troubles and vexations of this anxious and wearying existence. The efforts of sensational scientific writers, so well backed up by the authorities of the South Kensington Museum and Her Majesty's Commissioners for the International Exhibition, have made the subject of food one of the most popular, and at the same time one of the most confused branches of popular science afloat. The un-instructed sight-seer wanders through the Food Collection at the South Kensington Museum, then he gazes on the learned-looking diagrams and the incomprehensible collections of constituents and adulterants at the International, after which he reads a *Daily Telegraph* article on sausages, or studies the subject more deeply from a quasi-medical article in a popular magazine, by which time his ideas about gluten and gelatine, foot-pounds and carbonic acid, Arthur Hill Hassall, nitrogenous food, trichinosis, and the Adulteration Act have become so intimately mixed in his mind, that he would be puzzled to say whether albumen was or was not the pigment employed by the Chinese to pass off old and worthless tea-leaves in a manner so indignantly and persistently exposed by Mr. Horniman.

Dr. Edward Smith, we are pleased to say, does not revel in pictures of horrors in connection with our daily nourishment. He goes very carefully through animal and vegetable foods, including in the first of those sections the horse and the ass; but after a minute examination of prospects, and a series of abstract arguments, he concludes that these animals are not destined to become popular as articles of diet. There are treatises also on tea, coffee, chicory, etc.; alcohols (the best part of the book); water, and atmospheric air, which last seems to have been rather ostentatiously dragged into the *menu*.

The scientific feature of the book is the elaborateness of some series of experiments as to the relative rapidity of respiration and pulsation, and the exhalation of carbonic acid gas at various periods of the day and under various circumstances, in order to show the physiological effects of certain foods. The result of applying such experiments to the system after doses of our usual spirituous-liquors seems to be curious. The author thus sums it up:—

"Thus, on a review of the experiments with moderate or small doses of these strong alcohols properly diluted and taken on an empty stomach, it is shown that the vital actions are generally increased with pure spirits of wine and rum, whilst they are lessened with brandy, and greatly lessened with gin. Whisky varied more than the other alcohols, but generally its tendency was to lessen vital actions. But it is useful to repeat the observation, that there is much greater disturbing influence excited by these agents than by ordinary foods, and there was not that regular progression of increase or decrease usually observed with other agents. This extended even to the rate of pulsation and respiration."

Dr. Smith's work is scarcely such a popular style of reading as we might have expected. The lectures of Dr. Lankester and Dr. Letheby have both been more humorously presented. The diagrams in the present work are fearfully tortuous in appearance, and the light reading seems to be

pitched into the rest somewhat jerkily. The author seems to look with a kind eye on tea, but not quite so favourably on alcoholic beverages, though in regard to the latter he is unusually undecided. Tobacco he ignores altogether. Among other curiosities of information which are contained in this work, there are some cooking receipts from the manuscript of our King Richard the Second's head cook. With a couple of specimens of these we will conclude our notice. The first is for frumity, frumetye, furmenty, or how ever the reader may be pleased to term it. This was once a popular English dish at harvest homes and such-like rural festivals, and is not altogether unknown now we believe:—

"Nym (take) cleve Wete and bray it in a mortar wel that the hol (hulls) gon al of & sethe yt til it breste, and nym yt up and lat it Ke (cool), and nym fayre fresh broth and Swete Mylk of Almandys or Swe Mylk of Kyno & temper yt al, and nym the yolkys of cyryn (eggs); boy it a lityl, and set yt ad on and Messe yt forthe wyth fat Venyson & fre Moton."

The other is a salad:—

"Take Psel, Sawge, garlice, chiholi, oynons, leek, borage, myn't poned fenel, and ton tressis (cresses), rew, rosemarye, purslarye, lauc, an waisehe hem elene, pik hem, pluk he small wip phu (thinc) band an myng hem wel with rawe oile, lay on vynegr and salt, and sue it forth."

THE DECLINE AND FALL OF THE BRITISH EMPIRE.*

THERE is a very favourite subject for discussion in young men's debating societies touching the prospects which this country possesses of retaining its prestige and position as long as the world endureth. When such a debate is on Lord Macaulay's New Zealander is pretty sure to turn upon the ruins of London-bridge, and it will be somewhat curious if Goldsmith's "Deserted Village" philosophy should be unnoticed.

"Ill fares the land to hastening ills a prey,
When wealth accumulates and men decay,"

Is a somewhat safe axiom, but the weakness of the proposition lies in the unproved assumption which lingers in the couplet that the two conditions therein referred to are necessarily coincident. Poetical and sentimental conclusions, however, are somewhat dangerous and often indefinite, but of late years the certainty of Great Britain's ultimate fall has been demonstrated mathematically by a series of arguments based on the probable duration of our coalfields. We have, in this book of Mr. Leifchild's, a well-digested and authoritative analysis of the economy of our coal commerce. To those who wish to be acquainted with our national resources we recommend this volume. It contains several articles which have been contributed at different times to the *Edinburgh Review*. One is on the consumption and cost of coal, another on the coalfields of North America and a third on fatal accidents in coal mines.

Mr. Leifchild's conclusions are depressing enough to purely patriotic hearts. They convey an impression somewhat similar to that which was suffered by certain victims of the Inquisition who found themselves in dungeons the walls of which they saw gradually but surely closing in upon them. We are told—

"No prospect of a natural substitute for coal dawns upon us at present. That sun whose beams shone upon the primal vegetation and originated coal shines upon all alike—the good and bad, the near and the remote; but the coal it helped to form is only locally stored. If we turn to peat, there are immense and readily accessible deposits of that useful substance, and peat-compressing machines are being perfected and vaunted. But it will never, for other reasons besides cost, extensively supply the place of coal. Nature gives us nothing like good coal; science holds out no hope of anything like it; and the combinations and decompositions of chemistry are at present in this direction only vaporous and vague."

"It is melancholy to contemplate a necessary importation of coal to a country which by its possession and utilisation has dominated the manufacturing world. It will be indeed a kind of moral retribution when we, the great and prodigal exporters of coal, or rather our less fortunate descendants, shall come to beg abroad for the mineral we have for a century been sending away. We have had coal enough and to spare, but we have squandered our inheritance, and alas! may be severely punished."

* "Foods." By EDWARD SMITH, M.D. LL.B., F.R.S. London: H. S. King and Co.

* "Coal at Home and Abroad." By J. R. LEIFCHILD, M.A. London: Longmans, Green, and Co.

Considering that as coals become scarcer in this country, the resources of other lands will begin to be worked, it is very doubtful whether we shall be able to retain our commercial supremacy for more than another century or two, if even for so long as that.

What ultimate chance of equal competition have we, when we consider that the estimate of our available coal fields is 5,400 square miles, while those of North America are 200,000 square miles? At the present time Great Britain produces more than half of the coal consumed all over the world, although, as Mr. Leifchild says, our fields are but a speck compared with those of other parts of the world. Asia is far richer in coal than America even. In China alone it has been estimated there are not less than 400,000 square miles. But do not these facts, taken in conjunction, prove that British power and British commerce have been established rather by Anglo-Saxon energy than by any mere luck? And, if so, there is at least some reason to hope that our posterity will find a path to rise in, even when our coal supplies shall fail.

We wish to make one other interesting extract from Mr. Leifchild's book, which, standing by itself, presents some interesting food for contemplation in connection with the wonderful theories of stored-up force which have dawned upon us within the past twenty years:—

"Each acre of a coal seam, four feet in thickness, and yielding one cord net of pure coal, is equivalent to about 5000 tons, and possesses, therefore, a reserve of mechanical strength in its fuel equal to the labour of more than 1600 men. Each square mile of one such single coal-bed contains 3,000,000 tons of fuel, equivalent to 1,000,000 of men labouring through twenty years of their ripe strength. Assuming, for calculation, that 10,000,000 of tons, out of the annual produce of British coal mines, are applied to the production of mechanical power, then England annually summons to her aid the equivalent of 3,300,000 fresh men pledged to exert their fullest strength through twenty years. Reducing this to one year, we find that England's actual annual expenditure of power, generated by coal, is represented by that of 66,000,000 of able-bodied labourers. This is a representation of what really exists in another form; but if we proceed so far as to convert the entire latent strength resident in the whole annual produce of our coal mines into its equivalent in human labour, then, by the same process of calculation, we shall find it to be more than the labour of 400,000,000 of strong men, or more than double the number of adult males now upon the globe.

"An element in the above calculation is one of the most humiliating comparisons that can be drawn between human and mechanical power. If we estimate a lifetime of hard human work at twenty years, giving to each year 300 working days, then we have for a man's total dynamic force 6000 days. In coal this is represented by three tons; so that a man may stand at his own door while an ordinary quantity of coal is being delivered, and say to himself: 'There, in that waggon, lies the mineral representative of my whole working life's strength.'"

THE STUDY OF THE PHARMACOPŒIA.*

DR. HANDSEL GRIFFITHS has republished in a small volume a series of notes on pharmacopœial preparations which have already appeared in a medical contemporary, and which the author tells us were originally compiled for his own pupils. A good part of the book is merely a reproduction of pharmacopœia processes, the description being frequently somewhat differently worded. Classes of preparations, such as infusions, mixtures, pills, &c., are presented in tabulated form, and are consequently so much the more confusing to the student, and far less likely to aid him in getting anything like a thorough acquaintance with the Pharmacopœia than if he plodded carefully through the preparations one by one. We are not unaware of the advantage of classified tables in order to show the variations in strength, or for other purposes. But these are of little or no use, unless compiled by the student himself, and as the task is by no means a difficult one to any one with a pharmacopœia and a little patience, we cannot consider that in this respect Dr. Griffiths' work "supplies a long-felt need." One of these tables (liniments, page 33) is slightly amusing, on account of an explanatory remark which the author has appended. There are seven liniments, and the classification shows at a glance their special and common ingredients. The recurrence of certain ingredients causes Dr. Griffiths to add "It will be noticed that the first five of these contain an oil, the

next five rectified spirit, and the last five camphor." The utmost arithmetical ingenuity could not obtain that result from seven specimens. In other parts of the book the notes are much more useful. In describing the chemical processes the *rationales* are generally given, and the common names for pharmacopœia preparations are in a number of cases introduced. We also find occasionally pharmacopœial hints worth knowing. But the attempt is not worked out with sufficient care and fulness to justify us in recommending it as a really valuable students' handbook. A degree of carelessness is also apparent in the spelling of many of the pharmaceutical names, as for example—*potassie* (page 40), *mixture* (page 52), *myristia* (page 56), *taraxici* (page 67), *creosoti* (page 71), *rhædos* (page 68), *rhæaddos* (page 70), and many others. We hope the author will give the care to a second edition which might very advantageously have been bestowed upon the proof-sheets of the first.

BLACKENING OF BUILDING STONE.—The green or dark-coloured spots which appear on the surface of light-coloured stone fronts, that have been erected for some time, and thus greatly disfigure them, consist, according to Dr. Frühling, of lichens which are very difficult to remove. Their formation may be prevented by a coat of potassie sulphide (sulphide of potassium) applied every few years. Leitzmann has found that washing the stone with hydrochloric acid will protect them five or six years.

THE VIRTUES OF WHISKEY.—The following curious extract from Hollinshed's *Chronicles*, 1577, will be of interest to the advocates of whiskey as a therapeutical agent of great power:—"There is used an ordinary drinke of *aqua vitæ*, so qualified in the making that it dryeth more and inflameth lesse than other hote confections. One Theoricus (*Episc. Hermenensis juxta Bononiam*) wrote a proper treatyse of *Aqua Vitæ*, wherein he prayseth it to the ninth degree. He distinguisheth three sortes thereof—*simplex*, *composita*, and *perfectissima*. . . . *Beving moderately taken*, sayeth he, it sloweth age; it strengtheneth youthe; it helpeth digestion; it cutteth fleume; it abandoneth melancholie; it reliseth the harte; it lighteneth the mynd; it quieketh the spirites; it cureth the hydropsie; it healeth the strangury; it pouneeth the stone; it repelleth grauel; it puffeth awaie ventositie; it kepyth and preserveth the hed from whyrling—the eyes from dazelyng—the tongue from lispynge—the monthe from snafflyng—the teethe from chattering—the throte from ratlyng—the weasan from stiefling—the stomache from wamblyng—the harte from swellynge—the bellie from wirtelyng—the guts from rumblyng—the hands from shiueryng—the sinowes from shrinkynge—the veynes from crumpling—the bones from akynge—the marrow from soaking. . . . *And trulie it is a souveraigne liquor, if it be orderlie taken.*"—*Brit. Med. Jour.*

VERY GOOD BUTTER.—Very good butter, it is stated, is prepared now by a butter manufactory at New York according to the following process:—Agents are employed to visit slaughter-houses, and buy up all the beef suet. This is carted to the factory and cleansed. Then it is put into meat choppers and mined fine. It is afterwards placed in a boiler with as much water in bulk as itself. A steam pipe is introduced among the particles of suet, and they are melted. The refuse of the membrane goes to the bottom of the water, the oily substance floats, and is removed. This consists of butter matter and stearine. A temperature of 80 degrees melts the former, and leaves the stearine at the bottom. The butter matter or cream is drawn off; about 13 per cent. of fresh milk is added and the necessary salt, and the whole is churned for 10 or 15 minutes. The result is Orange county butter, at about one-half the usual cost. The stearine is sold at 12c. a pound to the candle-maker, and the refuse at 7c. a pound to the manufacturer of food for cattle. A company with a capital of 500,000 dollars has been organized for the manufacture of butter by this method, and it is expected that the dividends will amount to 100 per cent. In the meantime a chemist in France is reported to have made milk from grass, but as the milk thus made is much more costly than old-fashioned milk, his discovery is not likely to be so profitable as that of the butter manufacturers.—*The Pall Mall Gazette.*

* "Notes on the Pharmacopœia." By W. HANDSEL GRIFFITHS, Ph.D., London: Ballière, Cox, and Tindal.



GRADUATED MEDICINE SPOONS.

THIS is a striking, simple, and useful novelty. As shown in the engraving it is graduated for tea, dessert, or

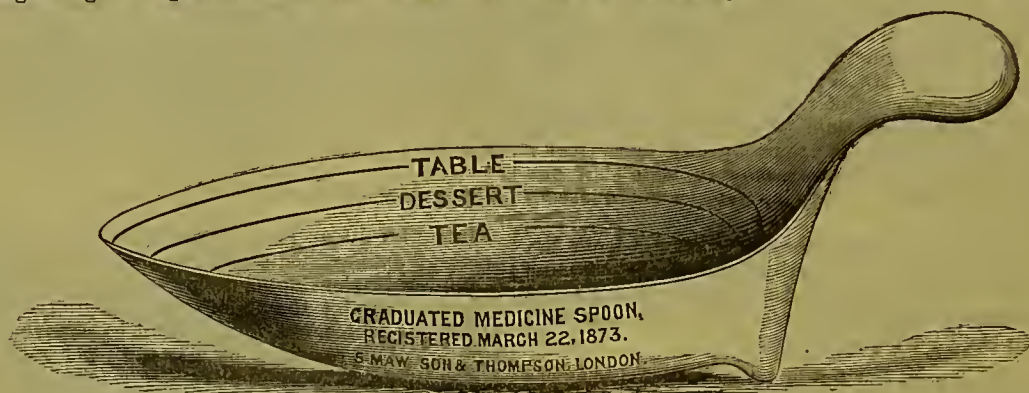


table-spoonfuls. It is made of porcelain, and one of its special features is that it is provided with feet so that it will stand on a table. A particular advantage of these spoons is that they are most readily cleaned after using them for oils or other viscous medicines. They are manufactured and sold by Messrs. Maw, Son, and Thompson.

"SPECIALITÉ" SHERRY.

A SAMPLE of an excellent wine at a very moderate price has been forwarded to us by Messrs. Felloe and Sons, of Conduit-street. They call it the "Specialité" Sherry, and offer it especially as a valuable adjunct to medical treatment. This wine is a particularly wholesome one. It has a smooth, dry flavour, and is remarkably free from the heat and acidity so usually found in all but the very finest sheries. Its percentage of alcohol is a little over 16 per cent. We are quite confident that, for a wholesome stimulant, this sherry can hardly be surpassed.

TREBLE'S "PRETTY LITTLE SHOW CASES."

MR. TREBLE has introduced, at specially low prices, a series of "pretty little show cases" for the chemist's counter. The engraving is of one of the smallest, and



others will be found illustrated in an advertisement. These cases are all finished with the perfectness and elegance which always characterize Mr. Treble's workmanship.

PERFUMERY.

MESSRS. MAW, SON, AND THOMPSON have added to their perfumery stock, two scents which are sure to become popu-

lar. The first, "Knitted Sweets" is the most practical entitled perfume we have met with for a long time. A happy or suggestive nomination could hardly be conceived. A couplet from Lord Lytton completes the elegance of label. The other scent is called the "Calendar Bouquet" and presents on the label a complete almanac for 1873. Perfumes have each a character of its own, but both rich and refreshing.

MAW'S IMPERISHABLE NAIL BRUSH.

THE india-rubber tooth-brushes are well known and highly valued by persons with tender gums. Messrs. Maw, Son, and Thompson, have now adapted the same material into nail brushes. The whole of the brush is made of india-rubber, back and front, and it seems to be a material excellently suited to the purpose. Brushes thus made are better for cleaning purposes than those made with bristles; they are much more enduring, and where the flesh round the nails is tender they will be thoroughly appreciated.

MAYNARD'S GRADUATED TUBE DROP BOTTLE.

A VERY useful little bottle, which will be found especially valuable for dispensing purposes, has been brought out by Mr. Maynard, and is now sold through the sundry houses. It will be found illustrated among our advertisements. The tube passes into a bottle and forms a stopper. This tube also provided with a stopper. At its lower end it is graduated to drops and drachms. By pushing the tube in or out of the liquid, the latter quickly rises, and can then be measured exactly. As dispensing bottles for acids, powerful poisons, and strong smelling medicines, for which it is desirable to keep a special measure, these bottles will be found extremely useful.

EFFECT OF SULPHUR WATER ON IRON PIPES.—Dr. Priwoznik, in *Dingler's Journal*, says: "It appears that when the iron mains conveying the mineral water from the source near Hainburg, Austria, were taken up after having been for more than a dozen years underground, the iron thereof had been strongly acted upon, as exhibited by the difference in structure upon the fracture. On being analyzed the author found the interior layer to consist, 100 parts, of: hydrated oxide of iron $[(Fe^{2+})_2O_3(OH)_2]$, 81.0; free sulphur, 12.29; sulphuret of iron, 4.48; hygroscope water, 0.57; nickel, cobalt, magnesia, silica, traces of carbon, and chlorides of ammonium and sodium, 1.58. The second layer was found to contain only 79.2 per cent. iron, but no sulphuret or excess of carbon was discovered, while the third outermost layer was almost pure cast iron."

PHARMACEUTICAL COUNCIL.

THE Monthly Meeting was held on July 2nd, Mr. T. H. HILLS, President. The other members of Council present were Messrs. Bottle (Vice-President), Baynes, Betty, Brown, Greenish, Hampson, Mackay, Owen, Radley, Robbins, Sandford, Savage, Schacht, Shaw, and Urwick.

THE INAUGURAL ADDRESS.

The SECRETARY read a letter from Mr. R. Reynolds, Leeds, declining the honour offered him of delivering the inaugural Address in October next. Mr. Reynolds stated that the state of his health would not permit him to undertake it.

On the motion of Mr. MACKAY it was then resolved unanimously to ask Mr. Sandford to fulfil the duty.

On the motion of Mr. MACKAY, supported by Mr. BROWN and Mr. BOTTLE, and opposed by Mr. OWEN, it was resolved to discontinue the employment of a collector of subscriptions in London.

The election of members and other formal business having been transacted, the Parliamentary Committee's Report was received and adopted.

It contained particulars of some of the cases which had been submitted to the Solicitor, and which were still under consideration. In the case of a memorial which had been sent from a provincial society, giving information of infringements of the Pharmacy Act, 1868, the Committee recommended that each of the parties offending should receive a communication from the Registrar before any legal proceedings were taken.

In another case, where a prescription containing landanum had been dispensed at the shop of a person not on the register, the compound, when submitted to an analysis, was found to contain no preparation of opium whatever.

THE SCHOOL OF PHARMACY.

The Library, Museum, and Laboratory Committee brought up their Report as to the educational arrangements of the Society, and proposed to make the following modifications:—

‘That the School of Pharmacy be no longer conducted under the immediate direction of the Council, or at the actual cost of the Society, but that in future three Professors shall be appointed annually by the Council, to be led respectively:—

- ‘The Professor of Chemistry and Pharmacy;
- ‘The Professor of Botany and Materia Medica;
- ‘The Professor of Practical Chemistry.

The endowment of each Professorship shall be £100 per annum.

‘It shall be the duty of the Professor of Chemistry and Pharmacy to deliver a course of sixty lectures from the beginning of October to the end of February, and a second course of sixty lectures from the beginning of March to the end of July, on three mornings of each week.

‘It shall be the duty of the Professor of Botany and Materia Medica to deliver a course of forty lectures from the beginning of October to the end of February, and a second course of forty lectures from the beginning of March to the end of July, on two mornings of each week. He shall, in addition, deliver a course of about twenty lectures on Practical Botany in the gardens of the Royal Botanic Society, from the middle of May to the end of July.

The Professors shall be allowed the use of the Lecture-rooms of the Society free of charge: gas and fuel necessary for lighting and warming the room shall be provided by the Society, but all other expenses for assistants and materials required for carrying out the courses of lectures shall be paid by the Professors.

The Professors shall (without fee) admit the holders of the Jacob Bell Memorial Scholarships to the lectures.

The fees for each course of lectures on Chemistry and Pharmacy shall be two guineas, but that a student entering for two courses shall be admitted to both on payment of one guinea, or a perpetual pupil shall pay four guineas.

‘That the fees for each course of lectures on Botany and Materia Medica shall be one guinea and a half, or two guineas and a half for the two courses. For the course of lectures on Practical Botany, one guinea. But a student entering for either of the first-named courses shall be entitled to attend the lectures on Practical Botany on payment of two guineas at the time of entering, or perpetual admission shall be granted for four guineas.

‘The Professors shall receive and appropriate all fees.

‘The Professor of Practical Chemistry shall have free use of the Laboratory and plant, and surrender them in good condition, fair wear and tear excepted, at the termination of his appointment.

‘The Professor shall receive and appropriate all fees, and pay all expenses, including gas and fuel. The fees to be on the same scale as is charged at present.

‘He shall admit the Bell scholars to the Laboratory, and instruct them annually without fee, but the sum of five pounds shall be paid to the Professor for each scholar in consideration of the materials used.

‘In order to retain authority over the lectures and laboratory, the Library, Museum, and Laboratory Committee shall, from time to time, visit and report to the Council on the general conduct of the school. These visits may be made by the members of the Committee individually as well as by the Committee collectively.

‘It is not intended that the Committee shall interfere with the arrangements, the object of their inspection being simply to be assured, from time to time, that the teaching is continued in a manner conducive to the advancement of Pharmacy, and consequently satisfactory to the Council.’

Before the adoption of these suggestions was moved, Mr. SCHACHT entered an earnest protest against the policy of deciding so momentous a question without more general discussion. He regarded the scheme as involving a very large principle. The object seemed to be the entire separation of the Society from the province of education, thus giving up what had been their principle for thirty-seven years. This would be a death blow to the hope of the provinces, for what was discontinued as a principle in London could never be urged for the country.

Mr. MACKAY and Mr. BETY advocated the new propositions, and the President remarked that the Society was not in this giving up education entirely, since they intended to endow the professorships. They would take all the responsibility as hitherto except in regard to the commercial aspect of the subject.

Mr. URWICK thought the course now proposed would tend to further education, as the professors would have the strongest interest in making their courses attractive and valuable.

Mr. SANDFORD then formally moved the adoption of the proposal. He had for a long time considered it an anomaly that they should be both an educating and an examining body. When the Society was first established, there was no public school of pharmacy in existence, and it was therefore necessary to found one, and nurse it until it should be able to support itself. He believed that time had now arrived; at any rate with the assistance which they still proposed to give, for he thought it quite right and proper that the Society, although not an educating body should still have professors attached to the Institution. He did not agree with the idea that, because they gave up teaching they would be unable to assist education in the country. On the contrary, he thought they would be all the better able to assist those in the country who, like Mr. Schacht, Mr. Sutton, Mr. Atherton, and others, were doing their best to promote pharmaceutical education, as they would have more means at their disposal for so doing. With regard to the lectures, he thought having two courses of five months each would be a great improvement, as it would enable many more young men to attend. There were great numbers who could give five months to study, but who would be unable to devote so long a time as ten months. As had been already remarked also, the professors would be thrown on their own resources and thus have great inducements to make their lectures interesting and profitable, and he hoped more students would be attracted.

Mr. MACKAY said he seconded the motion with a considerable amount of satisfaction, and, in doing so, wished to disabuse Mr. Schacht's mind of the belief that in agree-

ing to it there was the least idea of, in any way, cramping the assistance given to any provincial town in connection with pharmaceutical education; in his belief the prevalent feeling was quite of an opposite character. They were not entirely disconnecting themselves with education, because the endowment of £100 per annum to each of the professors was a considerable item, and the use of the rooms and the laboratory would also be given them; besides which, the Committee were still, from time to time, to inspect the arrangements, and see that everything was going on satisfactorily. He thought the provinces generally might with great advantage follow the example set them, and he spoke more positively, because of the experience of the Society in Edinburgh. Having now a place of meeting there, with specimens, and a library, it was found that a very great number of young men availed themselves of these advantages, many more in fact than was at all anticipated. They were in hopes that the same thing would continue, and he was more and more convinced, in his own mind, that if those connected with pharmacy, throughout the country, would unite and provide a place of meeting, and engage, if possible, some one able and willing to give instruction, and form something like a library and museum, the Council would be very much wanting in their duty if they did not liberally assist such endeavours. He should be the very last to propose such an alteration if it were not with the idea that it would tend to open the door wider for provincial education, rather than to close it.

Mr. SCHACHT said that he felt bound to move an amendment, not that he meant to oppose the principle or detail of the matter, for he had not really considered it, but simply because he wanted a little more time to be given before it was decided upon. He therefore begged to move, as an amendment,

"That the proposition of the committee be published in the *Pharmaceutical Journal*, and postponed for decision until the meeting of the next Council."

Mr. SAVAGE seconded the amendment, but only the mover and seconder voted for it, and the original motion being put, was carried.

Pharmacy.

OPIUM POISONING TREATED BY ATROPIA.

TWO cases of opium poisoning treated by atropia with success are reported by Dr. D. S. Bucklin, of Lansingburg, N. Y., in the *New York Medical Journal*, October, 1871. One of these is as follows:—"The patient had taken a pill containing one grain of opium and two of camphor, every second, instead of every fourth hour, as directed, for an attack of dysentery, which occurred during convalescence from pleuropneumonia. About eight o'clock in the evening symptoms of narcotism came on, and increased in severity until one o'clock in the morning, when, notwithstanding all the instrumentalities we could devise had been employed, excepting electricity, which I could not use for want of an efficient instrument, critical collapse had ensued. The patient was wet and cold; pulse 140 per minute, and almost imperceptible at the wrist; respiration stertorous. Patient unable to swallow, and not susceptible of being roused by any means at our command. As a last resort, I concluded to make a trial of atropia. Ten minims (twenty drops) of Fleming's solution of atropia were poured into the mouth, and permitted to find their way towards the stomach, without any effort of the patient to swallow. The dose was repeated twice, with intervals of half an hour between them. After the third dose, and before the time for a fourth had arrived, decided dilatation of the pupils, with efflorescence of the skin, began to occur, and no more medicine was given. In an hour more the efflorescence covered the surface generally, and the dilatation was to the fullest extent. From this time the improvement was steady, and in four hours the patient began to converse, and all symptoms of dangerous narcotism had disappeared. The dilatation of the pupils proved somewhat troublesome, nearly a week elapsing before it entirely disappeared."

MOFFIT ON COD-LIVER OIL AND IRON.

The following formula for a cod-liver oil emulsion containing iron is given by W. G. Moffit (*American Journal Pharm.*, April, 1873). A concentrated solution of pyrophosphate of iron is used, which is said to keep very well, and the mixture is reported of favourably by those who have used it in practice.

R. Pulv. acacie	3j.
Pulv. sacch. alb.	3ss.
Aque	ʒiv.
Alcohol	ʒj.
Ol. morrhue	ʒv.
Sol. ferri pyrophosph.	gtt. co.
Ol. amygd. amar	gtt. v.
M. ft. emulsio.	

ADMINISTRATION OF PERCHLORIDE OF IRON.

Dr. Herbert L. Snow writing to the *British Medical Journal* on this subject, states that he has found the addition of small quantity of glycerine (about half an ounce to an eight ounce mixture), entirely obviate the unpleasant metallic taste which remains so long in the mouth after taking the tincture of perchloride of iron.

BRETET AND OTHERS ON IODISED SYRUP OF TAR.

A memoir has recently been submitted to the Paris Society of Pharmacy (*Journ. Pharm. et Chim.*, 4th series, vol. xvi. p. 466), in which the author proposes to utilise an observation of Lefort, that tar-water, suitably prepared, dissolves in the cold a limited quantity of iodine, which combines or associates with the fixed or volatile principles contained in the tar-water in such a manner as not to be detected by the usual tests for free iodine. The tar-water is to be prepared by Lefort's process with 100 grammes of semi-liquid tar to a litre of water at 167° Fahr. To the liquid, cooled and filtered, 1,800 grammes per litre of water is added, left to dissolve without heat, and then the whole is strained. To a kilogramme of this syrup one gramme of alcoholic solution of iodine is gradually added, shaking after each addition well absorbed. The syrup, at first a deep brown, is after a few days but slightly darker than ordinary syrup of tar; it does not colour starch, has no taste of iodine, and is easily preserved. The Commission appointed to report upon the subject suggested a variation of this process by dividing rapidly and carefully one gramme of iodine with 600 grammes of powdered sugar, incorporating 33 grammes of previously washed Norwegian tar, placing the mixture in a wide-mouthed bottle with 400 grammes of distilled water at 176° Fahr., agitating the whole until cool, and filtering. The filtration is slow, but can be made in the open air without fear of loss of iodine. The therapeutic properties of a syrup of iodised syrup of tar have not been sufficiently investigated to allow at present a decisive opinion to be expressed respecting them.

SHUTTLEWORTH ON THE RESTORATION OF CHLOROFORM INJURED BY AGE.

Where changes are induced in chloroform by time, light, moisture, or atmospheric pressure, E. B. Shuttleworth is of opinion (*Canadian Pharm. Journ.* vol. vi. p. 345), that by the most injurious products of decomposition are chlorine and hydrochloric acid. These products may often be found in an aqueous layer floating on the top of imperfectly rectified chloroform which has been kept some time. The incomplete removal of sulphuric acid which has been used in rectification also leads to the same change. For the restoration of chloroform that has thus become spoiled, he recommends that it be shaken with a dilute solution of hyposulphite of soda, should then be separated from the supernatant liquid and again washed; this time with pure water. After being separated, the chloroform should be passed through filtering paper to rid it from traces of moisture, when it will be found much improved and comparatively sweet.

ABNORMAL BEHAVIOUR OF ALBUMINOUS URINE UNDER THE USUAL TESTS.

Dr. Brown-Séquard (*Archives of Scientific and Practical Medicine*) points out a possible source of error in applying the usual tests for albumen in the urine. It is a well-known fact that boiling alone is not always sufficient to cause coagulation of albumen, even when the reaction of the urine is decidedly acid. In such cases, however, the subsequent addition of nitric acid, with a renewed application of heat



PROFESSIONAL CHARGES.

AT the Court of Common Pleas, on June 28th, in the case of Harnett v. the Tyne Steam Shipping Company, some interesting points respecting a dentist's business were elucidated. Mr. M'Intyre, Q.C., and R. E. Turner appeared for the plaintiffs; and Mr. Hawkins, Q.C., Mr. Herschell, Q.C., and Mr. Harrison for the defendants.

The plaintiff, in his evidence, said that in 1862 he was one of the committee at the great Exhibition upon surgical appliances. In 1838 he commenced business in Grange-road, Bermondsey, as a dentist, and afterwards occupied premises in Bloomsbury and Golden-square. From 1854 to 1866 he was in Panton-square, and during this time he did business to the extent of £2,000 or £3,000 a year. In 1870 he went to Newcastle, and two years later he arranged with an agent of the defendants for the shipment of his goods to London. The stock consisted of 70,000 or 80,000 teeth, gold plate, forceps, &c. The goods were shipped and landed in London, but when the plaintiff applied for their delivery he found that two packages containing "dental stock," valued at £6,303 11s. 6d., were missing, and this sum was now claimed from the defendants. Among the lost things was a biographical manuscript embracing many valuable recipes, for one of which he had paid fifty guineas. He valued the manuscript at £500.—Cross-examined by Mr. Hawkins: Among the teeth lost there were some natural teeth, 250 upper sets and 250 lower sets. He got these natural teeth from hospitals and various other sources.—

When you pull a tooth out you put it into somebody else's head? No; John Hunter used to do it in his time.—That is in your biographical work? You will find it there—How long did that practice of John Hunter's continue of taking teeth out of one head and putting them into another? It continued until he transferred the disease from one person to another.—The witness did not buy the natural teeth at 3d. a dozen. They were sold in sets. He would have now to pay 30s. a set. He had only charged the company 25s. a set. He did not think that anybody had a more valuable stock than he had. Natural teeth had gone out of fashion in England since mineral teeth came in, but they were used in Paris. He had some means, he lived on a very slight income from the funds, and on the money for which he had sold goods. The income from the funds was £14 or £15 a year, and he received it from the Court of Chancery.—Mr. Hawkins: That is an income from what they call the "corpus" in Chancery; a "corpus" that has no teeth—witness proceeded to explain his business transactions, and stated that he went to Canada and the United States to learn to make mineral teeth, which was a great secret then, and was in fact a secret now.—Did you pick up any natural teeth there? You know you would want them for all ages, and sizes, and nations, black and white? He did not go there to pick up the Yankee's natural teeth. No one saw the things that were packed in the two missing cases; but his stock was seen after he left Panton-square by Mr. Mitchell, Mr. Jones, and by witness's brother. When he left Panton-square he had 350,000 teeth, of which upwards of 200,000 were unfinished. He had 200,000 teeth now.—That you will swear? There they are; go and count them. No, I won't do that; did you count them? No.—Then it is all imagination, and yours is a lively one. I am glad you appreciate it.—Mr. Hawkins: I do; and you put that in your biography. These unfinished teeth were in the state in which they came from the hospital floor? There, you are running your head against the natural teeth.—Oh, no; I won't run my head against your natural teeth. How do you know the number? From recollection.—He destroyed all his books and papers in 1868. The two lost packages contained the best part of his stock. His niece

will generally produce a precipitate. Dr. Brown-Séquard states that in several cases that have come under his observation, he has demonstrated the presence of albumen by adding nitric acid and then applying heat, but has failed to obtain a precipitate by heat alone, or by nitric acid (and heat) after the specimen had been once boiled. There must be, therefore, a modification of albumen, which, so far from being coagulated, actually loses its coagulability by boiling.

DETECTION OF HYDROCHLORIC ACID IN CASES OF POISONING.

J. Bonis proposes, in the *Comptes Rendus*, to heat the suspected liquid from the stomach, previously strained, with potassium chlorate, in presence of a fragment of thin gold foil. The acid, if present, will set free chlorine from the chlorate, which will attack the gold. The presence of this metal in the solution may be detected by stannous chloride. Bonis has proved that alkali-chlorides, even in presence of the organic acids of the gastric juice, have no action on either potassium, chlorate, or nitrate.

WILLIAMS ON THE RED AND GREEN IODIDES OF MERCURY.

F. R. Williams states (*Pharmacist*, May, 1873) that, having by accident obtained a mixture of the red and green iodides of mercury, which the ordinary process of washing with alcohol failed to separate, he was induced to boil the refractory mixture with a strong solution of chloride of sodium, and succeeded admirably in removing the red compound. Since that time he has never employed alcohol, but has always washed the green iodide with a hot solution of chloride of sodium for purification, and has found the process expeditious, convenient, and efficient.

In the preparation of the red iodide, he takes advantage of the fact that that compound is only sparingly soluble in solution of chloride of ammonium, to avoid the use of a large proportion of the water usually employed. He takes

Corrosive sublimate	4 parts.
Iodide of potassium	5 "
Chloride of ammonium	2 "
Water	q. s.

The corrosive sublimate and chloride of ammonium, previously crushed separately, are dissolved together, with trituration, in three or four parts of water; the iodide of potassium is dissolved in five or six parts of water, and poured into the first solution. The heavy precipitate of red iodide subsides rapidly, and should be collected on a strong filter, washed thoroughly with water, and dried in the open air.

INDESTRUCTIBLE FILTERS.

For filtering strong alkaline solutions, which at once destroy paper and soon dissolve cotton and linen filters, it has been customary to employ a tuft of asbestos. There is, however, a much cleaner and neater material, not attacked perceptibly by acids or alkalies, nor very expensive, which is used in Bohemia for filters. This material is the well-known spun glass, which can be felted together and used like asbestos. It is said to filter rapidly and give a clean filtrate.

WILKS AND GERRARD ON RESINA COPAIBÆ.

Dr. Wilks, of Guy's Hospital, recently (*Lancet*, March 21, 1873) reported that he had successfully used the resin of copaiba, from which the pharmacopœial oleo-resin had been separated, as a diuretic, and found it to present a great advantage over the ordinary drug, in the absence of the odour which makes it very difficult for patients to take the oleo-resin. In doses of fifteen to twenty grains three or four times a day he has found the resin to possess marked diuretic properties. His former communication having induced numerous inquiries, Dr. Wilks now (*Lancet*, June 21) publishes the formula for its administration which has been advised by Mr. Gerrard, the late dispenser at the hospital.

Resin of Copaiba	3 drachms
Rectified Spirit	5 "
Spirit of Chloroform	1 "
Mucilage of Acacia	2 ounces
Water to make 12 ounces.	

An ounce (containing fifteen grains) to be taken three times a day. Dr. Wilks has also administered the resin in the form of pills, each containing five grains of the resin, three of which were taken three times a day.

lived with him all the time he was at Newcastle, but she never saw the goods. He packed them all himself, and wanted no assistance. He now occupied a small house at Hackney Wick, and his property was stored there. His niece still lived with him. There were eight gross of "Nervito," at 8s. a bottle, in one of the lost cases. It was much used by dentists for toothache.—Then what a cruel brute you must have been to keep more than 1,100 bottles of it lying idle!—He did not see that. The price charged was £280. If he had sold it he should have taken 20 per cent. off. He could not say what it cost making. It cost more than 2d. per bottle. It might be 1s. or 1s. 6d. There was the cost of bottles and labels. The cost might be 6d. a bottle. He could not say.

The Lord Chief Justice said that the MS. was described in the claim as a history of dentistry, with biographies of the principal dentists from 1800, but there was not a word about recipes.

Mr. McIntyre observed that a history of dentistry would include an account of the improvements in the art, and the recipes for those improvements.

By the Jury.—Mr. Mitchell and Mr. Jones had seen the goods since they had been packed, but no one saw them in Newcastle.

A Juryman.—Then the jury are of opinion that the plaintiff's evidence is not to be relied on unless corroborated by trustworthy evidence.

Mr. McIntyre said that he could produce other evidence.

The Lord Chief Justice.—But not as to the things being at Newcastle; that evidence not being forthcoming, I must say I agree with the jury entirely.

After a short discussion between the learned counsel as to how the case should end, it was arranged that a *stet processus* should be entered.

INFRINGEMENT OF TRADE MARK.—IMPORTANT TO THE SODA-WATER TRADE.

At the Shrewsbury Police-court, on July 2, Mr. Thomas Birch, landlord of the Globe Inn, and manufacturer of aerated waters, was summoned on a charge that he did, on Saturday, the 28th June, unlawfully sell one bottle of aerated waters, upon which bottle there appeared the trade mark of Mr. Richard Stone, manufacturer of aerated waters, Abbey Foregate, Shrewsbury, which trade mark was then wrongfully used without lawful authority. The facts of the case were admitted, and it was proved by the prosecution that notices had been posted to Mr. Birch. The defence was that there was no intention to defraud, as Mr. Birch had put his own labels on the bottles. This being the first case of the kind that had come before them, the magistrates imposed a mitigated fine of 10s. (the full penalty being £5), with costs.

THE LEAMINGTON WATERS.

At the Court of Chancery, on June 30th, before Vice-Chancellor Wickens, the case of Kinmond v. Daily was commenced. This was a bill for an injunction to restrain the defendant, James Crag Daily, from carrying on the manufacture of soda or other mineral or aerated waters or effervescing drinks under the style of "James C. Daily and Co.," or any other name or style only colourably differing from the plaintiff's. The plaintiff, James Crichton Kinmond, is a mineral and aerated water manufacturer, carrying on business in Kenilworth-street, Leamington. About twenty years previous to 1871, the plaintiff asserted that one Patrick Daily, an Irishman, established in Leamington, a manufactory for soda water and other mineral and effervescing drinks. He acquired a great reputation, not only in Leamington, but, it was said, in 300 other towns in various parts of the kingdom. This was the only soda water manufactory in Leamington, and his manufactures were known as "The Leamington." In 1871, Patrick Daily agreed to sell his business to the plaintiff for £2,000. The agreement was carried into effect by an indenture, by which Patrick Daily agreed not to be concerned or engaged in, or willingly consent in writing, to the manufacture of mineral or soda water under the name of James Daily and Co., or J. Daily and Co., or any colourable imitation thereof. It was further agreed that the plaintiff was to have the use of the said name by which Patrick Daily's manufactory was known. The defendant, James Crag Daily, was the brother of

Patrick Daily, and had formerly been employed by him. Latterly, however, he had been employed by the proprietors of the Cremorne Gardens, London, in the manufacture of effervescing drinks for their use. During that period he dropped the name of Daily and used that of Crag. Notwithstanding a warning from the plaintiff, he had set up in Leamington, in the same line of business as the plaintiff, under the style of J. C. Daily and Co. It was further alleged that the defendant had copied the plaintiff's labels, for the purpose of deception. The plaintiff therefore sought an injunction to restrain the defendant from carrying on business as aforesaid, and also from imitating his labels. It was urged on the plaintiff's behalf that, though the defendant had a right to trade in his own name, yet that, by adding "and Co." to it, he had brought himself within the class in which injunctions had been granted. Mr. Everitt addressed the Court on behalf of the defendant. He said that only six affidavits had been filed by him, and they were mainly for the purpose of verifying the different manufactures of aerated waters. Although the defendant has not had the opportunity of exhausting the trade, yet such exhibits as he had obtained showed clearly that the same shaped bottles, with labels of the same red colour, were used throughout the trade, the only difference being the names of the respective manufacturers. With regard to the charge of fraud against the defendant, it was quite unsupported. Although he might have been known as "James Crag," yet he was perfectly entitled to resume his real name of "James Crag Daily." That he was always desirous of distinguishing his manufacture from his brother's was evident from the labels on the corks of the bottles having on them "J. C. Daily." The learned counsel was proceeding with his argument, when the Vice-Chancellor suggested that the case should stand over until a case then before the Lord Justices had been decided. He referred to the appeal case of Fullwood v. Fullwood. This course was agreed to by all parties, and the case was accordingly adjourned. The Vice-Chancellor expected that Fullwood's case would be decided that week, but it has since been postponed until the first week in August.

Mr. J. P. Daily writes as follows to the *Leamington Courier* in reference to this case:—

"Sir,—One tale is generally good until another one is told; and as Mr. J. C. Kinmond, the plaintiff in the Chancery suit of Kinmond v. Daily, reported in the papers has had an opportunity of telling his tale, will you permit me, in simple honesty to myself, and in the spirit of fair play, which characterises the British Press, to explain my position; for, though my name has been dragged before the Vice-Chancellor, I am not represented before him, and have no other means of vindicating my character and explaining my position.

"It is indeed true that I sold to Mr. J. C. Kinmond, now of Kenilworth-street, my wholesale mineral water plant, stock and business, for the sum of £2,000, and I guaranteed that the trade should double itself the first year. It did so, under my gratuitous management, in the first seven months, and has since quadrupled. I expressly reserved to myself my retail and family trade, which I still carry on openly and publicly, and to a large extent.

"It is indeed true that I was christened James Patrick Daily, and from the age of nine months I have been more or less intimately connected with Leamington and its neighbourhood. For more than thirty-five years I have been known simply as James Daily. My father and my mother and all my relations have never written to me or spoken of me otherwise than as James."

"I have never been known as Patrick, and I had almost forgotten that addition to my baptismal cognomen, until I saw it in connection with this case.

"My father used James as a family patronymic, and hence my brothers, in addition to their other names, are likewise christened James. This I can neither help nor avoid.

"For more than six years I had not spoken to my brother, J. Crag Daily, until I was surprised and annoyed to find that he had arrived in Leamington with his furniture, family, and machinery, with the intention of commencing the business of soda water manufacturer. I felt that he was far more likely to injure me than Mr. Kinmond, or the other three makers in the neighbourhood, and have offered him funds to remove elsewhere, in order to avoid the suspicion of unfairness. He does not manufacture for me; nor have I

been in his house since he has been in Leamington, or supplied him with funds. My sister, who is a solicitor's widow, with large means, and his aunt, owner of thirty houses in London, have supplied him with capital. I have not lent, or given, or promised him directly or indirectly a single shilling, or any sum whatever. I have solemnly sworn an affidavit embodying these facts, and have supplied copies of it to the solicitors on both sides."



HOMŒOPATHIC PHARMACY.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—Some time ago, with your proverbial love of fair play, you urged upon chemists the necessity of giving to the sale of homœopathic medicines "as thorough and as conscientious attention as to the rest of their business," but we regret to say there are still among them some who have the reputation of being respectable, who can descend to acts which every right-minded man must condemn. Two examples will suffice to make clear to yourself, and to your readers, what is meant to be conveyed.

Case No. 1. A chemist in the west-end of London, who has a shop in a most commanding position and fitted up in good style, had recourse to the following expedient by which to make a few pence. He sold our homœopathic medicines, and was our agent; but not content with the very liberal profit which we allow, he must stoop to measures in the highest degree contemptible. He, with a great deal of ingenuity, took a knife and divided the paper cap which we put over the corks of our medicines, extracted the cork, substituted another (our cork being stamped with the name of the medicine in the bottle), brought the two edges of the cap into juxtaposition, and secured them by a dab of wax underneath, so that the bottle presented the appearance of the cap being intact to any but a most close observer. The next step in the process was to cut the name of the medicine that was required out of a list of names given in our prospectus, and stick it carefully over the name already existing there, and then sell it, knowing that the contents and the name did not agree—sell it in short for what it was not; thus had he treated some five or six medicines when in his case our attention was called to the practice by a lady who had purchased a bottle of *bryonia nig.*, which by the above device had been converted into *aconitum napellus*.

Case No. 2. This was an instance where the chemist had purchased some brown looking globules, and was in the habit of putting them into bottles with a cap over the cork bearing the words *genuine*, and these he was impudently selling as our preparation, and to mask this clumsy piece of imposition wrapped them up in one of the printed circulars which we are in the habit of supplying to our agents—and when asked, are these L. and R.'s preparations? replied, "O yes! I sell their medicines."

Now we are free to admit that these are happily exceptions to what we find to be the conduct of chemists generally; but it is, nevertheless, sad that there are in a body of educated and honourable men those who, for the sake of a few pence, sacrifice that which to a man of honour is so precious, viz., his conscientious sense of integrity; and such men not only tamper with their own reputation, but damage by these dishonest practices the reputation of others, and trifle with the sufferings of those who seek for remedial assistance from homœopathic therapeutic agents. We do not, and have not for some years solicited orders, or sent out a traveller; and the agents for our medicines are those in a great measure who have voluntarily taken up the agency, but whether solicited or unsolicited to become an agent for homœopathic medicines, whether believing or disbelieving in the curative power of homœopathic remedial agents, we venture to assert that every chemist who sells homœopathic medicines is bound

in honour to deal fairly and conscientiously with his trust, just as much as with any patent medicine. A chemist is free to take up an agency or not, but if he does take it up, he ought to deal fairly with the firm who thus trusts him. Sometimes a purchaser of homœopathic medicines is met with an endeavour to shake his faith in the new creed; or the medicine is handed to him with the sneering observation, "Do you believe in these things? or an attempt to sell them something else of their own in lieu of it. Now all this is very foolish, and never does any good, and we know for certain that, in some instances, persons who had a good account for other things, have ceased to deal with such chemists, because they or their servants could never go for a homœopathic medicine without some unpleasant observation being made. Those who believe in the new system are now numbered by hundreds of thousands; amongst its advocates and adherents are the most noble and the most wealthy, the literate and illiterate, and not a few who rank high in the scientific world—in a word, homœopathy is an established fact; and all it requires is fair play. Our advice to those chemists who have taken up the agency for these medicines is simply this, "Do as you would be done by;" attempt not that which you do not understand, let your homœopathic business be done through any respectable homœopathic chemist, and it will be mutually advantageous.

We send you proofs of the foregoing statements herewith. The bottles are just as they were obtained from those chemists whose names they bear, and conclude by adding, that if these practices continue we shall have no alternative left us but to publish the names of the chemists who thus tamper with homœopathic medicines, thereby injuring the cause of homœopathy, and the reputation of the firms who supply them with homœopathic medicines, expecting fair play.

We are, Sir,

Yours faithfully,

LEATH AND ROSS.

London, June 17th, 1873.

PROVINCIAL SENTIMENTS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I have no doubt that the great pressure on your space in last month's issue, caused by the report of the annual meeting, the special meeting, and the annual dinner of the Pharmaceutical Society, will explain the fact that you failed to notice, or at least to attempt to do justice to what was, undoubtedly, THE EVENT of the meeting. I allude to the masterly impeachment of the Council by Mr. Atkinson Pickering—an impeachment unanswered and unanswerable; an impeachment which is but the embodiment of the appeals and protests which month after month have appeared in your own columns; and which have been treated with contempt, and sneered at by the high-caste men as unworthy of notice, and as coming only from "those fellows, the obstructives."

Mr. Pickering's speech was characteristically rugged, blunt, unvarnished, and honest Yorkshire eloquence, the speech of a man who knew what he was saying, and meant to say it, undismayed by the frowns of officials or the attacks of claptrap. He unhesitatingly made the assertion, "The Pharmaceutical Society, I assure you, is not popular with the country members of the trade." And he then proceeded to tell them "the reason why." His opening sentence gave the key-note of his speech. "The report, financially, is a success—I feel that educationally, it is not so."

It would be impossible within a limited space to attempt the task of following in detail the various counts of the indictment. His complaint, a most important one, and one which no doubt will demand future attention, was of the extreme conciseness of the financial statement, of obscurity, want of clearness and detail with regard to the surplus income now in the Society's possession, of the waste of money by unproductive investment, of the failure of successful results at the lectures. It were but vain to attempt to do justice to his merciless exposure of the Society's iniquitous conduct in the matter of provincial education. He showed that

the Pharmaceutical Society is nothing if not an educational body; that education is in fact its *raison d'être*. The plain English of the charge is this: you have managed to get our money from us in subscriptions and fees in the name of education; but you have given us nothing for it in return. "Out of an income of £10,000 a-year I see the magnanimous sum of £10 granted towards furthering Provincial education." Like old Jack Falstaff's score—but one poor halfpenny worth of bread to a most intolerable quantity of sack. It is only possible to notice his exposure of the carelessness, supineness, and indifference manifested by the Society in winking at the illegal conduct and unfair competition of co-operative stores, as well as the total absence of any exertion "to secure for the trade the entire sale of those things on which it compels men to pass an examination—to secure pharmacy for pharmacists alone."

No doubt it must have been excessively annoying to the members of the Council to hear such a series of uncomplimentary statements; but they were the words of soberness and truth. It was not a mere sentimental grievance, not a mere excuse for an outing, nor a simple burst of "dogged perseverance" (whatever that may be), which could bring a man like Mr. Pickering away from his business in Hull, or a man like Mr. Reid from the "granite city" in the far North. Nothing but such a stern sense of duty to themselves and to the trade as (one of your contemporaries remarks) "betrays a state of mind, which obviously renders the subject deserving of earnest attention;" and the Council will be doing wrong if they think "to lay the flattering unction to their souls" that the facts are otherwise.

There are amongst the Council some good men, honourable and true to their trust; men of sound sense, and of good business habits—men who have not forgotten the object for which they were sent to Bloomsbury-square. These men will hardly need to be reminded that the trade generally would be better satisfied and more benefited by thoroughly carrying out the existing laws than by making new ones, which will prove burdensome and stumbling-blocks to their brethren. To these gentlemen (with Mr. Pickering's words, trumpet-like, still sounding in their ears) the suggestion may not be in vain—that they would do well to lay these words to their hearts; that they were words worthy of "not being lightly heard and soon forgotten;" that this speech has pointed to the rocks a-head—has shown the Scylla and Charybdis, has chalked out the proper course—and said in plain words, "This is the way, walk ye in it."

Yours truly,
NOBODY PARTICULAR.

A WORD TO THE WISE.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—Will you kindly allow me a corner of your journal to express my gratitude, in combination with that of several of my friends, to Mr. Joseph Ince and those gentlemen who have assisted him, for their valuable suggestions with respect to the "translation of prescriptions." The generous way in which these gentlemen have come forward, endeavouring to assist those of us who have either neglected their education, or who have been denied the opportunity earlier in life, entitle them at least to an acknowledgment of their kindness by us, to whom "gratuitous instruction" is such an invaluable boon. I trust now the example, which is worthy of imitation, has been set, it will be followed by others who have knowledge enough and to spare, and to whom the gratification afforded by imparting a little to their illiterate friends would be a sufficient compensation to them for their trouble, and prove far more satisfactory, than by hiding the many or few talents, which are entrusted to them, in a napkin.

Hoping those gentlemen may favour us with a continuance of their kindness,

I subscribe myself, Sir,
Yours obediently,
A GRATEFUL LEPER.

Dentistry.

ARTIFICIAL TEETH.

THE *Journal of Applied Science* gives the history of the first porcelain tooth manufactured in America. It seems that about the year 1833 there was a little store in Second-street, in Philadelphia, which was occupied by a man who dabbled a little in dentistry, and managed to eke out a living by mending watches, selling spectacles, &c. The education of the owner of the little shop was defective, and he wasted his means in investigations in order to discover a material which he might substitute for the fragile bone or costly ivory in the mouths of his customers. After squandering nearly all his superfluous funds, he was one evening closing his store, when a German came in, who was acquainted with the manner of making porcelain, and for twenty-five cents offered to instruct the repairer of dilapidated time-pieces in the art. While our embryo dentist was turning the matter in his mind, the thought flashed across his mind, "Why not make porcelain teeth?" Acting on the impulse, he paid the "quarter," was instructed in the mysteries of the process, and soon after turned out the first specimens of porcelain dentistry in the United States.

We gather from the same source that the revenue tax paid on artificial teeth in the United States exceeds a quarter of a million of dollars yearly. The constituents of artificial teeth are chiefly feldspar, silice, kaolin, and a little flux, which make the body and enamel, the various colours being imparted by metallic oxides. Making the gums of natural colour is a most important part of the process. The colour is imparted by the admixture of the colouring substance in the body of the gum before it is burned. The best qualities of crude feldspar come from the quarries in Delaware Co., Pennsylvania. It is quarried, brought to the factory in barrels, heated in a furnace, and the calcination is completed when it is thrown in water, beneath which it is ground and kept for two or three years, during which time a film rises upon the surface, emitting a perfume not pleasant to delicate noses. It is next dried, and after being mixed with the silice and kaolin to about the consistency of putty, is pressed into moulds, and takes the form of the block or single tooth; it is then placed upon clay "slides" and "biscuited," that is, heated to a degree which makes it hard enough for the workman to turn the edges of the tooth or block, and yet not sufficiently hard to become fused or vitrified. After the edges are trimmed off, they are dipped in a glass, and replaced upon the slides; are returned to the muffle, where they are again heated to about 4,000° F. When properly vitrified, they are taken out and annealed very slowly. When the teeth have been properly made, and all the essentials of strength and beauty have received due attention, they are as tough as stone, and as translucent as the finest Chinese porcelain, the feldspar of which, tradition says, is often kept in water for hundreds of years.

HOUSEHOLD REMEDIES.

HOW we often smile when red flannel is mentioned. Why not use white? The anodyne properties of the cochineal with which the flannel is covered will account for this. At present probably no cochineal is used in the dyeing process. Ink is no elegant preparation to apply to the skin in ring-worm, still the astringents, iron or tannin in the writing fluid are most efficacious in curing herpes. Charcoal is very useful in the diarrhoea of typhoid fever. For night sweats, as well as for other excessive perspirations, sage (*salvia off.*) is very serviceable. Horehound is an expectorant. Asthma is often greatly relieved by the application to the chest of a decoction of tobacco. Country people successfully use pumpkin seeds (*cucurbita pepo.*) in painful micturition and to destroy tapeworms. An only too well-known emenagogue is the common yarrow (*achillea millefolium*). Decoction of oak bark is a very good injection for the symptom leucorrhœa. Even the use of burnt sponge for scrofula has some good foundation, as sponges contain iodine. Sassafras thins the blood, is therefore good for

plethora. Medical men in different parts of the country have again called our attention to the efficacy of wild indigo (*baptisia tinctoria*) in tympanitis, from whatever cause. The intense occipital headache of albuminuria can be mitigated by the Indian hemp (*apocynum cannabinum*), a plant growing in almost every field. Larkspur seeds (*delphinium staphisagria*) will destroy lice and other vermin that prey upon the human body. The common elder flowers (*sambucus can.*) act signally in deficient perspiration, very useful in gastric fevers; this remedy is also highly recommended in Bright's disease. How soothing is a dry hot poultice made of hops in facial neuralgia. An infusion of chamomile is an appetizer, and a decoction will often cure the simple fevers of children. Mothers relieve their children's colic with catnep. Cloves stimulate the torpid bowels. Fennel or anise seeds are good for flatulency. Alum prevents excessive granulation, and also cures chilblains. We have no better remedy than borax for hoarseness. Rose leaves (contain tannin) are made use of in aphthous sore month. In chronic malarial toxæmia few remedies can compete with black ash bark (*fraxinus sambucifol*). Lobelia (*lobelia inflata*) relieves spasms of the glottis, and also as frequently tetanus as any other remedy we have at present at our command. Old people relieve their painful ulcers with stramonium leaves. Chronic constipation can be more effectually treated by those pleasant palatable deserts, tomatoes and American rhubarb, or pieplant, than by other remedies, while the costiveness of newborn infants can be overcome by a teaspoonful of molasses (not syrup), a remedy the children never object to taking. My friend, Professor George P. Andrews informed me that he had cured amenorrhœa (due to colds) with a decoction of pennyroyal (*hedeoma puleg.*) after other remedies had failed. So the pride weed (*erigeron canadense*) growing on the roadside can cure gonorrhœa. This list might be extended, but this is sufficient to show that a little knowledge of botany and of these household remedies is a great aid to the physician, especially when practising in the country. These remedial agents are especially useful in the diseases of children. Instead of ignoring them, it is better to inquire into their value; for our object must ever be to do all in our power to relieve suffering and heal disease.—*Dr. Carstens, in the Detroit Review of Medicine.*

Trade Memoranda.

Messrs. Hamilton and Galbraith have purchased the business of Mr. Peter Guthrie, of 111, Sauchiehall-street, Glasgow.

ANTIPPELLICULAIRE.—Mazet's Antipelluculaire is a handomely put up and well advertised French pomade for removing and preventing scurf. It is at the same time a very pleasant pomade to use.

Messrs. B. F. Lyon and Co., perfumers, of Doctors' Compoists, have already brought out an excellently-illustrated list of Christmas novelties in perfumery, which may be had from the various wholesale houses.

MESSRS. TOMPSON, BERRY, and Co., manufacturers of vinegar and British wines, Birmingham, have dissolved partnership and divided their business, Mr. Tompson taking the vinegar, and Mr. Berry the British wine department.

Messrs. Bristow, Edmonds, and Williams, wholesale and export perfumers and fancy soap makers, of 5, Bishopsgate Avenue, Camomile-street, have taken Mr. H. N. Tolton into partnership, and have changed the style of their firm to "T. F. Bristow and Co."

FLIES.—The Philistines are upon us. Here and there a stray fly has made his appearance already, and we begin to imagine the tortures which await us during the next two months. In a few days chance will bring one of the new generation of flies into contact with some human face divine. With instinctive bloodthirstiness he will smell the luscious fluid which lies beneath, and having drunk himself into a state of blissful intoxication, will spread the happy news through all flydom, and from then till the cold weather sets in the human race will be the perpetual victims of these little tormentors. Indians and others accustomed to mosquitoes, tigers, snakes, and tornadoes, may perhaps be inclined to sneer at our unmanly complaints of such a small pest. But then they are not afflicted with tigers all day long. The deadly cobras are not mingled with every article of their daily food and drink, nor do furious elephants settle on the noses of weary sleepers, and wake them from happy slumber.

But this year there is bad news for the flies. Papier-Moure is cheaper. It is something novel to hear of the price of anything being reduced just now; but it is the fact in this case. Messrs. Maw, Son, and Thompson, too, are sending out numbers of handbills with the very clever verses which have on separate occasions appeared in *Punch*, in honour of Monsieur Moure and his paper, printed on them. Perhaps the most recent of these odes may not be familiar to all of our readers. We reprint it below. The others will be found in our advertising pages.

THE PLAGUE OF FLIES.

Here's a health to a benefactor
Of his country and most mankind,
On the great world's stage no actor,
Nor a Power in the Realms of Mind.
But he's one that hath well succeeded,
And his name shall for aye endure,
Few have done much more than he did
Who invented the Papier Moure.

He or she, we may know which never,
Has deserved to win the skies;
May the Author live for ever
Of the Paper that kills the Flies.
Steeped in water it tempts their suction,
Then it's deadly work is sure,
They're enticed to their swift destruction,
Are the Flies, by the Papier Moure.

O how often, reading or writing,
Have I sat with a mind distraught,
By their creeping, humming, and biting,
Till at last came the happy thought
Of a bane for each foll' annoy;
Little cost would the means procure—
An Avenger and a Destroyer,
I sent out for the Papier Moure.

Lo! they lie not a few upon it,
And a great many more all round,
The tablecloth lots hath on it,
On the carpet yet more abound.
They have drunk, they have died, they're demolished,
They are killed by a perfect cure,
Executed, extinguished, abolished,
In a trice by the Papier Moure.

When in August the skies are blazing,
Then Boelzebub's legions swarm,
The weather those vile imps raising
In their myriads when 'tis warm.
Ah, but I now know how to lay them,
I defy the fiend impuro;
The tormentors, his brood, I slay them
With a small sheet of Papier Moure.

There's a chorus by HANDEL written,
Tivi-tivi, buz-wuz, biz-wiz;
But if HANDEL had ne'er been bitten
By the Flies, it ne'er had been his.
No such loss is to be lamented
By the musical amateur:
Since old HANDEL's time invented,
Not too soon, was the Papier Moure.

As they lie round strown and scattered,
Those Egyptian pests do me
Put in mind of invaders battered,
And blown up by land and sea.
But O would that their perdition
We were able to secure
By some venomous composition
As dog-cheap as the Papier Moure!

While we are on the subject of poetry we may quote from another of the comic papers (*Judy*, we think) a drinking-song lately published in honour of one of our well-known patents:—

If e'er your spirits are damp, low,
And billous; you should, I opine,
Just quaff a deep hump of Lamplough—
Of Lamplough's Pyretic Saline.

The title is quaint and eccentric—
Is probably so by design—
But they say for disturbances ventric
There's nought like Pyretic Saline.

Don't bid me become exegetic,
Or tell me I'm only a scamp low,
If I can't tell you more of Pyretic
Saline manufactured by Lamplough.

Messrs. Tidman and Son are agents for a good vegetable tar skin soap (Yerkham's) which they put up for sale in 3d. and 6d. tablets.

The competition among the marking-ink makers is becoming a feature of the day in our trade. We have to welcome two new brands this month. One is manufactured by Mr. Whitby, the perfumer, and is happily named the "Whitby Jet." The other is by Messrs. Garman Brothers, of Bow. Both are attractively sent out on cards. For further particulars of their virtues we must refer to our advertisement pages.



BANKRUPTS.

BUTLIN, SARAH, Duke-street, Manchester-square, chemist. July 2.
MEDLAND, JANE, trading as WILLIAM MEDLAND, Brick-hill-lane, Upper Thames-street, and Bramley, near Guildford, manufacturing chemist. June 26.

LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings of creditors, in re the undermentioned estates, have been issued:—

The dates are those of the announcements.

BELL, WILLIAM, Wakefield-road, Bradford, chemist. July 5.
CARR, WALTER PATERSON, 19, Elgin-road, Maida-vale, chemist. June 26.
COLBORNE, HOBSON JOHN, Cambridge, mineral water manufacturer. June 19.
DE BARY, CHARLES WILLIAM RUDOLPH, 36, Fonthill-road, Finchbury-park, manufacturing chemist. June 27.
EDWARDS, JAMES JOSEPH, George-street, Pontypool, chemist. June 19.
FERGUSON, WILLIAM HENRY LAING, 43, Claremont-square, Clerkenwell, M.D. June 9.
HIGGINSON, WILLIAM G., Leicester, chemist. June 19.
HOBSON, JOHN and JOSHUA HOBSON, trading as JOHN HOBSON and SON, Batley, Yorks, druggists and grocers. June 25.
JONES, ERWIN, Hollinwood, near Manchester, chemist. June 29.
LLOYD, EDWARD, 533, Oldham-road, Manchester, chemist. July 1.
LONG, JAMES EDMOND, Parkgate, near Rotherham, doctor (separate creditors). June 26.
PHELPS, ERWIN, Queen's-parade, Stapleton-road, Bristol, chemist. June 26.
POOLE, WILLIAM, Church-street, Blackpool, chemist. July 1.
SAWYER, WILLIAM, and THOMAS BARKER, Cornwallis-street, Hastings, mineral water manufacturers. June 30.
SMITH, JOE, Wath-upon-Dearne, chemist. June 24.
WILKINSON, HUBERT HENRY BIRKETT, and JAMES EDMOND LONG, Parkgate, near Rotherham, M.D.'s. June 26.
WILKINSON, HUBERT HENRY BIRKETT, Parkgate, near Rotherham, M.D. (separate creditors). June 26.
WILLIAMS, EDWIN LEWIS, High-street, Stroud. June 25.

DIVIDEND DECLARED.

LOVER, WILLIAM M. (Bkt.), Middlesborough, druggist. 1st and final div. 4s.; G. Hudson, Mechanics' Institute, Stockton-on-Tees.

SCOTCH SEQUESTRATION.

PATERSON, JAMES, now in Dumfries Prison, late Aberdeen, M.D., some time in the Royal Navy. June 24.

PARTNERSHIPS DISSOLVED.

ALEXANDER and AUSTIN, Victoria Wharf, Blackfriars, Blaydon-on-Tyne and Southwick, Sunderland, glass bottle manufacturers. July 1. Debts by Alfred Alexander.
HICKS and JACKSON, Smethwick, surgeons. June 10.
HORNBY & Co., Don Vitriol Works, Attercliffe, near Sheffield, chemists. June 10. Debts by Edward P. Hornby.
LOWE and COOKE, King's Lynn, surgeons. July 1. Debts by John Lowe.
MACDOFF, JAMES, & Co., 5, High-street (Cross), Paisley, chemists and druggists, May 13. Debts by J. T. Donald, who continues the business.
THOMPSON, BERRY, & Co., Birmingham, vinegar-brewers. June 14.



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4, South-st. Finchbury, London; 10, Rue de la Fidélité, Paris; and 83, Rue de Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

370. A. M. Clark, of London. Improvements in the preservation of alimentary substances, and in apparatus for the same. Dated 16th April, 1873.
764. J. Hargraves, chemist, and T. Robinson, ironfounder, of Widnes, Lancaster. Improvements in the manufacture of soda and potassa. Dated 3rd March, 1873.
938. E. T. Hughes, of London. Improvements in the manufacture of the salts, carbonates, and hydrates of baryta and strontia, and also for improved modes of making baryta and strontia caustic. Dated 4th March, 1873.
1222. J. H. Johnson, of London. Improvements in the preparation of ozone, and in the application of the same to various useful purposes. Dated 2nd April, 1873.
1406. J. Arnold, of West Smithfield, surgical instrument maker. A new or improved instrument or instruments for vaccinating. Dated 18th April, 1873.
1430. J. W. Gray, of London. A new or improved reservoir for storing petroleum or other inflammable oils or spirits. Dated 19th April, 1873.
1451. A. J. Amnoux, M.D., of Great Winchester Street-buildings. New or improved modes and means for preparing medicines. Dated 22nd April, 1873.
1469. F. W. Colls, of Erith, Kent. Improvements in treating resin oil to obtain therefrom a neutral oil suitable for lubricating machinery and for other uses. Dated 23rd April, 1873.
1489. J. H. Johnson, of London. Improvements in the production and treatment of colouring matters. Dated 24th April, 1873.
1500. L. Thiercelin, of Paris. Improvements in recovering iodine from phosphates of lime during the manufacture of superphosphate of lime, and in apparatus therefor. Dated 25th April, 1873.
1522. T. Nixon, and P. Quin, both of Hebburn, Newcastle-on-Tyne, Durham. Improvements in the manufacture of sulphate of soda. Dated 26th April, 1873.
1556. C. Russell, of Talbot-court, Gracechurch-street. Improved apparatus for the manufacture of nitrate of soda. Dated 29th April, 1873.
1557. A. M. Clark, of London. Improvements in the preparation and employment of indigo blue dye. Dated 29th April, 1873.
1561. L. Mairnan and J. Franck, of Paris. An improved apparatus for stopping bottles and other vessels. Dated 30th April, 1873.
1567. W. A. Bartlott, of Brighton. Improved means for the relief and cure of diseases of the feet. Dated 30th April, 1873.
1641. G. Haseltine, of London. An improved process and apparatus for effecting and maintaining a separation between two dissimilar liquids, or between a liquid and any substance held in solution suspension therein, parts of which invention are applicable to the construction of galvanic batteries, and to the refining of spirituous and vinous liquors. Dated 7th May, 1873.
1658. W. K. Platt, of Philadelphia, United States. Improvements in chemical fire extinguishers. Dated 8th May, 1873.
1666. E. Gerant, of Farringdon-road. Improvements in aerated water bottles and stoppers for the same. Dated 8th May, 1873.
1689. C. Caspers, of Newcastle-on-Tyne, Northumberland. Improvements in the purifying of crude anthracene of commerce. Dated 9th May, 1873.

1701. W. R. Maguire, of Dawson-street, Duhlin. An improved water filter. Dated 10th May, 1873.
1715. A. Jamieson, of Broad-street, Golden-square. Improvements in regulating the temperature of vulcanizing apparatus for vulcanizing india rubber used in the manufacture of artificial teeth. Dated 12th May, 1873.
1725. C. Wigg, of Liverpool. Improvements in the manufacture of bleaching powder, and in apparatus employed therein. Dated 12th May, 1873.
1741. R. S. Newall, of Washington Chemical Works, Newcastle-on-Tyne. Improvements in the manufacture of magnesia. Dated 13th May, 1873.
1786. A. E. Fleteber, of Liverpool, chemist. Improvements in the manufacture of carbonates of soda and potash, and in apparatus employed therein. Dated 16th May, 1873.
1792. C. Eskrett and H. Searle, both of Kingston-upon-Hull, Yorkshire. Improvements in "envelopes" or "hairs" used in extracting oil from oleaginous seeds and in oil-cake making. Dated 16th May, 1873.
1815. G. W. Scollay, of New York. An improved method or mode of preserving animal meat or matter to be used for food or other purposes. Dated 19th May, 1873.
1852. J. Imray, of London. Improvements in apparatus for supporting respiration and light in suffocating atmospheres, and under water. Dated 22nd May, 1873.
1934. R. Werdermann, of Princes-street, Surrey, civil engineer. An improved process for the conversion of chlorides and fluorides of alkaline metals and alkaline earth metals into oxides, hydroxides, and carbonates. Dated 29th May, 1873.
1967. J. Townsend, of Glasgow, manufacturing chemist. Improvements in treating sewage or other liquids or substances containing nitrogen, phosphorus, or their compounds, in order to deodorize or precipitate the same, and obtain useful products therefrom. Dated 31st May, 1873.
1969. J. L. Pulvermacher, of Regent-street, electrical engineer. Improved construction of metal plates, positive and negative, and in methods of attaching or connecting plates or elements to form chains or batteries for medico-electric and other purposes; also in appliances connected therewith, for the application of electric currents. Dated 31st May, 1873.
2053. J. H. Sandy, of Salisbury-street, Strand, W.C. Improvements in galvanic batteries, and in the fittings, and mountings, and apparatus connected therewith. Dated 10th June, 1873.
212. T. F. Henley, of Pimlico. Improvements in the manufacture of meat extract. Dated 18th January, 1873.
710. E. Meige and F. N. C. Vuibert, of Boulogne-sur-Mer, France. An improved mode or process of preserving meat. Dated 26th February, 1873.
765. S. Russell, of Arundel-gardens, Bayswater. Improvements in stoppering bottles. Dated 3rd March, 1873.
786. W. Grigg, of Tamerton, Foliott, Devonshire. The application of electricity to horses and cattle suffering from local, chronic, and constitutional ailments and diseases, with all necessary appendages for applying the same. Dated 5th March, 1873.
916. C. Mosley, of Manchester. Improvements in apparatus for condensing the vapours of naphtha. Dated 13th March, 1873.
1270. L. Weber, of Brussels. Improvements in galvanic batteries. Dated 5th April, 1873.
3261. J. A. Wanklyn, of Harrington-street, Hampstead-road. Improvements in the production of oxygen gas. Dated 2nd November, 1872.
3322. W. Marriott, of Huddersfield, York. Improvements in the manufacture of salts and oxides of lead, and in apparatus therefor. Dated 8th November, 1872.
3421. T. Bagley, of Birmingham. A new or improved varnish. Dated 16th November, 1872.
3460. A. Morgan, of South Lambeth-road. An improved method for purifying and amalgamating gum resins, including kauri gum. Dated 26th November, 1872.
3466. T. C. Selby, of Bermondsey. A new shield for the protection of the chest and lungs of animals used for riding, or draught purposes from inclement weather. Dated 26th November, 1872.
3473. C. W. and A. H. Harri-on, of High Holborn. Improvements in apparatus for charging or impregnating atmospheric air with vapour of hydrocarbon liquids. Dated 20th November, 1872.

Letters Patent have been issued for the following:—

45. A. A. Croll, of Coleman-street, civil engineer. Improvements in means or apparatus for the distillation of ammoniacal liquors, which improvements are also applicable in the distillation of other liquids, and in the concentration of soluble salts. Dated 4th January, 1873.
766. E. Hunt, professional chemist, of Worsley-street, Salford, Lancaster. An improvement in dyeing and fixing of what are known as aniline colours. Dated 3rd March, 1873.
1274. A. W. Ellis, of Woodorl, Essex, manufacturing chemist. Improvements in the treatment of substances and liquors containing ammonia and cyanogen, and in obtaining products therefrom. Dated 7th April, 1873.
1567. C. W. A. Bartlett, of Brighton. Improved means for the relief and cure of diseases of the feet. Dated 30th April, 1873.
3591. H. G. T. H. Foveaux, of the Strand, surgical instrument maker. An improved clinical thermometer. Dated 29th November, 1872.
3600. P. W. Seymour, Surrey-lane, Battersea. Improvements in magnetic therapeutic plasters. Dated 29th November, 1872.
3680. T. Pettifan, of Islington, chemist. Improvements in the production of metallic surfaces and articles of various forms by chemical means, and the electro-deposition of metals, which surfaces or articles are produced either highly polished, dead, or matted, engraved or otherwise ornamented. Dated 5th December, 1872.

Specifications published during the month:—

Postage 1d. each extra.

1872.

2569. B. W. Gerland and another. Manufacture and application of sanitary charcoal. 4d.
2611. F. Trotman and another. Closing and opening necked vessels or bottles. 1s. 2d.
2621. H. Codd. Bottles for aerated liquids. 10d.
2623. M. H. Tynge. Deodorizing apparatus. 1s. 8d.
2686. P. Michaelis. Machinery for capsuling bottles. 8d.
2770. A. E. Webb. Treating oils, spirits, and fatty matters. 4d.
2771. J. L. Pulvermaelver. Medico-electric apparatus. 1s. 4d.
2773. T. Low. Apparatus for breathing in impure atmospheres. 4d.
2822. C. Morfit. Reclamation of materials employed in the manufacture of phosphates of lime. 4d.
2845. F. Walton. Oxidizing oil. 10d.
2913. H. B. Barnett and another. Disinfecting antiseptic and cleansing liquids. 4d.
2934. H. B. Barnett and another. Deodorizing and disinfecting fluids. 4d.
2941. G. Robbe. Preparation for the treatment of foot and mouth disease. 4d.
2982. J. Hargreaves and another. Manufacture of alkalies. 8d.
2985. A. Ungerer. Evaporating liquids. 4d.
2988. J. Young. Treating ammoniacal liquors. 4d.
2989. G. Young. Manufacture of carbonate of soda. 4d.
2996. J. R. S. Hayward. Galvanic belt. 8d.
3003. J. Steedman. Obtaining acetic acid. 4d.
3014. S. H. Johnson. Separating soluble from insoluble substances. 10d.
3017. N. Bickford. Soap. 4d.
3026. R. France. Stoppers for bottles. 4d.
3032. J. Hargreaves and another. Treating sulphides, and obtaining products therefrom. 4d.
3044. A. V. Newton. Trusses. 4d.
3052. J. Hargreaves and another. Manufacture of sulphates of soda and potassa. 1s. 4d.
3062. A. R. Stocker. Appendages for feeding bottles, etc. 4d.
3071. J. Hird and another. Stopper for bottles. 4d.
3094. E. C. Nicholson. Producing colours for dyeing and printing.
3101. W. R. Lake. Compounds of pyroxyline or gun-cotton. 10d.
3103. R. T. Fairlie. Apparatus for extracting nitrate of soda. 1s.
3160. W. T. Cooper. Effervescing mixtures. 6d.
3173. E. Rowe. Treating earths or materials containing metallic alloys and oxides. 4d.
3194. T. Cobby and another. Obtaining caustic baryta. 4d.
3232. W. T. Cooper. Lozenges. 4d.
3250. P. Forbes. Apparatus for preserving food. 4d.
3270. C. Rave. Colouring matter. 4d.
3273. J. B. Spence. Obtaining anthracene. 4d.
3277. R. J. Lee. Inhaling apparatus. 4d.
3309. H. Deacon. Bleaching liquor. 4d.
3323. A. M. Clark. Manufacture of stearic acid. 4d.
3378. V. M. Target. Preserving food. 4d.
3393. G. Clark. Preserving articles of food. 4d.
3430. J. S. Podge. Feeding bottles. 4d.
3466. T. C. Selby. Shield for the chest of draught animals. 4d.
3737. W. R. Lake. Clarifying and settling varnishes, oils, etc. 4d.

1873.

77. G. Haseltine. Hospital beds. 6d.
216. L. Stevens. Forming and applying carbonic oxide. 10d.

COMPREHENSIVE EDUCATION.—A Vienna journal makes the following announcement:—"Anna Agricola, sick nurse watches dead bodies, repairs straw chairs, applies leeches, and makes pastry, desserts, and delicacies."

TO PREVENT GUM FROM BECOMING MOULDY.—Moisten the gum with alcohol, then dissolve in water, and add a few drops of sulphuric acid. After the deposition of the precipitated calcic sulphate, a perfectly colourless solution of gum is obtained, even when inferior kinds of gum are used.

HARDENING SMALL TOOLS.—According to J. Scheuszleder, watchmakers and engravers harden their tools in sealing-wax. The article is made white hot and thrust into sealing-wax, allowed to remain a moment, then withdrawn and thrust into another place; and this treatment is continued until the steel is cold and will no more enter the wax. The hardness thus attained is extreme, and comparable to that of the diamond; in fact, steel hardened in this way may be used for boring or engraving steel hardened by other processes, the tool being previously moistened with oil of turpentine.

PROTECTION.—The Common Council of Norfolk, Virginia, must be a very smart set of men. They have lately passed an ordinance, compelling all persons doing business by sample to take out a licence for the same, and pay therefor a fee of 10 dols. The consequence is that the "drummers" generally avoid Norfolk, and the tradesmen of that place will eventually find themselves preyed on by one or two houses who, in the absence of competition, will find it a good investment to pay the 10 dols.



REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

The first five divisions of Muspratt's "Chemistry." Published 10s. 6d. each. As good as new. Price 30s. 6s/75.

Soda Water Plant complete. To produce 300 dozen per day. A bargain. Address, W. Butler, Maidenhead, Berks.

Potass. Iodid. Ang. Pur., seven pounds at 22s. per lb. 56/26.

Sixty-four pounds Salts of Tin, cheap. Send for sample and price to F. Bird, Chemist, Coventry.

One two-gallon Steam Copper Still; also Portable Shower Bath. Apply, Wilkinson, 4, Baker's-hill, Sheffield.

A few pounds Pot. Iodid. 23s. Carriage paid. Drury, Southwell.

Grain Measure Burette. 3s. 6d. (new). Cost 4s. 6d. W., 22, Brooke-street, W.

Several Glass Cases, particulars of J. Floyd, Bury St. Edmunds.

Surplus Stock.—1 Crate; 5½ gross 6 and 8 oz. Bottles. Price 9s. per gross. Scott, Druggist, Rochdale.

A copy of the last edition of Attfield's "Chemistry," in good preservation. A. H., 34, St. Matthew's, Ipswich.

Half-ounce Virgin Otto, one Tooth Forceps. G. Walker 43, Silver-street, Salisbury.

Apparatus, Sundries, Books, &c., left by predecessor; cash or exchange. R. C. Mason, Bromsgrove.

Mr. Judd's "Manuscript Note Books for the Minor." Six in number. 57/14.

Attfield's "Chemistry;" "Pharmacutical Latin Grammar." Cash offers. 56/18.

A quantity of the Litre Bottle Wine Company's Wines, at an extra discount. 56/4.

Wilson's "Chemistry," 2s. 6d.; Beasley's "Formulæ," 3s. 6d.; "Selecta Præscriptis," 3s. Joseph Roberts, 55, Bold-street, Liverpool.

About two cwt. good Senna, 2½d. per lb.; also two cwt. Brown Tinnivelly ditto, for infusions, 1d. per lb. Stamp for sample. C., 166, Spon-street, Coventry.

Two Nautilus Swimming Belts; six two-gallon Carboys and Mahogany Stands; Electro-Magnetic Machine. Smith, Forton-road, Gosport.

Homœopathic Medicines, by Leath and Ross. Nearly two gross of sixpenny and shilling goods, in good condition. Offers wanted. T. T. Cussons, Stocks-hill, Leeds.

To be sold cheap, in good condition, in one or separate lots, Drawers, Counters, Cases, Shelving, Bottles, etc., of a Chemist's Shop. Apply, E. B., Lee-bridge, Halifax.

Two Roscoe's "Chemistry," nearly new, each 3s.; Turner's "Chemistry," 3s. 6d. Address, J. Roberts, 55, Bold-street, Liverpool.

Lescher's "Elements," not soiled, cost 7s. 6d.; Williamson's "Chemistry for Students," in good condition. Offers wanted. G. S., Minchinhampton.

"Pharmacopœia Londonensis," Latin; ditto, ditto, English. Alex. P. Patterson, 86, Bridgman-street, Bolton, Lancashire.

Offers wanted for "Pharmaceutical Journal," for 1853 to 1859 inclusive. Unbound. Chemist, 89, Yorkshire-street, Rochdale.

Books required for the Preliminary. Good condition. 9s. the lot; cost 15s. 3d. "Useful Botany." Price 1s. 2d. G. A. Story, Mr. J. B. Roberts, North-street, Bourne.

Ten pounds of small, dry Tobacco (Returns), price 15s. Sample sent for two penny stamps. Mr. Mellor, 10, Bond-street, Weymouth.

A wrought-iron covered Cistern, ⅓ in. thick, 37 in. x 47 in. x 31 in., with brass tap, nearly new. Only five guineas. Purrett, Worle, Somerset.

A fine outside Shop Lamp and Bracket, in good condition. Cost £10. To be sold for £5. Apply 287, City-road (near the Angel).

Pulvermacher's Galvanic Chain Bands, one narrow, 22s.; one broad Ditto, 40s. Offers wanted. Hardy, Bishop's Stortford.

Lindley's "Elements of Botany" (5th edition), in good condition. Price 4s. Address George Morison, Chemist, Peebles.

A ten-gallon Copper Still, with worm and tub, a bargain; two Specie jars, eighteen inches to shoulder; eight pear-shaped Carboys, cut stoppers, three gallons. Lake, Chemist, Exeter.

Seven first volumes "Pharmaceutical Journal;" "Gray's Supplement," by Redwood; "The Horse, Sheep, and Cattle," by Youatt. Published at 8s. each. All equal to new. Wanted offers. Grieves, Chemist, Ludlow.

Bate's Patent Saccharometer, in mahogany case. Nearly equal to new. Cost £4. Offer wanted. Sale or exchange. Address, A. B. Ginns, Rothwell, Northamptonshire.

Bentley's "Botany," new. 8s. 6d., or exchange for Barber's "Companion to B.P.," with map, etc., and Roscoe's "Chemistry." Lindley's "School Botany," cost 5s. 6d., for 3s. B., 23, Leinster-terrace, Hyde-park, W.

A quantity of first-class Shop Fixtures, Fittings (Mahogany), Bottles, Specie Jars, Utensils of Trade, etc., for sale. List and prices sent on application to A. B., 40, Seymour-street, N.W.

Twelve dozen Mohr's Turkish Galvano-Magnetic Silver Anodyne, an instantaneous cure for Toothache. Retail 1s. 1½d. each, for exchange or offers. English, chemist, Pickering.

About 60 lbs. of Potassii Iodid. 20s. per lb.; the lot 19s. 6d. per lb.; 20 doz. Mohr's Turkish Galvano-Magnetic Silver Anodyne, 7s. per doz., the lot 6s. 6d. per doz. Sowerby, Chemist, Middlesbro'.

Window Brasses with words "Chemist and Druggist;" 2 Gold Rings; Jalapine; Bell-nictal Mortar, with Pestle, 2½ pints, weight 18 lbs., good as new; Books. Carrington, Wincanton.

Second hand press, with six founts of type. Six different coloured inks, four cases, roller, and all requisites for home printing. Exchange for stock, value 50s. Wyles, Bourn, Lincolnshire. Also various extra types.

Glass Case, 5 ft. long, 4 ft. 7 in. high (gold lettered); Brass Counter Scales on mahogany stand; Dispensing Scales, Fig. 7 Maw's; CHEMIST AND DRUGGIST since 1868, and sundries; a bargain. M. G. Field, Whitmore Ream, Wolverhampton.

Bargains. "Pharmaceutical Journal," first and second series complete, 30 vols., bound; small Copper Steam Boiler, with two 3 or 4-gallon steam-jacketed pans, etc.; Homœopathic Show Case, Ashton and Parson's No. 2. Macpherson, Stornoway.

A 2, 3, and 4-doz. Burrow's Soda Water Rack, half-dozen Hampson's Fluodentine, two dozen Morrison's Pills, two dozen Stantou's Pills, half-dozen Naldir's Dog Soap, all at 25 per cent. off wholesale, or exchange for Paraffin Cistern, 60 to 100 galls.; also 4 oz. Virgin Otto, at 28s. net. Jackson, Blackpool.

An excellent 11-ft. Fly Rod, for trout fishing, by one of the best makers, new, plays beautifully, very light, hollow butt, two tops, cost 30s.; new Multiplying Winch, cost 5s. 6d.; and thirty yards Hair and Silk Line, cost 2s. 6d. Price for lot 27s. Owner leaving the country. A. Bolton, Chard, Somerset.

Four casks Young's Paraffin; one cask Mineral Lubricating Oil; 1½ doz. Beaufoy's Chloride Lime, 2s. 6d.; ½ doz. Robinson's Barley, 1s.; 1 doz. 6d. ditto; 40 lbs. Soda Hyposulph.; 6 lbs. Stavesacre; few Comaline Restorers and Glos. Offers in cash, or exchange for whole or part, to J. C. Thresh, Dukinfield.

Three dozen 2oz. Crystal Carbolic Acid; half-dozen 3s. Euxesis Shaving Cream; one dozen Odorators; half-dozen I. R. Breast Exhausters, Maw's; 7 lbs. Cort. Cinchonæ Lancifoliæ; 6 lbs. Ext. Aloes Aquosæ; ¾ cwt. French Chalk, in convenient pieces for retail. H., 43, Bury New-road, Manchester.

Handsome gold-labelled Specie Jars, Show Carboys, Shop Bottles, Cork Presses, Twine Boxes, Pill Machines, Coppers; 5 cwt. Fol. Sennæ, Tin; 1 cwt. Bacc. Junip.; 28 lbs. Pulv. Enulæ; 56 lbs. Pulv. Fœnugreek, Co.; 100 yards India Rubber Tubing; various Drugs, Patents, Sundries. Rayner, 309, New North-road, Islington.

A 50-gallon Copper Still and Worm, nearly new, £15; Castor Oil Filtering Apparatus; twelve tins, to take three bags, 16 by 24; eleven tins, with taps, 12 by 24; and bottling four taps, 14 by 24. Other tins, round and square, £5 the lot. About 30 lbs. Pulv. Aloes Bbds. Opt., at 1s. 9d. John Walton, St. James's-road, Croydon.

Two doz. Macintosh Sponge Bags, 8½ by 6 in., 2 doz. ditto, 8 by 5 in., 4s. per doz.; 1 doz. ditto, 5 by 4 in., 1½ doz. 5 by 5 in., 3s. per doz.; 2 × 28 lb. tins Thomas' Sheep Ointment, 1s. per lb.; Machine for Cutting Tin or Sheet Iron, suitable for a Mustard Packer, 42s.; Standard Imperial Measure, Copper, Spirit Shape, with large Tap, weighs 31 lbs., 42s. Wiggin, Ipswich.

Hempel's Jahr's "Skin Diseases," 2s. 6d.; Dawson's "Nervous Affections," 1s. 6d.; Wilkinson's "Health," 2s. 6d.; Bateman's "Magnocopia," 2s. 6d.; Cruveilhier's "Anatomie," 2 vols., 5s.; Steggall's "Celsus," 2s. 6d.; Squire's "Astronomy," 2s.; "Celsus," 3s.; Armand's "Medicine," 4s. 6d.; Lavater's "Physiognomie," 2 vols., plates, 2s. 3d. T. Floyd, 2, Paddington-street, Poole's-park, London, N.

One Enema Apparatus, brass barrel, as Fig. 2 Maw's List, good as new; one Ditto, rather old, requires adjusting; one Stomach Pump, as Fig. 29 Maw's List, fittings for use as Enema, etc.; two Breast Pumps, as Fig. 4 Maw's List, require adjusting; one flat Counter Case, 13 in. broad, 9 in. deep, 28 in. long, glass top and front; one upright Case, 20 in. long, 5 broad, 21 high, exclusive of top piece. B. Wood, Halifax.

"Greek Delectus," 1s.; Pinnock's "Geography," 1s.; Greek Grammar, 1s.; Cæsar (new copious index), 1s.; Giles' Key to ditto (new), 1s. 9d.; Bryce's Latin Grammar (quite new), 1s.; English Grammar, 1s.; Life of Wellington, 1s.; Bateman's Magnacopœia (new), 4s., cost 6s.; Milton's Works, 2s.; Bunyan's "Progress," 1s. 9d.; Clean "Aristotle," 3s. 9d. (new), cost 5s.; Kenwood's Flowers of Knowledge, 1s.; Telescope, 10s., cost 15s. Dobson, Marine View, Egremont, Cheshire.

Carriage paid. B. P., 1867 (new), 5s.; Bowman's "Medical and Practical Chemistry," 4s. each; Nesbit "On Agricultural Chemistry," 2s.; Paxton's "Anatomy," 2 vols., 6s.; Smith's "Medical Evidence," 2s. 6d.; Guernsey's "Homœopathic Practice," 3s.; Dudgeon's "Lectures, Homœopathy," 5s.; Teste's "Diseases Children," 4s.; Berjeau's "Syphilis," 2s. 6d.; Humphrey's "Sexual System," 2s. 6d.; Buchan's "Domestic Medicine," 3s. 6d.; "London Surgical Pocket Book," 3s.; "Medical Pocket Book," 1s. 6d.; Lawrence's "Lectures on Man" 7s. 6d. A. Davis, 161, Seven Sisters'-road, London, N.

Dispensing Bottles, flat and oval, clean, 4-oz., 6-oz., and 8-oz., 8s. 6d. per gross; a set of Maw's Tooth Stopping Instruments, in case, one ivory screw handle, as Fig. 18 (new), 8s. 6d.; nine pairs of Forceps, one Elevator, a Gum Lancet, and Tooth Mirror (Maw's), in morocco pouch, buckle and straps, £2 10s.; 50s.-Pulvermacher's Combined Chain Band, twice used, 25s.; Fowne's "Manual of Chemistry," 8s.; Churchill's "Diseases of Women," 8s.; Druitt's Surgeon's Vade Mecum, 8s.; Walshe "On Lungs and Heart," 5s.; Walshe "On Cancer," with Illustration on Steel, 4s. 6d.; Tanner's "Diseases of Pregnancy," 5s.; "British Pharmacopœia, 1864," 3s. (all in good condition). Also several Homœopathic Works, including Hahnemann's "Materia Medica," translated by Hempell, 4 vols. Andrews, Chemist, Eastbourne.

Halse Galvanic Battery, £4; Galvanic Battery, in box, 20s.; Magnetic Machine, 15s.; Oil Cistern, to hold 60 gallons, 20s.; lot of black Show Bottles, cheap; 23 Scaling Instruments, assorted, best white bone handles, 9s. per doz.; Scoopers and Scrapers, 6s. per doz.; 3 doz. double-ended Excavators, white bone handles, 12s. per doz.; 2 doz. steel gilt handle Scalers and Stoppers, assorted, 7s. per doz.; 3 doz. Stoppers, steel file cut handles, 6s. per doz.; 3 doz. sets of Forceps, in cases, 18s. per set; 1 set of Clendons, cheap; 2 sets of Tonics, cheap; Richardson's Ether Spray Apparatus, 3 jets, &c., complete, 12s.; 1 ease of Scaling Instruments, ivory handles, 12s.; Barth's Nitrous Gas Apparatus—Face, &c.—complete in box, 55s.; Vulcanizers, Gas Stoves, cheap; Electric Machine, large size, on strong mahogany frame, 20s.; Muspratt's "Chemistry," complete, 30s.; 1½-oz. Otto Rose Virgin; also 1½ lbs. Pulv. Turkey Opium Opt. Offers wanted. Address J. G., 14, Netherthorpe-street, Sheffield.

WANTED.

Few 40 oz. oil Bottles, tin caps. Portbury, Devizes.

Outside Mortar, good condition. Also Books required to pass Preliminary Examination. Price. 57/10.

Coolley's Receipts. State lowest price to F. Woollings, 217, Edgware-road.

Tooth Forceps, Stopping Instruments, Buck, 277, Oxford-street.

Mirrors for shop fitting, send dimensions and lowest price to J. Floyd, Bury St. Edmunds.

A Chemical Balance and other apparatus; also a high-power Microscopic Object Glass. 56/15.

Two dozen 1-gallon Stock Bottles; three dozen 20-oz. Shop Rounds; one Quart Tincture Press; small Specie Jar. Evans, 367, Moseley-road, Birmingham.

Flat bent glass Cases, upright Counter Cases, Wall Cases, Jars, Bottles, etc. Gibson, chemist, Gooch-street, Birmingham.

Bentley's "Botany;" Sumner's "Practice of Medicine" (4th edition), small; also two 12-gallon Carboys. Chemist, Greenwood-road, Dalston, London.

Wanted to purchase any quantity of Soda-Water Bottles, if plain preferred; also Brighton Seltzer Bottles, half-pints. State quantity and lowest price for cash. 57/28.

A Front Wing Counter 6 ft. 6 in. or 8 ft. long; also a Front Nest of Labelled Drug Drawers 10 ft. long or thereabouts; a 4-gallon pear-shaped Window Carboy. Jenkinson, chemist, Sheffield.



THE RIGHT TO THE TITLE "PHARMACEUTIST," ETC.—In reference to an incorrect remark in this page two months since, a correspondent calls our attention to the 15th Section of the Pharmacy Act, 1838, which expressly prohibits the assumption of the titles pharmacist or pharmacist by other than pharmaceutical chemists.

We last month quoted from the *Druggist's Circular* a professed formula for Lea and Perrin's Worcestershire Sauce, which we are informed by Messrs. Lea and Perrin is incorrect, and calculated to injure them. Nothing could have been further from our intention, and we have taken the earliest opportunity of making the *amende honorable*.

W. B.—We are obliged to you for your letter, but as we are not acquainted with the work you mention we cannot of course recommend it. The fact of its having been published seventeen years ago would, we are afraid, carry its own *velo* as far as students are concerned, the majority of whom regard a book which has seen but a couple of seasons as "out of date."

B. and Co.—Persian Sherbet:—

℞ Pulv. sach. alb., lb. iv.
Sodæ bicarb.
Acid tartaric, ℞ lb. ij.
Ess. limonis, ʒij.

Dry the powders separately, mix them together, then add the ess. lemon, and keep the mixture in bottles.

J. J.—The most comprehensive work is the "Materia Medica" of Bentley and Redwood (Longmans), 25s. For one smaller in compass, though admirable in contents, we recommend the last edition of Dr. Scoresby-Jackson's "Note Book" (MacLachlan and Stewart, Edinburgh), 12s. 6d.

Rustic.—We can obtain no information relating to the "Composition Powder" you mention. But from your description we should consider it almost identical with the pulv. creta aromat. of the Pharmacopœia, with perhaps a little extra colouring matter. Its name is, we presume, a local patronymic.

Pharmacien.—(1.) Most decidedly the medical creditor would have to content himself with whatever share he might get in common with his companions in misfortune. *Sauve qui peut.* The tailor must live as well as the doctor. (2.) Yes; English galls contain from 18 to 25 per cent. of tannin.

Hibernicus.—The most certain and economical process for gilding is of course that of electro-plating, a description of which you would find in any work on electricity. If you have not the necessary appliances for that method, you could try the following—Elkington's patent process:—

"The articles to be gilded, after being perfectly cleaned from scale or grease, and receiving a proper 'face,' are suspended by means of wires in

the gilding liquid (boiling hot), and moved about therein for a period varying from a few seconds to a minute or longer, the precise time required depending on the newness and strength of the liquid. When sufficiently gilded, the articles are withdrawn from the 'solution of gold,' washed in clean water, and dried. The 'gilding liquor' is prepared thus:—

Take of

Fine gold 5 ozs. (troy).
Nitro-hydrochloric acid 52 ozs. (avoirdupois).

Dissolve by heat, and continue the heat till red or yellow vapours cease to be evolved, decant the clear liquid into a suitable vessel, and add—

Distilled water 4 gallons.
Bicarbonatè of potass. 20 lbs.

Boil for two hours. Make the aqua regia with pure nitric acid (sp. gr. 1.45) 21 ounces; pure hydrochloric acid (sp. gr. 1.15) 17 ounces; distilled water, 14 ounces."

A Constant Reader.—We are not acquainted with any published process for decolorizing ferns, &c.; but we should recommend you to try either of the following methods:—Place the leaves between two pieces of perforated zinc, which may be secured together by string, and place the whole in a large flat dish about an inch in depth; then pour in at intervals enough spirit to cover the arrangement, and we believe you will find it dissolve out all the chlorophyll. Or, another plan would be to immerse the leaves in a vessel of water, and pass sulphurous acid gas into the liquid till the colour disappeared.

Optimus.—It is really very good of you to take such pains to impress us with the vast superiority of your own invention. Unfortunately we are not in the habit of inserting advertisements gratis; and as this column is intended to furnish our readers with trustworthy information, we must decline to embellish it with the "puff oblique."

X. Y. Z.—The following is the formula for "Syrup of the Phosphates," or "Chemical Food," as furnished by Professor Parrish—

℞ Ferri sulph., ʒx.
Sodæ phosph.
Calcis phosph., ℞ ʒij.
Acid. phosph. glacialis, ʒxxx.
Sodæ carb., ʒij.
Potassæ carb., ʒj.
Pulv. cocci cact., ʒij.
Sacch. alb., ℞ ʒxviij.
Aque flor. aurant., ʒj.
Acid hydrochlor.
Liq. ammon.
Aque dest. ℞ q.s.

Dissolve the sulphate of iron in ʒij., and the phosphate of sodium in ʒiv. of boiling water. Mix the solutions, and having collected the precipitated phosphate of iron on a filter, wash it with distilled water till the washings cease to have taste. Mix the phosphate of calcium with ʒiv. of boiling water, and add sufficient hydrochloric acid to dissolve it. When cold, precipitate with ammonia, and wash the precipitate. Mix the two phosphates together, and add the phosphoric acid, previously dissolved in water. When cold, add the carbonates of potassium and sodium, dissolved in water, and enough hydrochloric acid to dissolve the precipitate. Dilute with water to ʒxxxij., add the sugar, and lastly, the cochineal. Dissolve by the aid of a gentle heat, strain, and when cold add the syrup of orange-flower.

Contains 2½ grains Ferri phosph. } in ʒj.
1 grain Calcis phosph. }

M. D.—(1.) Donovan's solution is prepared as follows:—

℞ Acid. arseniosi, gr. vj.
Hydrargyri pur., gr. xvj.
Iodi, pur., gr. iss.
Alcohol, ʒss.
Aque destill., q.s.

Rub together the arsenic, mercury, iodine, and spirit until a dry mass is obtained, and having triturated eight ounces of the water with this in successive portions, let the whole be transferred to a flask, and heated till it begins to boil. When cooled and filtered, let as much distilled water be added to it as will make the bulk of the solution exactly eight fluid ounces and six drachms. The solution contains AsI₃ and HgI₂, in proportions equivalent to 1-12 grain arsenious anhydride, and ¼ grain mercuric oxide, in each fluid drachm. The dose is from ten to thirty minims. (2.) No; De Valangius' solution is about one-third the strength of liq. arsenici hydrochlor., B. P.

Etymologist.—We are much obliged for the facts and suggestions contained in your communication. We hope to provide several interesting papers on "Nomenclature." Any further information as to derivation of words common in pharmacy, and obscure in origin, will be gladly received.

Crocus.—We believe no satisfactory formula for Syr. Croci has been yet obtained. A process was published in the *American Journal of Pharmacy* some time since, in which the author substituted glycerine for part of the sugar, thus hoping to overcome the tendency to fermentation. But from experiments which we made ourselves, we can state that the results are quite unsatisfactory: the syrup though kept in a cool place, soon lost its fine orange colour, becoming thick, opaque, and useless. We would suggest to yourself and other readers to make a few original experiments. A really satisfactory preparation is a *desideratum*.

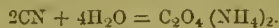
Bond's (Original) Marking Ink.—In reply to numerous correspondents, inquiring as to the disappearance of this article from the market, we can only mention the current report, that the illness or death of the manager of the business, who superintended the preparation of the ink, is the cause of the present difficulty.

R. T. D.—The ordinary commercial article which rejoices in the euphemistic appellation of "Lime Juice and Glycerine," is simply an emulsion of almond or even olive oil with lime water; a few drops of oil of lemons being added to give the necessary odour, and perhaps enough glycerine to "swear by." However, here is a preparation which will satisfy both your own conscience and your customers' hair:—

R. Ceræ al.
Cetacci, ʒij.
Ol. amygd., ʒviiij.
Succi limettae, ʒvj.
Glycer. boracis, ʒij.
Ess. limouis, ʒss.
Ess. bergamot, ʒij.

Melt the wax and spermaceti, add the oil and perfume, then shake till cold, with the lime juice and glycerine previously warmed.

A Student.—Yes. Cyanogen is certainly soluble in water, but the solution is very quickly decomposed. Amongst other things, ammonium carbonate being produced; thus



A good instance of the futility of the attempt to defluc the limits of "organic" and "inorganic" chemistry.

Errata.—At page 155, in the first column, lines 28 and 30, for PtCl_2 read PdCl_2 .

The following is a copy of the letter sent to the *Pharmaceutical Journal* by Mr. G. H. Wright of the Borough. It was not inserted, but some marks were made upon it, from which we drew our inference, which Mr. Wright thinks was not quite correct:—

(Copy.)

Sir,—The names of Wright and Southwark have so long been connected, that the alteration of my address as it appears in the Post-office directory, 103, Borough High-street, S.E., to 103, Borough High-street, Southwark, Surrey, as it appears in the list of candidates for Council, I find, led to a misapprehension which may possibly cause pain to an old member of the trade. Will you permit me to state therefore that the rejected candidate for Council was not Mr. Wright of Southwark, (Wright, Sellers, & Layman) but

Your obedient Servant,

G. H. WRIGHT,

Late partner with Corbyn & Co., 7, Poultry,
and now of 103, Borough High-street.

V. P.—The *Veterinarian* is the only English publication we know of devoted to veterinary surgery. It is sold, we believe, at 1s. 6d. per month.

F. R.—Cubic nitre is the technical name for nitrate of soda, which is largely imported into this country as a manure.

H. G.—As an ordinary rule, it is regarded in law that railway companies or other carriers are responsible for goods lost, reckoning the value of such goods at the time and place of delivery to the carrier. Under special circumstances, however, the courts have sometimes given damages against carriers according to the value of the goods at the place of destination.

N. B.—All communications in reference to this department must reach the office on or before the 10th of the month. Increase of correspondence and consequent pressure upon our space, renders the observance of this imperative. We cannot send answers on this kind of subject through the post.

Varia.

Dr. Eliza Walker has just been appointed house physician to the British Hospital for Women and Children. In future medical and surgical appointments will be open to lady candidates.

Mr. Rowton, chemist, Dudley, had a narrow escape on the 7th ult. He was at work with some chemicals over the fire in the kitchen of his residence, in Hall-street, when they caught fire, and an explosion ensued, blowing the bars out of the fire-grate. Mr. Rowton was cut on the forehead.

A French chemist has found sugar of milk in the fruit of *Achoas sapota*, the first instance in which it has been detected as a constituent of plants.

The American papers state that the site is already chosen for the great International Exhibition of 1876, and that on it will be erected the largest building ever yet devoted to a similar purpose. As it is feared that the Custom-house duties may prevent many persons from exhibiting, it has been resolved that no tax shall be levied on articles intended for exhibition unless they are sold in America.

A man advertises in an American paper for a competent person to undertake the sale of a new medicine, and adds that "it will prove highly lucrative to the undertaker."

The following comes from Ohio:

"Under this sod
And under these trees
Lieh the body
of Solomon Pease.
He's not in this hole,
But only his pod:
He shelled out his soul,
And went to his God."

"Lame!" sighed Mrs. Partington. "Here I have been sufferin' the bigamies of death for three mortal weeks. First I was seized with a bleedin' phrenology in the hamph-shire of the brain, which was exceeded by the stoppage of the left ventilator of the heart. This gave me inflammation of the left borax, and now I am sick with the chloroform morbus. There is no blessin' like that of health, particularly when you're ill."

At an inquest held at Bacup the other day on the body of a child who was supposed to have been poisoned, Dr. Stewart, who attended the deceased, declined to give evidence until he was paid his fee, and the coroner was reduced to the necessity of committing the doctor for contempt of court. Finally, he answered a few questions, and on the jury finding that the child died from diarrhoea, and that Dr. Stewart deserved censure for neglecting the deceased, the doctor remarked that "the jury were a parsee of thickheads." The doctor was allowed to leave the court without apologizing.

CEMENT FOR DECAYED TEETH.—*Le Moniteur des Produits Chimiques* publishes the following formula, patented by M. O. Barbaut:—

Calcined Magnesia 1 part.
White Oxide of Lime 2 parts.

Add 1 part sulphate of morphia to every 30 parts of the mixture.

BORAX IN CALIFORNIA.—Discoveries of borax in California and Nevada have been made to such an extent as to warrant the belief that from these sources the markets in the east of the American Continent will at no distant time be able to draw their chief supplies. Borax fields are reported also in Mono County, and those in Esmeralda County are known to be of vast extent. The cost of refining and sending to market has to be taken into account, but allowing for this it is computed that the article will bear a good profit. One of the San Francisco papers calculates that the article once refined will be worth about as much per ton as a great deal of the base bullion which is turned out and shipped from the golden State.

SUBOXIDE OF COPPER.—The following is an easy and simple method of preparing the anhydrous suboxide of copper of a beautiful cinnabar red colour. Dissolve two parts of caustic potash in sixteen parts of water, and add to it one part of starch-sugar (glucose) and one part tartrate of copper. This mixture is then heated until it acquires a bright red colour, when it is immediately thrown into a large quantity of water from which the air has been boiled out.

ALCOHOL IN BREAD.—In a supplement to the *Chemical News* for May 30th is a short paper, by Mr. Thomas Bolus, "On the Amount of Alcohol contained in Bread." He detects a small per-centage of alcohol in six samples of new bread purchased at different shops in London. He says, "It is probable that the amount of alcohol contained in bread is too small to be of any dietetic importance, but it may perhaps be worth while to notice that forty 2-lb. loaves are about equal in alcoholic strength to an ordinary bottle of port."

THE INK OF THE ANCIENTS.—In a letter from Mr. Joseph Ellis, of Brighton, addressed to the *Society of Arts Journal*, he states that, by making a solution of shellae with borax in water, and adding a suitable proportion of pure lamp-black, an ink is produced which is indestructible by time or chemical agents, and which, on drying, will present a polished surface, as with the ink found on Egyptian papyri. He made ink in the way described, and proved, if not its identity with that of ancient Egypt, yet the correctness of the formula, which was given him by the late Mr. Charles Hackett, F.R.S.



THAT London is yearly becoming more and more comprehensively the mart of the world is evidenced by abundance of statistics. Vast quantities of products from all parts of the globe reach this port, and are shipped away again without even passing the Customs. The continual importation of fresh energy into this branch of business so far from having the effect of exhausting the mine has yet only tended to make it more productive. And in all human probability this condition of progress will be continued for a long period yet, interspersed, doubtless, with short periods of depression. The British colonies and the vast continent of America are yet but thinly peopled in comparison with what they will be in the future. These are, and will probably continue to be, our best customers, and growing with mighty strides year by year as they do, it is not wonderful that our trade should grow too.

After all the lugubrious reports respecting our chemical manufactures during the spring, it is found that in the half-yearly returns of the Board of Trade, brought down to June 30, they do not show so very badly. Under "Chemical Products" (other than Alkali) we find the total value of the exports given at £882,903 for the half-year. The corresponding period of last year showed a total of £888,243. The falling off, however, from what *ought to have been* the case is considerable, if allowance is made for a progression which might fairly be anticipated. Compare the sum we have named for 1872 with that of 1871, which was £713,108, and it will be seen at once that a check, not serious, perhaps, but quite enough to talk about, has been given. In regard to

Alkali, however, the case is different. Still quoting by values, we find the following statistics of exports:—

	1871.	1872.	1873.
	£	£	£
To Russia	64,785	72,709	88,671
Germany	90,073	139,589	191,654
Holland	33,983	40,310	51,972
France	30,729	29,455	13,764
United States	401,041	591,809	742,829
Other Countries	172,516	271,707	336,902
Total	793,127	1,145,579	1,425,791

It should be remarked that the quantity actually exported this half-year is only about four tons more than in the first half of 1872, the difference in value being accounted for by higher prices. The extension of business with Germany, and the diminution of exports to France, are suggestive facts.

Some figures recently published show how considerably our export trade in drugs has advanced. Under the heading of "drugs and chemical products unenumerated," which excludes such heavy special items as opium, Peruvian barks, drysalteries, &c., we find that in thirty years, from 1840 to 1870, the value of the exports had increased from £142,902 to £1,382,786. Such facts as these may well stir up our manufacturers and dealers to cultivate export business.

The history of the chemical markets through the month is soon told. Until June 30th the continued dullness which commenced in February was the characteristic of the market. But with July a more lively movement has set in. A steady demand has commenced, and it appears as if speculative buyers regard quotations as sufficiently low to justify them in anticipating actual requirements. A slight fall has occurred in the price of alkali, attributable chiefly to excess of production. But higher rates seemed to be looked for.

Caustic soda, soda ash, and soda crystals have all received more attention, and contracts for the remainder of the year are not generally accepted unless at a slight advance on current quotations. Bleaching Powder has been quiet, but is firmly held. Nitrate of Soda also quiet, and sold at a decline of about 5s. per ton for spot parcels. The inquiry for muriate of potash has led to sales of a fair extent, but without effecting any recovery in price. Sulphate of ammonia for forward delivery in good request at higher rates than those ruling for present. Sulphate of copper steady. Green copperas in active demand. Quicksilver is still dearer, and is now quoted at £15.

The drug market has been particularly quiet, and free from speculative movements. Supplies of most staples are abundant, and consequently as a rule prices are drooping. Senna is an exception. All kinds have been selling freely and are wanted. Castor oil has kept up its value. Camphor is lower. Gums animi, assafoetida, arabic, gamboge, and eopal have all sold at lower prices, and a fall has also occurred in cardamoms.

Olive oil still continues depressed, and some large forced sales from first hands have not tended to strengthen the market. Linseed is also cheaper, and most of the oils are in abundant supply, and have a languishing tendency.

American spirit of turpentine has still further reeided to 33s. Petroleum also continues to decline, and this circumstance seems to impart no animation to the demand. A lot of 500 barrels good P.W. was sold at 1s. 1d. last week, and smaller quantities are disposed of at 1s. 1½d.

A report from Australia informs us that higher prices for stock have prevented the producers of preserved meats from continuing their operations until they hear of better prices from England.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.	1873.		1872.	
	s. d.	s. d.	s. d.	s. d.
ACIDS—				
Aceticper lb.	0 4	to 0 0	0 4 1/2	to 0 0
Citric	4 5	.. 0 0	3 9	.. 0 0
Hydrochlor.per cwt	4 0	.. 7 0	4 0	.. 7 0
Nitric	0 5	.. 0 5 1/2	0 5	.. 0 5 1/2
Oxalic	0 8	.. 0 9	1 1	.. 0 0
Sulphuric	0 0 3/4	.. 0 1	0 0 3/4	.. 0 1
Tartaric crystal ..	1 6 1/2	.. 0 0	1 7	.. 1 7 1/2
powdersred ..	1 6 1/2	.. 1 7	1 7	.. 0 0
ANTIMONY ore.....per ton	220 0	.. 240 0	270 0	.. 290 0
crude ..per cwt	40 0	.. 42 0	40 0	.. 0 0
regulus.. ..	0 0	.. 0 0	0 0	.. 0 0
star	53 0	.. 60 0	72 0	.. 75 0
ARSENIC lump.....	20 0	.. 0 0	18 6	.. 0 0
powder.....	10 0	.. 0 0	7 9	.. 0 0
BRIMSTONE, rough ..per ton	125 0	.. 145 0	145 0	.. 150 0
rollper cwt	10 0	.. 0 0	10 0	.. 0 0
flour.....	11 6	.. 12 6	12 0	.. 12 6
IODINE, dry	1 6	.. 1 7	1 11	.. 2 1
IVORY BLACK, dry...per cwt.	3 6	.. 0 0	8 6	.. 0 0
MAONIESIA, calcined..per lb.	1 6	.. 0 0	1 2	.. 1 3
MERCURY.....psr hottls	290 0	.. 0 0	230 0	.. 0 0
MINIUM, red	25 6	.. 0 0	21 3	.. 21 6
orange	35 6	.. 0 0	31 6	.. 32 0
PRECIPIATE, redper lb.	4 0	.. 0 0	3 7	.. 0 0
white	4 9	.. 0 0	3 5	.. 0 0
PRUSSIAN BLUE	0 0	.. 0 0	0 0	.. 0 0
SALTS—				
Alumper ton	162 6	.. 165 0	155 0	.. 160 0
powder	182 6	.. 185 0	165 0	.. 180 0
Ammonia:				
Carbonate	0 7 1/2	.. 0 7 1/2	9 7	.. 0 7 1/2
Hydrochlorate, crude,				
white.....per ton	650 0	.. 0 0	630 0	.. 0 0
British (see Sal Ammonic)				
Sulphate	355 0	.. 365 0	430 0	.. 440 0
Argol, Cape	87 0	.. 96 0	72 6	.. 90 0
France	75 0	.. 85 0	65 0	.. 70 0
Oporto, red	32 0	.. 32 6	35 0	.. 37 6
Sicily	60 0	.. 65 0	60 0	.. 70 0
Ashes (see Potash and Soda)				
Bleaching powd...per cwt.	12 0	.. 12 3	13 9	.. 0 0
Borax, crude	50 0	.. 95 0	60 0	.. 75 0
British refnd.	105 0	.. 0 0	95 0	.. 0 0
Calomcl	4 5	.. 0 0	3 4	.. 0 0
Copper:				
Sulphate	30 6	.. 31 0	35 0	.. 0 0
Copperas, green ..per ton	60 0	.. 62 6	60 0	.. 62 6
Corrosive Sublimate..p.lh.	3 8	.. 0 0	2 9	.. 2 9
Cr. Tartar, French, p.cwt.	106 0	.. 107 6	105 0	.. 110 0
brown	87 6	.. 95 0	97 6	.. 100 0
Epsom Salts	5 9	.. 6 3	5 9	.. 6 3
Glauber Salts	4 6	.. 6 6	4 6	.. 6 0
Lime:				
Acetate, white, per cwt.	14 6	.. 21 0	14 0	.. 22 6
Magnesia: Carbonate ..	42 6	.. 45 0	42 6	.. 45 0
Potash:				
Bichromate	0 8 1/2	.. 0 0	0 8	.. 0 0
Carbonate:				
Potashes, Canada, 1st				
sort	27 0	.. 37 6	41 0	.. 0 0
Pearlashes, Canada, 1st				
sort	50 0	.. 51 0	59 0	.. 0 0
Chlorate	1 4 1/2	.. 0 0	1 6	.. 0 0
Prussiate	1 4	.. 0 0	1 6 1/2	.. 1 7
red	3 1	.. 0 0	3 1	.. 0 0
Tartrate (see Argol and Cream of Tartar)				
Potassium:				
Chlorido	8 6	.. 9 0	9 9	.. 10 0
Iodido.....per lb.	22 0	.. 0 0	35 0	.. 0 0
Quinine:				
Sulphate, British, in				
bottles	8 3	.. 0 0	7 9	.. 0 0
Sulphate, French ..	8 0	.. 0 0	7 6	.. 0 0
Sal Acetos.....per lb.	1 1 1/2	.. 0 0	1 4 1/2	.. 0 0
Sal Ammoniac, Brit. cwt.	44 0	.. 45 0	43 0	.. 49 0
Saltpetro:				
Bengal, 6 per cent or				
under	25 3	.. 26 0	28 9	.. 29 9
Bengal, over 6 per cent.				
por cwt.	22 6	.. 25 0	27 6	.. 28 6
British, refined ..	29 6	.. 31 0	32 6	.. 33 6
Soda: Bicarbonate, p.cwt.	18 3	.. 0 0	16 3	.. 16 6
Carbonate:				
Soda Ash.....per deg.	0 2 1/2	.. 0 2 1/2	0 2 1/2	.. 0 3
Soda Crystals per ton	125 0	.. 127 6	137 6	.. 140 0
Hyposulphito..per cwt	15 6	.. 16 0	16 0	.. 17 6
Nitrate	14 0	.. 14 6	15 6	.. 16 0
SUGAR OF LEAD, White, cwt.	48 0	.. 0 0	45 0	.. 46 0

	1873.		1872.	
	s. d.	s. d.	s. d.	s. d.
SUGAR OF LEAD, Brown, cwt.	32 6	to 33 0	31 0	to 0 0
SULPHUR (see Brimstone)				
VERDIORIS	1 1 1/2	.. 1 2	1 1	.. 1 3
VERMILION, English.. ..	4 4	.. 4 6	3 6	.. 3 8
China.....	4 2	.. 4 3	4 3	.. 4 4
DRUGS.				
ALDES, Hepatic....per cwt.	80 0	.. 200 0	100 0	.. 240 0
Socotrine ..	110 0	.. 320 0	160 0	.. 460 0
Cape, good.. ..	30 0	.. 34 0	25 0	.. 27 0
Inferior	20 0	.. 29 0	20 0	.. 24 0
Barbadoes ..	70 0	.. 190 0	75 0	.. 200 0
AMBERORIS, gray.....oz.	20 0	.. 39 0	24 0	.. 29 0
BALSAM —				
Canada	3 6	.. 0 0	1 6	.. 0 0
Capivi	2 6	.. 2 9	2 3	.. 0 0
Peru	9 0	.. 9 1	9 6	.. 0 0
Tolu	1 11	.. 2 0	1 6	.. 0 0
BARKS—				
Canella albaper cwt.	15 0	.. 25 0	15 0	.. 25 0
Cascarilla.....	26 0	.. 35 0	22 0	.. 37 0
Peru, crown & grey per lb.	1 0	.. 2 10	1 6	.. 3 1
Calisaya, flat ..	3 3	.. 3 9	3 2	.. 3 4
quill	3 4	.. 5 0	3 2	.. 3 4
Carthagena ..	0 10	.. 1 8	0 10	.. 2 0
Pitayo	0 6	.. 2 0	0 9	.. 1 10
Red	1 10	.. 6 0	1 10	.. 6 0
BucbuLeaves	0 2	.. 1 0	0 3 1/2	.. 1 1
CAMPHOR, China.. per cwt.	75 0	.. 76 0	86 6	.. 87 6
Japan	32 6	.. 0 0	87 6	.. 0 0
Refin Eng. per lb.	1 2	.. 0 0	1 3 1/2	.. 0 0
CANTHARIDES	6 0	.. 6 6	5 6	.. 6 0
CHAMOMILE FLOWERS p.cwt	45 0	.. 75 0	45 0	.. 70 0
CASTOREUM	6 0	.. 20 0	3 0	.. 30 0
DRAGON'S BLOOD, lq. p.cwt.	110 0	.. 240 0	110 0	.. 220 0
FRUITS AND SEEDS (see also Seeds and Spices)				
Anise, China Star pr cwt.	120 0	.. 137 6	120 0	.. 0 0
Spanish, &c.	20 0	.. 42 0	35 0	.. 40 0
Beans, Tonquin .. per lb.	3 7	.. 4 0	1 0	.. 1 8
Cardamoms, Malabar				
good	4 6	.. 7 6	6 6	.. 7 3
inferior ..	3 3	.. 4 0	5 0	.. 6 3
Madras ..	1 2	.. 4 6	2 6	.. 6 0
Ceylon ..	4 4	.. 5 0	4 2	.. 4 3
Cassia Fistula.. per cwt.	10 0	.. 20 0	12 0	.. 30 0
Castor Seeds ..	5 0	.. 10 0	10 0	.. 12 0
Cocculus Indicus ..	16 0	.. 21 0	14 0	.. 15 6
Colocynth, apple..per lb.	0 4	.. 0 9	0 3	.. 0 6
Croton Seeds .. per cwt.	52 0	.. 55 0	55 0	.. 59 0
Cubebs	29 0	.. 32 0	25 0	.. 28 0
Cummin.....	18 0	.. 26 0	35 0	.. 40 0
Dividivi	12 0	.. 15 0	14 0	.. 15 6
Fenugreek.....	9 0	.. 23 0	12 0	.. 22 0
Guinea Grains ..	25 6	.. 26 6	50 0	.. 51 0
Juniper Berries ..	9 0	.. 10 6	11 6	.. 12 0
Myrabolans	9 0	.. 14 0	12 0	.. 17 6
Nux Vomica.....	10 6	.. 16 6	12 0	.. 16 6
Tamarinds, East India ..	5 6	.. 18 0	2 0	.. 14 0
West India, new ..	24 0	.. 34 0	25 0	.. 39 0
Vanilla, large per lb.	70 0	.. 80 0	45 0	.. 55 0
inferior ..	35 0	.. 67 0	27 0	.. 43 0
Wormseed .. per cwt.	0 6	.. 0 0	0 0	.. 0 0
GINORR, Preserved, in bond				
(duty 1d. per lb.) porlb.	0 6	.. 0 9	0 6 1/2	.. 0 10 1/2
GUMS (see separate list)				
HONEY, Chili per cwt.	28 0	.. 38 0	38 0	.. 50 0
Cuba	0 0	.. 0 0	35 0	.. 50 0
Jamaica.. ..	25 0	.. 45 0	30 0	.. 55 0
Australian ..	22 0	.. 42 0	10 0	.. 0 0
IPECACUANHA per lb.	3 6	.. 4 0	5 3	.. 5 4
ISINGLASS, Brazil.. ..	3 0	.. 5 1	2 8	.. 4 5
Tongue sort ..	3 4	.. 5 3	3 3	.. 5 2
East India ..	1 10	.. 4 4	1 4	.. 4 3
West India ..	4 3	.. 4 5	3 13	.. 5 2
Russ, long staple	8 0	.. 12 6	6 0	.. 9 6
inferior, ..	3 6	.. 7 6	3 6	.. 7 6
Simovia ..	2 6	.. 4 6	2 0	.. 3 6
JALAP, good	1 6	.. 2 0	1 6	.. 2 8
infer. & stems ..	1 2	.. 1 4	0 6	.. 1 5
LEMON JUICE .. per degree	0 2 1/2	.. 0 0	0 2	.. 0 2 1/2
LIQUORICE, Spanish per cwt.	0 0	.. 0 0	35 0	.. 37 0
Italian	60 0	.. 90 0	40 0	.. 60 0
Liquorice Root ..	10 0	.. 15 0	0 0	.. 0 0
MANNA, flaky per lb.	2 6	.. 3 3	3 3	.. 3 6
small.....	1 4	.. 1 6	1 10	.. 2 0
MUSK, Pod	20 0	.. 43 0	20 0	.. 40 0
Grain	54 0	.. 55 0	0 0	.. 0 0
OILS (see also separate List)				
Almond, expressed per lb.	1 0	.. 0 0	1 1	.. 0 0
Castor, 1st pale	0 6	.. 0 0	0 5 1/2	.. 0 0
second	0 5 1/2	.. 0 5 1/2	0 5	.. 0 5 1/2
infer. & dark ..	0 5	.. 0 0	0 4 1/2	.. 0 5
Bombay (in casks)	0 4 1/2	.. 0 0	0 4 1/2	.. 0 4 1/2
Cod Liver	4 6	.. 6 6	4 6	.. 5 0
Croton.....per oz.	0 3	.. 0 4	0 3	.. 0 4
Essential Oils:				
Almond	30 0	.. 0 0	35 0	.. 0 0
Anise-seed	10 3	.. 10 6	10 6	.. 11 0
Bay	0 0	.. 0 0	65 0	.. 70 0
Bergamot	9 0	.. 20 0	8 0	.. 15 0
Cajuput, (in bond) per oz.	2 4	.. 2 5	0 0	.. 0 0
Caraway	5 6	.. 6 3	5 6	.. 6 3
Cassia	6 0	.. 6 3	6 0	.. 0 0
Cinnamon	0 8	.. 8 6	1 0	.. 5 6
Cinnamon-leaf.. ..	0 2	.. 0 3 1/2	0 2	.. 0 5
Citronelle	0 1 1/2	.. 0 2	0 2 1/2	.. 0 2

Table listing various commodities such as Essential Oils, Oils, Spices, and Gums, with columns for descriptions and prices in pounds and shillings for the years 1872 and 1873.

