







OFFICE,

COLONIAL BUILDINGS—44A CANNON STREET, LONDON, E.C.

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### TO SUBSCRIBERS.

WE shall be much obliged to all subscribers who favour us with a renewal of their support for next year; and we shall especially thank those gentlemen who out of consideration for our clerks are good enough to remit their 1875 subscriptions *this month*. These remarks of course apply only to those whose term of subscription expires with December. It will be remembered that the annual subscription is 10s., for which we supply post-free the twelve monthly numbers and the annual diary. As the question is sometimes asked us, we may here state that we must decline henceforth to enter any subscription for less than a year, or for the journal only. Of course subscriptions paid for 1875 will include the 1876 diary. Subscribers wishing for copies of the 1875 diary will be supplied at 2s. 6d. each; to non-subscribers the price is 3s. Remittances are to be made payable to Edward Halse; post-office orders payable at the General Post Office; cheques and post-office orders to be crossed "Martin & Co." Receipts will not be sent except when a stamp is enclosed for the purpose.

Advertising firms will please remember our great January circulation. We shall be happy to send prospectuses to any one desirous of making an announcement on that occasion, and we shall be glad to make contracts for the new year at once.



The Chemists' Ball is fixed for Wednesday evening, January 20, and will be held, as usual, at Willis's Rooms. In our advertisement pages will be found the list of the gentlemen to whom application may be made for tickets.

The Pharmaceutical Council met on the 2nd instant, and after the official business had been disposed of proceeded to discuss the application from Manchester for 50l. The committee to which the subject had been referred recommended that the request should be granted. Mr. Bottle put a few inquiries, and Mr. Schacht, as a member of the committee, demonstrated the grounds on which the decision had been arrived at. The Manchester Society, he said, had established, and for years had worked, their scheme of education, which was an excellent one, and the use to which they proposed to apply this grant was to pay lecturers. If the amount was somewhat large, so was the district, and Mr. Schacht urged the grant, even as an experiment. Mr. Brown entered more into details, and withdrew his former remark that the grant would have to be made annually. He hoped this 50l. would help Manchester to accomplish greater

things, and that ultimately a worthily endowed school of pharmacy would be established in that great centre. Mr. Sandford was glad to vote for this grant, and wanted to see other provincial associations make out cases for aid. He would not stipulate that money thus voted should be applied to a particular purpose if it assisted a society to advance education. Mr. Hampson would not oppose the vote, but expressed his hope that, in time, students would be willing to pay market value for their education. Messrs. Radley, Atherton, Baynes and Frazer united in supporting the vote, and hinted that corresponding applications might be looked for from other towns. The grant was unanimously agreed to. The Benevolent Fund came under consideration, and the Secretary stated that subscriptions during the past year were already 150l. in advance of the previous year. Some alterations were made in the Board of Examiners, Messrs. Haselden and John Moss replacing Messrs. Cracknell & Davenport.

At the evening meeting of the Pharmaceutical Society on December 2 some interesting communications were made, which were followed by good discussions. Professor Bentley exhibited some specimens of the new tonic boldo, of which, it appears, there is a flourishing plant at the gardens of the Royal Botanic Society. Dr. Richard Goddefroy, of Vienna, sent a Paper in which he proposed a new test for glycerine. He said if perfectly pure it would burn without leaving any residue, if previously heated to 150° Celsius, when it would boil. Metallic impurities would be charred, and more highly organised contaminations would be charred, but would not be volatilised. Dr. Goddefroy added that glycerine could be ignited very easily by means of a wick. Mr. Robbins said he thought the test, though a good one, was not quite new. He referred to some experiments made by Dr. Draper (he believed) some years ago, who had detected grape sugar in some foreign glycerine by this very method. Professor Atfield showed the test practically, and pointed out that the fact noticed by Dr. Goddefroy, namely, that glycerine would burn with a wick, was new. Mr. John Moss said it would not do to test all samples of glycerine by this process, as in some cases, when a lead salt and carbonaceous residue were left in presence of the heat employed, the latter would reduce the former, and the lead might form an alloy with the platinum of the vessel, to the detriment of the latter. Mr. Moss had also tested the temperature named in the paper and thought there was some error. At 150° C. a few bubbles escaped, but true boiling did not seem to occur until 230° or 240° C. He had found it impossible, too, to ignite the glycerine at a lower temperature than 185°.

Mr. J. B. Barnes detailed some experiments showing that the addition of a small proportion of chloroform to fresh infusions would preserve them without apparent change for some period of time. He had tested infusions of calumba, chiretta, malt, senna, and roses, and had found that 5 minims to 8 ounces had preserved those infusions for more than a fortnight, while for roses 3 minims to 8 ounces had sufficed. Mr. F. J. Barrett, as the dispenser at the Wolverhampton Hospital, had for years adopted a similar method. Mr. Umuey remarked that in some cases the addition of even so little chloroform might be regarded as a medicinal interference, and Mr. Greenish said that the specimens submitted smelt strongly of chloroform. Mr. Haselden and the President advocated the regular employment of fresh infusions.

Mr. Umuey communicated the result of his experience with regard to liquid extract of liquorice. Last April, in his Paper on the additions to the Pharmacopœia, he had questioned whether the proportion of rectified spirit (11 per cent.) would be found sufficient. He had set some aside since, and found that a process of fermentation had set in in the course of three or four months, while now the preparation

was partially gelatinised, and there was a considerable yellow deposit. He said the preparation was a very desirable one; the process given for its production was perfectly sound in principle; but apparently there was not sufficient of the preservative agent. He was now commencing some experiments to test whether a larger quantity of alcohol or glycerine or some other fluid is desirable. Mr. Martindale corroborated Mr. Unney's results by independent experiments.

The Society of Public Analysts held a second meeting on December 1 at the Cannon Street Hotel, under the presidency of Professor Redwood. The rules and constitution of the society were arranged. In addition to public analysts, all analysts are eligible for election as members, and their assistants as associates. The former will pay one guinea entrance fee and one guinea per annum subscription; the latter will pay five shillings per annum, but will be elected for three years at a time only. The Society is stated to be formed for the purposes of promoting the efficiency of the laws relating to adulteration, securing the appointment of competent analysts, and generally advancing the art of detecting sophistications. The officers elected were: President, Professor Redwood, Ph.D.; Vice-Presidents, A. H. Hassall, M.D., and J. A. Wanklyn, M.R.C.S.; Honorary Secretaries, C. Heisch and G. W. Wigner; Treasurer, T. Stevenson, M.D.; other Members of Council, Messrs. A. H. Allen, A. J. Bernays, C. Estcourt, G. A. Rogers, M.R.C.S., F. Sutton, and J. W. Tripe, M.D. A definition of what might be regarded as an adulterated article had been drawn up by the Council, and it was now proposed that the Society should adopt the same. A long discussion ensued, from which it did not appear as if any adulteration rubric would have much chance of unanimous acceptance, and ultimately the definition was referred back to the Council. We allude to the subject elsewhere.

The Board of Inland Revenue has commenced an action against a Hull chemist for the sale of a bitter tincture known as "Pick-me-up," or "Morning Tonic." The case is not yet decided. It is being defended by the Hull Chemists' Association. We refer to the case at more length elsewhere.

At the November Pharmaceutical Examinations two candidates offered themselves for the Major and both passed, but for the Minor only four out of fifteen were successful.

Dr. B. W. Richardson, F.R.S., is delivering the current course of Cantor Lectures (Society of Arts), on the Action and Use of Alcohol. These promise to be of considerable value, and we hope later on to give an abstract of them.

The portrait of Dr. Muter, of the South London School of Pharmacy, which we present this month, will probably interest many of our subscribers. Dr. Muter occupies such a prominent position in pharmaceutical attention just now that a personal acquaintance is desirable.

We regret to notice the death of Mr. Robert Low on the 18th of November last, in his seventy-fifth year, the head of the firm of Low, Son & Haydn, in which he had been a partner for fifty-three years. He was a man of great benevolence, and was highly esteemed by a large circle of friends. Mr. Low only survived his wife a few months.

Some consular reports on Indian opium have recently been published, from which it seems that the Chinese cultivation of the drug is considerably on the increase. This is a serious prospect for the Indian Revenue, and it will be but a poor sort of virtue if the British Government decides to check the opium traffic with China only when it is found that the profit derived therefrom is slipping through our fingers.

1874.

ANOTHER year has almost faded from our view, and in the lapse of a brief fortnight will be numbered with the past. Its career, as far as pharmacy is concerned, has not been marked by many sensational events; still the record will neither be uninteresting nor devoid of interest. The British Pharmaceutical Conference held its annual gathering in London, its *séance* being marked by the production of Papers of more than average ability, read before a comparatively scanty audience. Two notable addresses have been delivered—one by Mr. R. W. Giles, who took pseudo-learning for his theme; and the other by Mr. Schacht, who discoursed upon abstract science. The Board of Examiners has introduced a large measure of practical questioning into their system. The School of Pharmacy has re-arranged the duration of its courses; while the South London School has extended its curriculum and built a students' laboratory, furnished with the latest modern improvements. Important meetings of British analysts have been held under the supervision of Professor Redwood, and loud cries have been raised against the working of the Adulteration Act.

In consequence of the great dissatisfaction expressed by the public, and sundry cases of inconvenience, not to say injustice, resulting both to traders generally and to pharmacists, energetic measures have been set on foot to place the whole question on a more equitable footing.

A preliminary meeting of public analysts was held at the Cannon Street Hotel, Professor Redwood in the chair. Many eminent analysts were present, and protective resolutions in favour of those conducting public analyses were passed. Strong opposition to the authoritative supervision of the Somerset House officials was evinced, and it was unanimously determined to establish an association of public analysts for the purpose of mutual assistance and co-operation.

Evidence on the working of the Adulteration Act was given before a select committee of the House of Commons, when several well-known individuals gave the benefit of their experience. Their opinion was entitled to especial consideration, as they were undoubtedly familiar with the whole bearing of the matter practically and theoretically; while their commercial standing on the one hand, or their scientific acquirements on the other, gave value to the expression of their views. The Society of Public Analysts have not let the subject rest, and at their second meeting considerable advance was made in the task of consolidating their operations: the establishment of their Association may be accepted as a fact, and as their first essay they have endeavoured to give a definition of the difficult term adulteration. Out of the mass of illustrations of the working of the Adulteration Act, two prosecutions have excited general notice; both vital to trade interests. The first related to quinine supplied by Messrs. Howard, a firm which druggists regard without fear, and which certainly is without reproach.

Mr. W. S. Pearson was summoned for having sold quinine, adulterated with sulphate of cinchonine. Mr. Wentworth Scott gave an unfavourable analysis. Professor Atfield reported the sample to be pure. Dr. Paul being made the referee, confirmed the first evidence. It was held, therefore, that two different articles had been submitted for examination; judgment given accordingly against the chemist. Mr. Pearson was advised to take proceedings against the house that had supplied him with the drug.

The next prosecution mentioned involved a serious commercial issue.

This *cause célèbre* was tried on June 17, Mr. Cocks, of

Chancery Lane, having been summoned for selling scammony adulterated with 8 per cent. of flour and 3 per cent. of chalk. Mr. C. H. Piesse, analyst to the Strand Board of Works, said the chalk and flour were not inherent, but must have been added to the sample. It contained about 73 per cent. of resin, and he admitted that it was a very good specimen of commercial scammony, but that he had proved the presence of adulterants. Mr. William Squire (Hearon, Squire and Francis) who had supplied the scammony, gave his evidence. He described the method of its collection, and stated that this was the best procurable in the market. He had given for it 30s. a pound. Professor Atfield affirmed that it was genuine and unadulterated, and contained 76 per cent. of resin. It was impossible to prevent the impurities complained of in the summons. Case dismissed, but costs not allowed. Had the decision gone otherwise, the sale of scammony would have been practically stopped.

An amusing instance of the working of the "Adulteration Act" was shown in the prosecution of a confectioner at Southwark for selling *Conversation Lozenges*. They were found to be manufactured of good sugar, but the microscope revealed the presence of a ten-thousandth part of powdered glass, and a tenth of starch. The lawyer for the defence characterised the affair as a very paltry transaction. The magistrate (Mr. Benson) said he had not much respect for those vestries who prevented their officers from performing their duty. He dismissed the summons in the present case, with a caution to use no blue starch in future.

In connection with this subject, the prosecution respecting sweet spirit of nitre will not be easily forgotten. The analyst was totally unacquainted with the pharmacy of the preparation. To Mr. Umney is due the credit of explaining that which was familiar to every chemist and druggist; but their interests could not have been in better hands. After all, we can at present come to no better conclusion than the conviction expressed by Mr. Sandford—"I see more reason to complain of the administration of the Act than of the Act itself." This, we doubt not, is the universal opinion.

During the past twelve months the Pharmaceutical Society has been free from disturbing political influences, and save the great Irish scheme for the establishment of pharmacy in the sister isle, little has transpired that would engross the attention of the outside world; it has had time, therefore, to concentrate its efforts on its internal arrangements.

The evening meetings have not till recently been in a flourishing condition. Some years ago the late Jacob Bell expressed his fears that these would cease to be a general attraction. Present experience confirms this foreboding, and neither have Papers been presented with sufficient readiness, nor have the members eagerly availed themselves of the advantages offered. Many causes for this defection are at work, and no great disappointment need be felt. In the first place, all societies have their fluctuations, and the most learned body sometimes has to air its science in an atmosphere of empty benches. Secondly, there is intense competition in meetings of special interest, as any weekly list will show: nor must it be forgotten that there are a number of admirable high-class amusements which have an influence on the younger student. Thirdly, the rise of other associations of necessity decreases the supply of London Papers: and lastly, there is a dread on the part of many writers lest their communications should be exposed to too rigid criticism. Notwithstanding these undeniable reasons, London should assert herself, and might trust to her own resources to be recognised as one of the foremost exponents of English pharmacy.

Happily, these remarks do not apply to the evening meetings of the newly commenced session. Let us hope that work begun with so much spirit will be continued to the end.

The annual meeting of the Pharmaceutical Society was held on Wednesday, May 20. The proceedings were without general interest, though two subjects were discussed—Education and the Benevolent Fund. To this must be excepted the thoroughly common-sense attempt of Mr. Atkins to withdraw the Preliminary Examination from the Pharmaceutical Society. He contended that this ordeal is in no way technical or professional, but purely scholastic and literary. At the adjourned meeting the Council was elected, the four first on the list being Messrs. Hills, Sandford, Schacht, and Mackay.

The annual distribution of prizes took place on Wednesday, October 7, before a crowded audience. The various professors addressed the meeting and commented on the position of the school. The annual address was given by Mr. Giles, of Clifton, being his last public act in connection with the Society.

It would be of doubtful utility to enumerate the various Papers that have been read; some, however, have a special interest, and amongst these may be mentioned the one on camphor.

Ordinary camphor used by the Chinese is produced in Japan and Formosa from the *Cinnamomum Camphora*. A camphor of much higher value comes from Borneo and Sumatra, from the stem of the *Dryobalanops aromatica*.

Intermediate in value between the two is the N-gai camphor, a brief notice of which was communicated by Mr. Daniel Hanbury. It is extremely white, extracted from the leaves of a plant known in China under the name of N-gai, a variety of *Artemisia*. It occurs in crystals, which are very pure, clear and brittle, with a shining fracture. The relative prices are as follows:—

		Dols.
Formosa camphor	.. .. .	25
Japan	.. .. .	30
N-gai	.. .. .	250
Malay	(1st quality) .. .. .	2,000
"	(2nd quality) .. .. .	1,000

Two specimens were forwarded by Mr. F. H. Ewer, of Canton, together with a small branch of the plant from which it is produced.

The purer sample could not be distinguished by its odour from ordinary camphor; while the other is perceptibly contaminated with a smell like that of wormwood. N-gai camphor, like that of *Dryobalanops*, sinks in water. The plant proved to be no species of *Artemisia*, though a member of the same order—the *Blumea balsamifera*, D. C., a tall, coarse-looking, herbaceous plant of Eastern Asia, an abundant weed in Assam and Burma, and common throughout the Indian Islands.

Probably the *Blumea* is not the sole source, as, according to Mr. Ewer, the character N-gai is applied to designate several plants, including both *Labiata* and *Compositae*. The camphor is used not only in medicine, but in the manufacture of the scented kinds of Chinese ink. 3,000*l.* worth is annually exported from Canton to Shanghai and Ningpo. Mr. Sydney Plowman elucidated the chemistry of this camphor. From experiment it seems that N-gai camphor is isomeric with Borneo camphor, but differs in physical properties, viz., its much higher volatility, its perceptibly different odour, and somewhat greater hardness and brittleness. N-gai camphor may be considered a monatomic alcohol of the series  $C_nH_{2n}311O$ , viz.,  $C_{10}H_{17}HO$ , the aldehyd of which is laurel camphor,  $C_{10}H_{16}O$ .

The publication of an unpretending-looking pamphlet, small in size, and inexpensive, and which yet was the British Pharmacopœia Addendum, led both to sundry Papers and to much debate.

Thirty-four new remedies and substances used in the preparation of medicine were officially added to the British Pharmacopœia. Many of these were already favourably known to dispensing pharmacy.

Mr. Charles Umney criticised the addendum in a masterly

and careful manner; his example was not followed in subsequent discussions, and Mr. E. Smith, of Torquay, ridiculed it in no measured terms, while Mr. Carteighe complained that the active assistance of practical pharmacists had not been obtained. Dr. Redwood defended the official publication. Its formulæ were intended for medical practice, and not in the first instance to suit the requirements of commercial pharmacy. Thus, the syrup of chloral intentionally contained little sugar, and was destitute of flavouring ingredients; the hypodermic solution of morphia was of diluted strength; and the ammoniated tincture of quinine did not possess the stimulating qualities found in the trade preparation. Flavour or aromatic character might be added at the discretion of the physician. In the Pulvis Glycyrrhizæ Comp. both the fœnel and sulphur were omitted in order to obviate the production of a disagreeable compound. He considered that the title "Liquor Magnesie Citratæ" well expressed the nature of the solution, and that the remaining formulæ had not been issued to the public without due medical and pharmaceutical consideration. It is surely desirable that such an Addendum should be offered at stated intervals, without waiting for a long lapse of time, in order to introduce important remedies.

One other word in Mr. Umney's praise, who supplied an excellent short Paper on the waste in the official method of making belladonna liniment. His figures are conclusive; he proved to demonstration that the belladonna was not even half exhausted at the stage at which the British Pharmacopœia directs the percolation to be stopped. He suggests the use of half the quantity of belladonna in fine powder, 20 ounces being produced with the slowest percolation.

At the November meeting Professor Redwood, in one of his happiest and most effective speeches, defended the composition of the B. P. phosphorus pill. When administered it might easily be made to assimilate with the contents of the stomach by adding one grain of soap to three grains of the pill-mass. If the phosphorus were dissolved in suet (by no means a bad plan) the addition of a little phosphate of lime would give it the requisite pilular consistency.

Lastly, an important discussion took place in November respecting the nomenclature of the proposed International Pharmacopœia. It was introduced by Mr. Thomas

Greenish, who was the English co-delegate with Mr. Sutton to the Congress at St. Petersburg. The chief speakers were Professor Attfield and Professor Redwood. It was the unanimous opinion of those present that the Latin nomenclature advocated by Dr. Attfield, and already adopted in the American Pharmacopœia, had the greatest claim.

If, as has been said, few political questions have appeared in the pharmaceutical horizon, the arrangement of the new examinations have tasked to the utmost the patient thought and skill of the authorities.

Dating from July, the Preliminary Examination underwent important changes. Centres were chosen for England, Wales, Preliminary and Scotland. Superintendents and deputy Examination. superintendents were authorised, those officers to be preferably selected from the local secretaries, and to receive a guinea fee for each examination. Medical Latin was to be discontinued after 1874; a suitable apartment other than one in the superintendent's house was to be engaged at a rent not higher than ten shillings; full printed instructions were to be read aloud to candidates before commencing their examination papers.

The record of the result of the Preliminary Examinations is far from encouraging when it is recollected that they are essentially of an elementary character.

The method of conducting the Minor Examination has been changed so far as to make it of an essentially practical character; the fears respecting the increased stringency of its regulations are unfounded. Changes have been effected in the Major Examination also, and naturally a throng of candidates crowded in to the last under the old system, which was held in July.

Twenty presented themselves for the Major, and fifteen passed. Three hundred and three presented themselves for the Minor, and ninety passed.

The first examination under the new system was held on October 9, 1874. The result was to be expected at this early stage, but, nevertheless, it was deplorable. Two candidates only presented themselves for the Major—both failed. Seven went up for the Minor, and five failed. The Modified Examination possesses no interest.

The following tabular statement, corrected to November, will be instructive:—

## EXAMINATIONS, 1874.

	Passed	Number of Candidates		Passed	Number of Candidates
January—			June—		
Major .. ..	5	7	Major .. ..	4	5
Minor .. ..	27	78	Minor .. ..	46	127
February—			July—		
Major .. ..	4	4	Major .. ..	16	22
Minor .. ..	34	79	Minor .. ..	109	343
March—			September—		
Major .. ..	5	5	Minor .. ..	28	75
Minor .. ..	41	116	October		
April—			Major .. ..	—	2
Major .. ..	7	8	Minor .. ..	2	7
Minor .. ..	42	154	November—		
May—			Major .. ..	2	2
Major .. ..	2	4	Minor .. ..	4	15
Minor .. ..	25	87	December	—	—

## Preliminary Examination.

	Passed	Number of Candidates
January .. ..	129	259
April .. ..	195	397
July .. ..	178	355
October .. ..	99	243
Total .. ..	601	1,254

## Modified Examination.

Total Number of Candidates .. ..	73
Passed .. ..	41

In November the Council entertained the proposal of more frequent changes in the election of the examiners, it being argued that those who had for some years discharged their duties might possibly fall into a groove. It was contended, on the other hand, that a certain amount of experience was advantageous to even the most skilful examiner.

The literature of the subject of examinations has been enriched by an admirable address by Bishop Temple, which was delivered at the public distribution of prizes awarded to pupils at the Christmas examination of the College of Preceptors. It was on the general subject of examinations, and excited much attention. He pointed out the growing danger of directing educational training solely with a view of satisfying the requirements of a Board; that learning was apt to shape itself into a particular mould, and that knowledge of that description would prove of little service in after life.

The School of Pharmacy may be regarded in a transition state, and we have yet to learn the advantage or otherwise of a shortened curriculum.

At the ordinary meeting of the Council in August reports were laid before the General Purposes Committee about the position of the school. In an educational point of view it was said to be successful, but there was a serious diminution in the financial receipts of the professors, consequent on the introduction of new regulations.

Not to be omitted is the proposal by Mr. Schacht to found ten scholarships open to competition, and an attempt made to gain the admission of female students to the laboratory, which, after some discussion, was refused.

Another association, starting from the parent society, has been vigorously at work, and great preparations were made during the early part of the year for the reception of the British Pharmaceutical Conference, the Inns of Court Hotel being selected as the headquarters of the guests. The eleventh annual meeting was held in Loudon at the house of the Society in Bloomsbury Square. President: T. B. Groves, F.C.S., of Weymouth. The proceedings opened on August 5. The chief Papers were:—"On the Chemistry of the Cinchenas," by Dr. Do Vrij; "The Uses of Oleic Acid," by Professor Tichborne; "The Preparation of Hydrocyanic Acid," by Mr. L. Siebold; and "Its Preservation by Means of Glycerine," by Mr. Williams. Also an excellent report "On Official Plasters," by Mr. A. W. Gerrard. Hitherto the Conference has followed in the wake of the British Association, but "urgent private affairs" in Ireland prevented.

The meetings of the elder society were held in Belfast, Dr. Tyndall holding the presidential chair. Three remarkable discourses were read: one by Dr. Hooker, "On the Carnivorous Habits of some Plants;" another by Sir John Lubbock, "On Common Wild Flowers considered in Relation to Insects;" and a third by Professor A. Crum Brown, "On Chemical Constitution."

Many other valuable communications were made. The number of tickets issued amounted to 1,950, and considerable discussion has arisen on the subject of the President's address.

Every successive year leads us to watch with increasing interest the progress of our Provincial Associations. Their career, taken as a whole, though with a few striking exceptions, has not been encouraging. Members have been few and apathetic, and general attendance scanty. Liverpool has a good show of 155 members: that is satisfactory, and the council have worked well; but the financial statement betrays a deficiency. The library books are reported to have been delivered in an irregular manner, and there is a mysterious notice that although two special lectures on study were arranged "your council greatly regret that all this has been in vain." We would observe that when the librarian gets the princely sum of 4*l.* for his annual labours, too much enthusiasm must not be expected on his part, and while Liverpool so muzzles the ox she must not be surprised that the animal treads out little corn. This year the association opened with an address by the President, Mr. Alfred H. Mason. He observed that they were not a trade body, and that trade discussions invariably tended to the bad. He then proceeded to show how greatly scientific research had aided trade; but he did not explain why this help should have been vouchsafed in favour of a pursuit which they did not follow. Pharmacy was not a trade. He complained that the classes had fallen off from want of sympathy in those attending. Cram had wrought its baleful influence, and was a very dreadful thing; but there was a good time coming, and he hoped for better days.

Norwich it is impossible to understand—the very home of intellectual cultivation, and numbering amongst its inhabitants several distinguished pharmacists. The real question of the day was, whether the association should not be dissolved? Much

honourable and regretful feeling marked the proceedings at the annual gathering, and finally it was agreed that the association should be continued for another year. Winter classes have been organised for the session.

Manchester shares in the prevailing depression, though its association enjoys the services of Mr. L. Siebold. The committee, in presenting their report, congratulate the members that in their corporate existence they are still alive: more energy on the part of the assistants is desired, and more social union. A pharmacopœial class was started, but it came to grief; and the committee finally expressed their satisfaction that the association had not yet become insolvent.

Let us turn to the brighter influences that prevail at Bristol. This is a gathering of the *Dii Majores*. Clifton has an undue share of admirable pharmacists. They should go out to the surrounding provinces in a missionary spirit, and adopt the Wesleyan plan of travelling preachers. We should have no objection to sit under Messrs. Giles, Schacht & Stoddart for a permanency, or under Dr. Tilden on a special anniversary occasion.

France appears unwilling to be behindhand in an endeavour to extend the boundaries of education.

An attempt has been made to increase the centres for bestowing medical and pharmaceutical qualifications in addition to those already formed in Paris and Montpellier. French Provincial Education. Lyons and Bordeaux have been added, so as to relieve the pressure on the educational resources of the capital. Should these new establishments have a tendency to influence French students to patronise home studies, a great change must have taken place in national ideas. In our day, the one longing desire felt by students was to reach the city of Napoleon; quite as much for the sake of its manifold attractions as for the cultivation of scientific pursuits.

Last, but not least, English energy must have its share of credit.

The creation of a Yorkshire College of Science has been determined upon, the honorary secretary of which is Mr. Richard Reynolds, of Leeds. The establishment is intended to meet the wants of those engaged in manufacture, agriculture, mining, and engineering, in the county of York. The curriculum will include inorganic and organic chemistry, laboratory work, mathematics, geology, textile industries, and cognate branches of instruction.

While thus pharmacy has been steadily pursuing its career our "Learned Societies" have been welcomed to a stately home. Burlington House has given Science a magnificent reception, and within its walls the Royal Society, the Linnean, Chemical, and Geological Societies have found a resting-place; there is also provided other handsome accommodation.

The annual meeting of the Linnean Society was held for the first time in their new rooms at Burlington House. The Fellows have now a noble library and council room. The room appropriated to the evening meetings is on the basement floor, and forms a strong contrast to their former incommensurable habitation. In consequence of the retirement of Mr. Bentham from the presidential chair, there was no annual discourse, a circumstance much to be regretted, as the address delivered the preceding year was of remarkable character.

After paying the heavy expenses entailed by the removal from the old premises, a balance is still left in the treasurer's hands of about 650*l.*

The Chemical Society now rejoices in a luxurious library and fine rooms. It is in great prosperity, and has resolved to increase the circulation of its journal, and therefore circulars have been issued requesting further subscribers, and explaining the objects of the publication. A writer in the *Chemical News* objects to this proceeding, laments

the expense of the Abstractors, and proposes that only the Papers read before the Fellows should be published, to the exclusion of all foreign reports.

To this may be offered a remark that will pass without contradiction, that the journal of the Chemical Society might be accepted as the type of the recognised periodical of a learned body.

Very strongly we would allude to the continued prosperity and usefulness of the Society of Arts in the Adolphi. The lectures which are specially adapted to pharmacists are delivered, without exception, to crowded audiences. The general addresses are given on Wednesday evenings, and the special Cantor lectures on Monday evenings. These are reported verbatim, together with the discussions thereupon, in the *Journal of the Society of Arts*; while large extracts from their Transactions are constantly supplied by the *Pharmaceutical Journal*. Nowhere can more information be obtained respecting the commerce or manufacturing details of things relating to chemistry.

Will it be out of place to record the continued attraction of the Royal Botanic Gardens at Regent's Park? It is fortunate for London to have at once so beautiful a resort, and such an admirable school for botany. There, before the Fellows, Professor Bentley gave a lecture on the properties and uses of Eucalyptus, which is worthy of being recorded. The discovery of the influence of these trees in Globulus, destroying the pestilential character of marshy districts, and in thus preventing fever, has been attributed to Sir Wm. Macarthur, of Camden, Sydney, Australia. For this purpose, he offered, in 1860, plants for distribution among the colonists in Algeria and other marshy places in the world. It appears, however, that in this project he had been anticipated by M. Ramel, who forwarded seeds for that purpose so early as 1854. The genus Eucalyptus belongs to the natural order *Myrtaceæ*. 135 species are described in the "Flora Australiensis," and are commonly known as "gum trees."

All the species have evergreen leaves, which usually hang in an oblique or even vertical direction from the branches, and thus give a peculiar aspect to the appearance of the forest. The leaves are studded with internal glands or receptacles of volatile oil, as may be seen by holding them up to the light, when they present a semi-transparent dotted look. The flowers, usually pink or white, are beautiful, and the odour is specially agreeable. The flowers have an absence of petals; the calyx is peculiar—in the bud state, closed at the top by a little lid, which is thrown off as the flower expands. The fruit, which consists of the hardened somewhat globular or tubular calyx, contains numerous seeds, which are extremely minute. The trees attain enormous size and height, some being over 300 feet in altitude, and 100 feet in circumference. One ounce of the seed of *Eucalyptus globulus* contains over 10,000 seeds; a similar weight of another species more than double that number: thus, from one pound of seeds of *Eucalyptus globulus*, nearly 162,000 plants could be raised.

The tree is of excessively rapid growth, one of ten years old presenting the development of a well-grown oak of a century. In some cases, the blue-gum tree has been found to be 350 feet in height.

It is now extensively cultivated, and would thrive abundantly in the swampy regions of the west coast of Africa.

The power of destroying malarious agency is due to two causes: first, its far-spreading roots act like a gigantic sponge, pumping up water and draining the ground; secondly, the leaves emit an aromatic antiseptic odour, both stimulating and camphoraceous. The root absorbs as much as ten times its weight of water from the soil. At the Cape the cultivation of the Eucalyptus has completely changed the unhealthy climatic condition of that colony. In Algeria, where it has been tried on a large scale, the pestilential character of

the air, and consequent prevalence of fever, has disappeared, though the trees are not more than nine feet high. In the neighbourhood of Constantia 14,000 of these trees have dried up a noted fever spot. Marvellous other instances are recorded. The barks are used in papermaking and tanning. A number of species exude an astringent principle resembling kino; from other species manna is obtained, and the flowers yield honey in much abundance. The essential oil is an important product obtained in large quantities by aqueous distillation of the leaves, prepared on a large scale by Mr. Bosisto, of Melbourne. It has been stated that the bark contains an alkaloid identical with quinine, but this has been disproved by the experiments of Mr. Broughton. The properties of the plant depend on eucalyptol, the chief constituent of the oil. The narrow leaves should alone be used. The leaves have been used in dressing wounds as a substitute for lint, and in the form of cigarettes as a remedy for asthma.

The literature of the year has been marked not so much by its extent as by the exceptional excellence of some contributions to the pharmaceutical library.

Professor Armstrong, young in years, can lay claim (thanks to a remarkable devotion to his favourite science) to great experience. He has already shown proof of no mean ability in the pursuit of practical research. "Organic Chemistry." All his work, and there has been a good deal of it, is in the direction of personal investigation. This book is an explanation of the history of carbon compounds, their composition and classification. The action of reagents on these compounds is described minutely, and the chemistry of the individual members of the various groups is clearly set before the student. We can only praise the volume in the highest terms, and hand it over with confidence to the reader.

Several new manuals have been published, all justified to some extent by the introduction of the new remedies contained in the British Pharmacopœia Addendum. New editions of Garrod's "Essentials of Materia Medica" and Thompson's "Couspectus" are amongst the number. Professors Bentley and Redwood have an abridgement of Pereira, and Dr. Thorowgood has contributed a little work, "The Student's Guide," which is adapted to the wants of the junior medical profession.

Dr. Muter has published "An Introduction to Pharmaceutical and Medical Chemistry, Theoretical and Practical." The work is arranged on the principle of the lectures delivered by himself at the South London School of Pharmacy, at Kennington. It contains an admirable chapter on Chemical Equations; and another on the Alkaloids, fixed and volatile. Analytical tables are appended to the description of each metallic element, and full toxicological information is included.

Professor Oliver has issued his "Illustrations of the Principal Orders of the Vegetable Kingdom," a work invaluable to learners and their preceptors.

Pharmacy has been enriched by the reappearance of the manual of the late Professor Parrish, of America.

The fourth edition of this standard treatise, edited, revised, and much enlarged by Mr. S. Wiegand, has made its appearance.

Parrish's It contains (as is well known) an elaborate "Pharmacy," capitulation of the ordinary requirements of pharmacy. As an aid to practical dispensing, the work has probably no equal. Next we are presented with "A History of the Principal Drugs of Vegetable Origin met with in Great Britain and British India." This work, distinct in

its conception and admirable for the manner in which it has been worked out, marks an advance in the literature of its special subject. It adds to the sum of our knowledge of *Materia Medica*. It is a Thesaurus in the full meaning of the word;



and out of their treasury the joint authors have brought forth things new and old. It is a book of reference, and not a text-book; useful for the teacher, the advanced scholar, and the inquirer. The general nature of the volume may be well appreciated from a notice in the *Athenæum* of the date of its publication, and from a critique contributed to *Nature*, by Mr. H. B. Brady, and best from a diligent study of its contents.

Professor Redwood has been invited by the Council to undertake the completion of the Historical Sketch of Pharmacy up to the year ending 1869—100 guineas to be the payment for the literary work. The original sketch was written by Mr. Jacob Bell.

A learned curiosity has been written by Mr. Rodwell: it is a most readable book, filled with classical and antiquarian lore. It relates the historical progress of chemistry until it emerged from theory and became an exact science based upon recorded experiment. A vast amount of curious literary research is displayed in this essay. It has been objected to its completeness that it stops short of an account of the life and labours of Lavoisier.

M. Léon Soubeiran has published a book called "Dictionnaire des Falsifications des Aliments." The author has been elected Professor of the École Supérieure de Pharmacie at Montpellier. The work is profusely illustrated.

"La Matière Médicale chez les Chinois," by the same author and Dabry de Thiersant, contains information respecting some Chinese drugs which are of commercial interest. Amongst these are musk, edible swallows' nests, isinglass, camphor, tea, and opium.

Mr. Peter Squire has published the tenth edition of his "Companion to the British Pharmacopœia:" never did any work more thoroughly deserve success. The book is a model of well-arranged information; it is an indispensable compilation, and has found its way as much to the tables of the medical profession as amongst either students of pharmacy or experienced pharmacists.

The annual contribution to literature by the British Pharmaceutical Conference, the "Year Book," appeared rather late in date. It was edited by John H. Baldock, F.C.S. This work, produced under much disadvantage as respected time for due revision, is a creditable performance, and is an indispensable companion to those engaged in pharmacy. It contains notices of the various new remedies that have been introduced, and a faithful abstract of important scientific researches. The section devoted to *Materia Medica* is exceptionally instructive, Papers that have commanded attention, such as those on Pereira Brava and Myrrh, being given at full length. More than a hundred pages are allotted to pharmaceutical chemistry, and over eighty to pharmacy. Amongst other topics should be noticed the oleate of mercury and morphia, practical hints on percolation by Mr. E. C. Saunders, and propylamin. The notes and formulæ had better have been omitted.

Amongst the curiosities of pharmaceutical literature will be found an elaborate paper, amounting to a pamphlet, in the October number of the *Chicago Pharmacist*. It bears the strange title of "The Head of the Camel."

It is far too long either to analyse or quote, but it contains a perfect unfolding of the manner in which the trade in elixirs and their recognition by the American profession has injured medical practice and the exercise of legitimate pharmacy. Its revelations are almost entirely new to English readers; and it gives an insight into a condition of things unknown to pharmacists on this side the Atlantic. The essay does not bear on the question of patent medicines; the quiet style in which it is executed merits the highest praise.

No sooner do we enter on the region of the miscellaneous than we find inexhaustible material in the shape of notes and

formulæ. These are scattered in profusion throughout our entire periodical journalism. Many novelties are the birth of the hour and will perish with it. Some few undoubtedly will live.

Boldo is probably the latest candidate for notice. The leaves are used on account of the aromatic oil they contain. The alkaloid discovered has been called boldine by Claude Verne and M. Bourgoin, the joint discoverers. The tree is indigenous to the New World; the leaves are covered on their surface with small glands. In South America the plant is a popular remedy against syphilis and diseases of the liver. The essential oil is contained in cells, which are met with in nearly every part. The oil vessels are perfectly spherical and of large diameter.

The volatile oil is the most abundant product, as much as two per cent. having been frequently obtained, and is a mixture of various bodies. The preparations used are (1) alcoholic extract; (2) aqueous extract; (3) essential oil; (4) tincture; (5) wine made with Madeira; (6) syrup; (7) elixir.

The leaves and flower stems are alone employed.

Dose of the wine:—One tablespoonful to a wineglassful once or twice a day. Vomiting is induced by too large doses.

An enterprising Frenchman, M. Mège Mouriès, is making artificial butter; while two ingenious pupils of Dr. Hoffman have turned science to a good account. Messrs. Tie-Vanillin. mann and Haarmann discovered vanillin in the products of a reaction occurring in pine juice, and they have made this the basis of a flourishing commercial speculation. Their process does not injure the wood, and each tree of medium size yields a product of the value of 4*l.* English money.

It should not be forgotten that three substances which have assumed high commercial value were once exhibited as lecture-room specimens, long before their trade importance was recognised. Chloroform, by Dumas, at the Sorbonne, Paris; Pepsin, by Dr. Todd, at the course on Physiology at King's College; and Glycerin, by Pereira, at the course of *Materia Medica* at Bloomsbury Square. If some of our young pharmacists, instead of being so very angry with abstract study, would turn their attention from feeding-bottles to practical research they need not be financially injured.

And yet another artificial product must be added to the list, one which may have no inconsiderable commercial future.

Professor Kolbe has succeeded in producing artificial salicylic acid from carbolic acid by the joint action of carbonic anhydride and sodium. Its antiseptic and physiological properties were found to be remarkable.

1. Fresh meat rubbed with the acid kept for a week, though exposed to the air. Many similar experiments were successful.

2. Solution of amygdalin mixed with emulsion of sweet almonds developed no smell of bitter almonds if some salicylic acid were added.

3. Salicylic acid added to beer in the proportion of 1 to 1,000 prevented the formation of fungoid growth.

4. Fresh urine was divided into two portions, to one of which salicylic acid was added, while the other was left untouched. After three days the latter was putrid; and the former, protected by the acid, was still clear and free from ammoniacal odour.

Dr. Tilbury Fox, who succeeds to a fair share of the practice of the late Mr. Startin, has explained his views of what should be the physical characters of calamine powder, distinct from the "old-fashioned dirty red, gritty powder of the shops." The following should be its properties:—

Colour—very pale salmon, or pale flesh-colour.

Texture—an impalpable powder.

Constitution—genuine. Prepared only by incineration, levigation, and subsidence.

From New York we got this improved formula:—

Chemical Food, New.	Freshly Precipitated	Phosphate Iron .. ..	128 grains
		Phosphate Lime .. ..	256 "
		Phosphate Soda .. ..	128 "
		Phosphate Ammonia .. ..	128 "
		Syrupy Phosphoric Acid .. ..	℥3x℥j.
		Boiling Water .. ..	4 ozs.
		Syrup, q.s. to make .. ..	℥xvj.

The advantage claimed is the use of the pure tribasic phosphoric acid, made directly from phosphorus by nitric acid, instead of the monobasic acid now employed. The ammonia phosphate is also suggested as an improvement.

Mr. J. Morris Broad suggests the use of equal parts by measure of glycerin and water, instead of syrup, in the manufacture of the syrups of the phosphates. The Phosphates. formula would then stand thus:—

Phosphate of Iron, 16 grains.  
Syrupy Phosphoric Acid (sp. gr. 1.5), 5j.  
Glycerin and Water, eq. pts. ad. ʒij.

Rub the phosphate of iron down with a little water and glycerin; add the acid, and filter into the rest of the glycerin and water. The ordinary varieties of these syrups would be prepared in a similar manner.

Mr. H. C. Baildon, of Edinburgh, claims an official place for *Rhamnus frangula* in pharmacy. It possesses admirable laxative qualities, without the griping effects of senna.

**Cortex Rhamni Frangulæ.** It appears, according to Mr. Giles, to have tonic and aromatic qualities which stimulate the muscular action of the bowels, as distinguished from the cathartic influence produced by irritating purgatives. It has answered well in counteracting habitual constipation. The bark of the younger trunks and the larger branches of the indigenous shrub are gathered in the spring. This kind should alone be used, as the bark taken from the thick part of the trunk is entirely different. That obtained from the quill bark yields a decoction pleasant to the taste, and with a slight flavour of almond, or prussic acid.

Mr. Baildon seems to have made out his case, and the *rhamnus frangula* is worthy of further attention and experiment.

Half an ounce is directed to be added to a pint of water, and the decoction boiled down to half-a-pint. Three tablespoonfuls for a dose.

Marvellous accounts are given about the efficiency of *Jaborandi*. This remedy has been tried at the Hospital Beaujon, Paris. Dr. S. Continho, of Pernambuco, is the discoverer, and he has handed it over to Professor Gubler to make experiments. An infusion of leaves and twigs in warm water (dose ʒ iss.) produces violent perspiration, and remarkably increased salivation. *Jaborandi* has been further reported on by Mr. Martindale, who relates a successful experiment tried by Dr. Ringer at University College Hospital. Two boys under its influence exhibited in a marked manner the effects of perspiration and increased salivation. Doubts are entertained at present respecting the origin of the plant.

Amongst minor matters little remains to record.

An epidemic of epistolary communication on the subject of long hours broke out. Pharmacy is exceptional in this particular. In time, perhaps, the wave of common sense may break over its unnecessarily protracted hours. As the business is now conducted it is difficult to discover why there should be such anxiety to join its ranks. The higher standard of education which obtains at present must inaugurate wiser and more enlightened views.

Moreover, a strange correspondence rose about the amount of cubic inches necessary to give a proper standing to an assistant.

**Height and Qualification.** Masters were reprobated for their views on longitude; and some writers went to the length of quoting Dr. Watts. Curious advertisements transpired. In one, the aid of a gentleman was requested who

was to be "single handed;" another offered a liberal salary to an *employé*, coupled with the doubtful advantage that he was to have "a boiler under him."

It is our Transatlantic friends whose style perplexes us sometimes, and we often read the communications of our American brethren with a certain amount of awe, for we fail in every case to grasp the English meaning of the newly-coined expressions. The opening passages of the *Chicago Pharmacist* of August are more than usually complex. Would some of our talented students try their hand at an explanation of this sentence?—"Pharmaceutical Items. The want of uniformity in the containers and labels of chemicals and pharmaceuticals furnished by the manufacturer has appeared to the writer as a great impediment to the pharmacist in compounding prescriptions. For, if containers are furnished at all, why could not a more uniform style be adopted, which, if not benefiting them pecuniarily, would at least afford them the satisfaction that their goods are packed and labelled in a manner most convenient to be handled, and which will be sure to be appreciated."

We confess also to a difficulty in easily comprehending some chemical nomenclature. A series of acids have been investigated by M. Hayduck. One is orthoamidotoluenesulphonic acid; and another diazorthoamidoparatoluenesulphonic acid. A knowledge of these is not required in the Minor Examination. The action of tin and hydrochloric acid on nitrobromacetanilide gives rise to the hydrochloride of ethenylbromophenylenediamine.

Time in its rapid flight has not spared a few honoured companions. It remains for us but to offer a brief "In Memoriam."

**Dr. Neil Arnott.** Dr. Arnott died on Monday, March 2. Educated and eminent as a physician, he gained high repute in the domain of physics. He was the inventor of the Arnott stove, the ventilator, and the water bed. He refused on principle to take out a patent for any of his discoveries.

Also was called away, Mr. Henry Deane, who died suddenly at Dover, on Saturday, April 4. The day before he was

**Henry Deane.** described as enjoying the waves that dashed over the pier head. No one in English pharmacy was more universally respected. He was a prominent man in the establishment of the Pharmaceutical Society; and found time amongst his business pursuits to devote much attention to botanical and microscopical study. A portrait of the lamented gentleman, with an autobiographical memoir, has already appeared in this Journal.

Mr. Deane's motto deserves to be recollected:—"There is nothing beneath the dignity of a man except that which is dishonourable."

At Dartford, with which place his name is inseparably connected, Mr. Edwards entered into his rest. He was for many years a member of the Council, and on the Board of Examiners. In this latter capacity he undertook the care of Latin autograph prescriptions. He was a fluent and most elegant speaker.

George Meggeson died February 21. He was best known for the attention he devoted to the manufacture of medicated lozenges.

At one time he was a member of the Council of the Pharmaceutical Society, and was most useful in regard to its financial affairs.

Mr. Morson died March 3 (aged 74). He was one of the founders of the Society, the intimate friend and adviser of Jacob Bell, and actively engaged throughout his whole life in the prosperity of English pharmacy. Mr. Morson was possessed of extreme mental and physical activity, and though at first entirely dependent on his own exertions, he soon overcame his preliminary difficulties, and established the business in Southampton Row and a manufacturing laboratory at Hornsey. For some years he worked in Paris in the house of M. Planche

a well-known pharmacien: there he acquired a knowledge of the French language, which he spoke with enviable rapidity and correctness. He produced the first sulphate of quinine ever made in England, which was retailed at eight shillings a drachm, and the first specimen of morphia, which commanded the price of eighteen shillings a drachm. He also manufactured aconitia in a manner that distanced competition; this sold up to a not very distant date at 2s. 6d. a grain. He was, moreover, celebrated for his creasote and other rare chemicals. As a member of the London Pharmaceutical Society he served various posts of honour, having been President, Vice-President, on the Council and the Board of Examiners. He was a standing adviser on all journal matters, and was a daily visitor at the institution in Bleomsbury Square. In addition, he was an energetic member of the Society of Arts, and a constant attendant at the Royal Institution.

Probably the personal appearance of no other English pharmacist was so well known as that of Mr. Merson. Companionable to a remarkable degree, he loved to associate himself with men celebrated either in the world of science or of art. He was by odds the best impromptu speaker we have ever known, and was most amusing in his social intercourse. His familiarity with the French language made his name a household word amongst the *savants* of the Continent: several of these met with a warm reception at his hospitable board. He numbered amongst his associates Faraday, Fownes and Graham, besides a host of other distinguished personages. An admirable portrait of him was given in this Journal, together with a biographical account which appeared under his own supervision. It is remarkable that he should have abstained so carefully from periodical literary contributions, though, from his long and wide experience, no one was better fitted for the task. He won for himself the position of one of the most eminent scientific and practical pharmacists of his day.

William Proctor, jun., died February 10. This admirable W. Proctor, American pharmacist was for many years the editor of the *American Journal of Pharmacy*, and one of the professors of the Philadelphia College of Pharmacy. He was an excellent lecturer. To the above we have to add the

name of Charles Savory. He was the second son of the late Thomas Savory, of Bond Street, and of late responsible director of the firm. He died at the early age of 44.

So ends the retrospect.

Some amongst us have achieved distinction in various ways—some even have written books. A few have been enrolled among the number of the elect and added the three mystic honourable letters to their name. Many, very many, have during the past twelve months conducted a legitimate, high-class remunerative trade.

To all and each we offer our heartiest congratulations, and the expression of our sincere good-will.

#### THE USE OF FLIES.

MR. EMERSON, chemist, West Hartlepool, lately set himself to discover if there were any useful ends accomplished by that one drawback to the lovely summer months, the common house-fly. He communicates his experiments to a local paper, and has since forwarded an account of them to us. Having secured one and laid him on his back, and glued his wings to the object glass of a microscope, he observed that the little animal was covered—legs, body, and wings—with an innumerable quantity of lice. "I was so disgusted (Mr. Emerson proceeds) with what I had considered a pretty fly that I loosed his wings and let the lousy fellow go; after his departure, how-

ever, I remembered that I had not got the information I desired, viz., his use and habits, so I caught another and put him into the same position as the former one, and, to my dismay, found him as lousy as the first. I thought this very singular, but I was determined to have a close inspection; I got part of a wing into sight, which was beautiful, until I caught a view of the head of one of the vermin coming along to invade my pleasure ground with his unsightly body; I shifted my glass to have a peep at the body, when one of the legs of the fly came dangling into view, and on the tiny shanks were some of my old enemies. What is that I see? A miniature elephant's trunk now comes in view and licks up a quantity from the leg. I move the glass to have a look at the fly's head, to see how he appears in his confinement; what a splendid large eye! He is busy with his proboscis or tongue, going rapidly in all directions, and, by the expression of his eye, looks as if he was quite satisfied, and enjoying his meal. I move the glass again to examine his body, which is covered with the vermin, and every now and anon there was a switch of the tongue, licking them off; these must be her progeny (I had up to this time treated my captive in the masculine gender), and she is a cannibal, eating her offspring. I gave liberty to my object, and was more than ever out of love with my fly. I went into the kitchen to watch their gambols round the gas bracket, and to admire their swiftness through the air, and wondered if they were happy, with their young hanging about them; but I had lost faith in their innocency, and also in the harmlessness of their alighting on my bread and butter. I observed a sheet of clean note paper lying on the dresser: presently two flies lit on it, and appeared to be licking something off it; I laid hold of the paper and took it to the microscope; I put a corner on the glass, and there were some of the progeny of the fly on it. This set me thinking. I took a cloth and rubbed the paper well, then tried it again and found none on it. I took it into the kitchen again and waved the paper around, taking care that no flies touched it, went back to the microscope, and there found animalcules, same as on the flies. I had now arrived at something definite; they were not the progeny of the fly, but animalcules, floating in the air, and the quick motions of the flies gathered them on their bodies, and they then went into some quiet corner to have their dainty meal. Further experiments convinced me that I had found the real use of the flies. I afterwards caught one in a bedroom; it was one of Pharaoh's loan kind, examined it, and there were no animalcules on it, neither could I get any in the room. I then tried the yard near to the kitchen, and found very few there; then went into the back street, where it was neither very sweet nor clean—that morning the scavengers had been cleaning out the ash-pits—got plenty on my paper there. I arrived at the conclusion that instead of the flies being a pest and a nuisance, they are the friends of mankind, and should not be slaughtered wholesale, as they generally are; for wherever there are the most animalcules, there will be found the most flies, to feed on the same. Those experiments were made in sultry weather. I always found my sport spoiled after heavy rain and strong winds, for then I could not bag much game; and when frost set in, I found none. I may say that I have tried an endless variety of disinfectants and purifiers to overcome these animalcules, and that I found nothing so effectual as burning sulphur on a dust-pan, and carrying it about the place."

Mr. Emerson adds that he is now investigating the spider, and trying to discover what is the use of him. If our correspondent should conclude that the main use of spiders is to catch flies, that the use of flies is to catch lice, he will be in duty bound to proceed to the remaining problem respecting the purpose served by the last named-tribe. Whatever this may be, Mr. Emerson certainly deserves credit for his patient and skilful investigation, and for his interesting and, we believe, novel observations.

HARVEY'S CHILBLAIN PENCILS are brought out by the proprietor of the Toothache Pencils, and are supplied to the trade in similar style. Doubtless they will prove saleable.

LYNCH'S SILICATED ENAMELLED BOXES are made for containing ointments and greasy materials generally in place of earthenware jars. Ointments can be kept in these for a long time without being absorbed in any appreciable degree. The tight-fitting lid, non-liability to breakage, and economy recommend the use of these boxes.

## DR. JOHN MUTER, F.C.S.

BY personal tact and energy, aided not a little by the conservative onery from Bloomsbury Square, Dr. Muter has attained to a very prominent position in the pharmaceutical world. The school of pharmacy which he established, and which he has ever since directed, has now become, for good or for evil, for better or for worse, one of the best-known institutions in connection with our occupation. And without alluding to the more or less direct references with which this gentleman and his "system" have from time to time been honoured in the oratory which it has fallen to our lot to report, we may surely conclude that the man who, as we saw recently, was worth attacking so vigorously in an inaugural address to another school, is quite worth a personal introduction to our readers.

One more remark before passing in reference to Mr. Giles' address, which everybody would have made if that address had been delivered by an obscure man, and which it is so much the more important to make, coming as it did from one occupying the rank universally accorded to Mr. Giles. Of course it was perfectly understood that the attack insinuated in that eloquent speech was mainly and directly intended to check the growing prosperity of the South London School. Before making that definite public attack Mr. Giles was, in common fairness, bound to investigate the procedure of that school for himself. "They say" was not a sufficient authority for his comments. If he omitted this preliminary inquiry, his remarks on this point may be passed as smart, but will not add to the author's reputation for that sense of honour which he so forcibly urged on his auditory.

It is due to Dr. Muter to assert that the school which he directs is of quite a different character to the fancy sketch so subtly insinuated by Mr. Giles as its description. It offers a course, it is true, professedly as a "preparation for examination," the crime of which we altogether fail to see, but this preparation is none of that mysterious cabalistic necromancy, the discovery of which is as absurd as is the theory that such flimsy nonsense would avail in any examination-room in the world. The preparation is simply systematic hard work; there's the secret. This is the only royal road after all, and we are sorry that Mr. Giles should have helped to spread the idea that there is somewhere a by-path which runs round the foot of the hill Difficulty, and saves the toilsome ascent.

Dr. Muter was born in Glasgow in 1841. He was the son of a surgeon who at one time was Professor of Materia Medica in the Portland Street Medical School. On his mother's side, we believe, he is related to the founder of the Glasgow Apothecaries' Company. After the usual school course, he studied for several years at the Glasgow University, and subsequently attended the medical curriculum at the Andersonian University, studying chemistry and anatomy under Professors Penny and Buchanau. Having taken several prizes and certificates in the chemistry class, Dr. Penny appointed him as his assistant, the duties of which post he fulfilled till a serious illness compelled him to desist from all work. On his partial recovery, Mr. Muter commenced to travel through France, Germany, and Austria, and at Rostock took the degree of Ph.D.

Some commercial reverses sent him back to work again. His first efforts were as a public lecturer, for which task the doctor is well fitted. He followed this career for a while all over the country, giving chemical lectures at mechanics' institutions, &c., in many towns from Northumberland to Cornwall, but afterwards married and settled down as assistant to Dr. Hassall, managing that well-known chemist's laboratory. Later on, Dr. Muter established his own laboratory, and observing the opportunity created by the Pharmacy Act, took advantage of it, and com-

menced to "prepare for examination." From a comparatively small beginning this scheme flourished, until in 1872 Dr. Muter associated others with himself, and with good capital the South London School was established on a broad basis, with Mr. W. Baxter as secretary and business manager. In 1873 the new school was built, and was considerably improved last summer. Up to the present time the proprietors of this institution have unceasingly followed the wise course of freely throwing money and energy into a prosperous concern, and everyone who visits the school will be forced to admit that the arrangements they have carried out have been ingeniously planned as well as ably executed. The new laboratory is quite unique in its clever adaptation of means to an end. It is so arranged that fifty students can work at once without crowding or inconvenience, each at the same moment being under the immediate supervision of the demonstrator.

Dr. Muter is public analyst for Southwark, Lambeth, Wandsworth, Rotherhithe, Bermondsey, and Newington. The one occasion when in this capacity he came into conflict with our trade—we refer to the citrate of magnesia case—was an accident for which, as the official analyst, he was not responsible; and it is fair to add that in giving evidence he took care to offer the defendant a good opportunity of explaining the real state of the case, which was unfortunately not taken advantage of.

Dr. Muter has written several books, and contributed a number of papers to various periodicals on sanitary and chemical subjects. His most ambitious work is his "Pharmaceutical Chemistry," which has lately appeared, and which will deservedly add considerably to his scientific and literary reputation.

## TRANSATLANTIC SKETCHES.

JOHN L. THOMPSON, OF TROY, NEW YORK.

One of the most respected names in the entire American drug trade. His firm have risen, during the last thirty years, to the second or third position in the Union among the wholesale druggists in the total of annual sales, not excepting the metropolitan firms. They are also celebrated as the manufacturers of the only "Eye Water" having any position in America. Thompson's Eye Water is to be found in every retail drug store throughout the country, sells freely, and has been the foundation of the large fortune accumulated by the firm in the general drug business.

GEORGE C. GOODWIN, OF BOSTON.

At the time of his decease, in the prime of life, three or four years since, this energetic business man had achieved the second position in the wholesale proprietary medicine business, and was fast aiming at the leadership. Of a shrewd Boston type, he was, nevertheless, liberal in his dealings, and succeeded in constituting a community of interest with many of the leading patent medicine men of New England, and in many cases a controlling position. His firm were proprietors of a cheap bitter called "Langley's," which went off among the smaller class of druggists in marvellous quantities. The population of the six Yankee States have always had a predilection for herb medicines, and cheap bitters have met with an acceptance quite inconceivable to people in other sections. Those mysterious *clairvoyant* prescriptions which have created so large and curious a demand for recondite herbs, were first accepted in this highly civilised and ultra-educated part of the Union. The "Hub," as Boston is sometimes facetiously called, has patronised and propagated more proprietary nostrums than any other of the large American commercial towns. One of the most highly puffed and elaborately advertised specialties of former days, "Wistar's Balsam of Wild Cherry," received a new impetus under the energetic management of a most esteemed Boston wholesale druggist, now deceased, of whom a few words

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

XIII.



*yours faithfully*  
*John Muter*

DR. JOHN MUTER, F.C.S.



## SETH W. FOWLE, OF BOSTON,

For twenty years a leading wholesale druggist, and most successful manager of one of the first "patents," Wistar's having come under his control as agent for the Eastern States about 1843. Mr. Fowle was the first bold advertiser, having at one time imposing announcements in nearly every newspaper in the Union. The demand became immense, and later on Mr. Fowle obtained the entire control of the balsam for all the States.

## ISAAC BUTTS, OF ROCHESTER, NEW YORK.

This wealthy citizen was at one time joint owner of Wistar's with Mr. Fowle, but the latter purchased Mr. Butt's interest for 6,000*l.*, which sum, rumour says, was invested in telegraph stocks, at that time at a low ebb, but destined to be worth many times the original sum. Mr. Butts, we believe, has had nothing to do with drugs or specialities since Wistar's.

## JOHN D. PARK, OF CINCINNATI, OHIO.

The *doyen* of the American "Medicine Men." Mr. Park has been a dabbler in patents from their earliest times. Before the days of exclusive patent medicine houses in the seaboard cities, Mr. Park had one under full swing in the giant young Western city. He it was who pushed "Wistar's" west of the Alleghanies, and was at the same time godfather to all the terrible humbugs that Western ingenuity inflicted upon the community. Time would fail to even glance at these; most of them have sunk into a well-earned oblivion. Mr. Park became wealthy, and, possessing a restlessly energetic temperament, joined the subject of the next sketch in founding an imposing business in New York, confining himself personally to his Cincinnati establishment, which is still continued, but in the face of manifold competition from Pittsburg, Louisville, St. Louis and Chicago houses.

## DEMAS BARNES, OF NEW YORK,

The Napoleon of the wholesale patent medicine dealers in his day. A few years since he retired upon an ample competency, and being yet in the prime of life, Mr. Barnes now devotes himself to local politics in the adjacent city of Brooklyn, from which he has been returned to the United States Congress for one term. He is believed to be largely interested still in some well-known specialities, which glide along upon a well-established sale without much attention; he has also invested a considerable sum in one of the leading daily newspapers of Brooklyn, which brings handsome returns.

About the year 1852 Mr. Barnes took up one of the "new-fangled" hair tonics of the epoch, "Lyons Katharion;" hard names were in vogue at that period, the only important competitor being distinguished as Barry's Tricopherous. The inventive genius of the authors of these two mysterious and learned titles happily possessed the requisite tact to win their general acceptance by the public, and they soon became nationally famous. *L'appetit vient en mangeant*, say the French, and "Demas," as he was afterwards familiarly termed in the trade, proving the truth of this proverb, founded a wholesale patent medicine business about 1855, aided by Mr. Park, of Cincinnati. This firm of Barnes & Park at once commanded business, and a few years after Mr. Barnes became sole proprietor. The well-remembered panic of 1857, and one or two succeeding dull years, sorely tried all leading business houses, but Mr. Barnes went through untarnished and reaped two or three good harvest years previous to the grand "smash" which the rebellion occasioned. Then ensued the rise and most extraordinary development which business has ever known in America. Mr. Barnes' commercial standing had remained intact throughout, and he was, therefore, in position to profit from the expansion of trade. He had gradually acquired the proprietorship of, or a controlling interest in, a number of the best-selling patents, and had also taken a hand in establishing several aspirants which promised prospective success. Among the most notable of these were the celebrated "Drake's Bitters," whose annual sale reached in three or four years some 200,000*l.* sterling, and which are to this day in full vogue. The unlimited desecration of dead walls, fences, rocks, mountain peaks, &c., was first consummated by some one in the interest of these "admirable" bitters. The tourist was startled from his most romantic reveries at every picturesque point by the "loud" inscription "S.T. 1860 X.," which proved that he had been anticipated in his peregrinations by Drake's man

and his paint pot. The system reached such a point at last that some of the States enacted laws against this decoration, or rather desecration, of nature. Whether the gentleman we are writing of was responsible for the initiation of this style of publicity we are unable to say.

At all times, however, he was a large advertiser in the public journals, and he almost literally carried out A. T. Stewart's recommendation, "He who invests a dollar in business should invest another dollar in advertising that business." Mr. Stewart, it may be mentioned, is the great successful dry goods merchant of New York, always one of the largest advertisers in America, and to-day at the head of the greatest accumulated fortune of any business man in the Union.

Junior talent grouped around Mr. Barnes, as it always will around an exceptionally audacious and successful business man, and soon several young men were permanently attached to the firm by a fractional interest in the business. These rewards stimulate talent and energy which would otherwise lie dormant or only half-developed, and it is a feature of the management of American business houses worth the study of some of those rich and indolent houses on this side of the Atlantic who wonder why, with all their capital and facilities, their annual sales go on shrivelling up, when a little young blood to do the push and hard work would soon put new life into their affairs.

Several first-class business men graduated from Mr. Barnes' establishment previous to his retirement, and are now engaged in transactions on their own account all over the world. Mr. Barnes' successor shall be the subject of our next sketch, and as a typical American business man we shall have to look far to meet his equal.

## P. H. DRAKE, OF NEW YORK,

Author of "Drake's Plantation Bitters," which were so heavily pushed under the Barnes dynasty. They were brought out in 1860, and in less than ten years thereafter several hundred thousand pounds profit over and above a most lavish outlay for publicity had been realised by the various parties interested. Drake's motto has puzzled many people, and many guesses have been made in regard to it. "S. T. 1860 X.," which was visible on all the labels, cases, show cards, circulars, posters, rocks, fences, &c., has been decided to mean "Sure thing in ten years from 1860,"—and so it turned out. Mr. Drake's plethora of profit led to his attempting the establishment recently, both in Europe and America, of the "Sea Moss Farine," which marine edible, however, does not appear to have been so largely appreciated as his "Bitters." To explain the immense popularity of the various Bitters, it is only necessary to say that their use is not absolutely confined to cases requiring restorative remedies, but that they are especially in vogue as a *preventive* dose, and consequently find welcome everywhere.

## HOSTETTER AND SMITH, OF PITTSBURG, PA.

This firm were the originators of the Quart Bottle Bitters, and still stand, as evidenced by their annual sales, at the head of the list. Their method of advertising is of the most costly character, they invariably ordering the highest priced positions in the great leading dailies for their announcements.

## UDOLPHO WOLFE, OF NEW YORK.

The *penchant* of the Americans for bottled spirits claiming medicinal qualities was first taken note of as the basis of a large commercial operation by the gentleman whose name heads this sketch.

Mr. Wolfe is now deceased, leaving a large fortune and an established trade mark of great value. "Schiedam Schuapps" have been before the public under the auspices of Mr. Wolfe nearly thirty years, and, in the face of rival "gins" without number, still retain their popularity.

Their introducer was a large importer of Holland gin in pipes, and he conceived the idea of creating an extra demand by bottling and advertising. This appeared quite disreputable to his fellow importers, but the move was a winning one, and Udolpho's profits soon gave a legitimate and healthy flavour to the business.

## MRS. WINSLOW AND MRS. ALLEN.

These two names have become historical—the first as the ostensible originator of a soothing syrup, and the second as the imaginer of a couple of hair compounds. Mrs. Winslow's pre-

paration seems to have been born "way down east," in the State of Maine; it was first brought into general notice by a most esteemed and capable business man and his sons, who still continue the business, and have gathered handsome competencies from it. We allude to Mr. Jeromiah Curtis & Sons. Their annual sales are eminently satisfactory, as will be noted by details elsewhere in this article.

Mrs. Allen *débuted* in New York, and after a few years of energetic push she disposed of the proprietorship to a drug house whose liberal management has still further augmented the sales.

#### JOHN F. HENRY, OF NEW YORK.

Born in 1834, in the State of Vermont—a typical Yankee, sandy-haired, shrewd, and successful, of an unflinching good nature, patient industry, economy, and push which has given him at forty years of age the leadership of the proprietary medicine business in America. Mr. Henry claims that his annual sales reach a total of 600,000*l.*, and we believe this statement by no means exaggerated. Aided by two or three New England patent medicine capitalists, Mr. Henry purchased Mr. Barnes' business about the year 1867, and under his generalship it certainly has not diminished.

In 1870 he launched his "Carbolic Salve," and the rapidity with which such products can be introduced in the Union is illustrated by the first year's sale reaching one million boxes. Mr. Henry is an apostle of cheap transportation, about which there has been much agitation latterly in America; he is also ambitious of political honours, and has manifested a desire to appear in Congress, like his predecessor, Mr. Barnes, but as yet the electors have not conferred the necessary authorisation. Some statistics which have appeared, apparently with the sanction of the gentleman we are sketching, will give an idea of the importance of the houses engaged in the proprietary medicine trade in the larger cities of the Union, and others are annexed showing the approximate annual sales of several of the leading patents.

#### Annual Sales of Wholesale Firms.

	£
John F. Henry, Curran & Co., New York .. .. .	600,000
George C. Goodwin & Co., Boston .. .. .	160,000
Johnston, Holloway, & Cowden, Philadelphia .. .. .	100,000
John D. Park, Cincinnati .. .. .	100,000
F. C. Wells & Co., New York .. .. .	80,000
Collins Brothers, St. Louis .. .. .	80,000
John Fleming, New Orleans .. .. .	80,000
Henry & Co., Burlington .. .. .	80,000

#### Annual Sales of Specialities.

	£
Hostetter's Bitters .. .. .	200,000
Drakes' do. .. .. .	140,000
Hoofland's do. .. .. .	20,000
Brown's Ginger .. .. .	50,000
Hall's Hair Renewer .. .. .	80,000
Ayers' Pills .. .. .	40,000
Ayers' Pectoral .. .. .	30,000
Ayers' Ague Cure .. .. .	20,000
Ayers' Sarsaparilla .. .. .	30,000
Winslow's Syrup .. .. .	100,000
Brown's Troches .. .. .	50,000
Lanman's Florida Water .. .. .	50,000
Helmbold's Buehu .. .. .	100,000
Kennedy's Discovery .. .. .	20,000
Boudault's Pepsine .. .. .	10,000
Dutcher's Fly Paper .. .. .	10,000
Brandreth's Pills .. .. .	30,000
Herrick's Pills .. .. .	20,000
Sehenck's Pills .. .. .	20,000
Radway's Pills .. .. .	40,000
Wright's Pills .. .. .	30,000
Smith's Tonic .. .. .	40,000
Tarrant's Aperient .. .. .	20,000
Osgood's Chlogogne .. .. .	20,000
Jayne's Expectorant .. .. .	20,000
Pain Killer .. .. .	30,000
Sozodont .. .. .	20,000

These are the articles in constant demand, but they are, in point of fact, but a few of the long list in the enjoyment of an established and profitable sale.

#### HENRY C. SPALDING, OF NEW YORK,

Commenced manufacturing his liquid glue about 1860, and made an immediate success on a large scale by very carefully-

studied advertising. The article went at once into a large sale; this emboldened the proprietor to "float a pill," and, amid the general scepticism of the trade, out came with a dash "Spalding's Cephalic Pills," with a whole column advertisement in *eight hundred* newspapers, all appearing the same day. This created an immense demand in one week, and the other pill men stood aghast. But as the advertising bills matured the road became rougher. The glue and pills were sold out to other less enterprising houses, and have an easy-going sale to this day, while their originator has turned his attention, we believe, to railroads and collateral enterprises.

Spalding's campaign was like Grant's in the Cumberland—"short, sharp, and decisive." One, however, ended in victory, the other as we have related. The gentleman in question taught the trade, however, many new tricks in pushing.

#### JOHN I. BROWN & SON, OF BOSTON,

"Inventors" of Brown's Bronchial Troches, which have had a wonderful run in the States. Some years since the Rev. Henry Ward Beecher—not entirely to fame unknown—indited a letter to the Messrs. Brown, eulogising their troches, and adding, by way of a clincher, that he never omitted a box from his travelling bag on his lecture tours. This letter, multiplied in facsimile by the firm, produced a profound impression, and was the point of a new departure in their publicity. Messrs. Brown have managed their speciality in the most intelligent manner, in proof of which we need but cite their annual sales (50,000*l.*), and allude to the splendid accumulated results of the past fifteen years' business in them.

#### DOCTOR SHERMAN, OF NEW YORK,

A "lozenge" man of former days, now disappeared from the public eye. He it was who said in his advertisements "children cry for them"—alluding to his *worm* lozenges. At any rate, it would appear that newer vermifuges interfered with the doctor's projects, for as time went on the children cried less and less, and of late there is scarcely a faint moan of demand. But in his day Dr. Sherman was in vogue, and, as one of the speciality pioneers, we are doing a duty to name him in this article.

#### LANMAN & KEMP, OF NEW YORK.

Murray and Lanman's "Florida Water" sold for years almost exclusively to the Spanish South American States, but latterly well advertised and introduced at home in North America, has been a mine of profit to this large drug firm. It is but right to say that their product is an exceptionally choice one, and the annual sales are some 50,000*l.* Messrs. Lanman & Kemp are perhaps the largest buyers of oil of lavender from the Grasse region in the world, and in general drug business their trade is one of the largest in the Union. Mr. Kemp is, we believe, sole proprietor of the business at the present time.

#### DOCTOR RADWAY, OF NEW YORK.

A most persistent and lavish advertiser, and as a result the sales of "R. R. R.," or, in plainer terms, Radway's Ready Relief, as well as Radway's Renovating Resolvent and Radway's Pills, are immense.

#### DOCTOR CASWELL, OF NEW YORK,

The proprietor of the most elegant drug store in the metropolis and introducer of several specialities enjoying a large sale. Among them may be named his "Cod Liver Oil" and "Elixir of Calasaya." As a model retail chemists' shop, we can point to none in the Union to compare with it; luxury and utility are combined in the highest degree, and the whole is presided over by the Doctor with a talent and manner worth thousands. This gentleman was originally from Newport, the American Brighton, where he had a first-class establishment, we believe still continued.

Fearful of wearying the reader we now close these brief sketches. We have omitted many portraits worth attempting, but on the whole, our object has not been so much to note personal characteristics as to show the general course of business in America by glances at the careers of prominent men in a certain branch thereof.



## ECCENTRICITIES OF TALENT.

By W. H. WALENN, F.C.S.

THE human mind is divisible into many distinct phases of thought, but is only capable of exercising valid judgment upon those subjects that continually come before it for examination, comparison, and classification. Science at the present day is so varied in its aims and ends, and so extensive in its practical and theoretical details, that, to do justice to any one branch, a specialty must be selected to which all other knowledge may be brought by the individual as to a centre. If each of these statements be correct, it follows that the quality of the science which a man is able to realise depends upon the specialty which he selects as the centre of his thoughts and work.

To illustrate the first point, the faculties of the mind have been classified into those of perception, memory, imagination, and reasoning; and, although every human being has all these faculties developed in a greater or less degree, some may be said to live chiefly in the planes of perception and memory, some add to these faculties that of imagination, and some that of reasoning principally, or of reasoning and imagination combined. A very large number of persons, trustworthy, honourable, and useful in life, manage to get through their existence almost entirely by the aid of the first two faculties. If these embrace science as their sphere of thought or action, their science will be one of classification, or will lie among the lower developments of the practical sciences. If those who exist in the imaginative faculty engage themselves in scientific pursuits, their science will tend towards art, such as painting, poetry, and music. Those who delight in imagination and reasoning combined have the greatest command over the number of subjects they may undertake, and, in accordance with their capacity, they may engage in the most exact and in the deepest studies. Perhaps this class of people may be said to be the only ones who really study, and who succeed in getting from their internal nature a corroboration of their external perceptions and realisations. Thus it happens that each of the individuals in this class are only capable of exercising true judgment in the plane or division of thought in which they may be said to exist, and perhaps in the subordinate divisions. Whether these distinctions of mental organisation are owing to the want of initial capacity, or to the absence of culture, does not enter into the present view of the case; it is sufficient that they exist.

Inasmuch as science may be defined, according to Lord Brougham, as "knowledge reduced to a system," and by other authorities as any branch of knowledge brought under the domain of reasoning, it follows that the classification of various kinds of knowledge under the heads of the various sciences must follow the conditions and therefore the classifications of the various orders of minds. For instance, the highest and most developed sciences, such as mathematics and those physical sciences in which it is adopted, are fully appreciated only by those who make the reasoning and imaginative faculties their centre of action. The sciences of classification, such as botany, oomology, &c., may be fairly understood and realised by those who have the faculty of perception as well as that of memory. This correlation being made evident to the reader, the culmination of the reasoning brought to bear upon this second point indicates that a specialty is selected by all individuals who enter the domain of science, whether they know it or not, that specialty being comprised and principally active in one of the four mental faculties above alluded to. It is perfectly competent for a man to take his specialty from a faculty lower than that which he would be capable of using if his mind had received due and proper cultivation, but still the fact remains that the work of his life is accomplished from his specialty as a centre of mental force, and thence of outward action; and inasmuch as no person can be so well cultured as to have all the qualities of his mind equally developed, the moral or affection side of his nature, his likings and dislikings, would speedily determine the kind of labour that he should undertake in the world, so as to exert his powers to the utmost advantage. Therefore, science being arranged in planes of thought corresponding to those of the human mind, and the progress of each science being shown by the kind and amount of activity of the most active of its members, and moreover, the domain of human knowledge increasing in a very high ratio to that in which time progresses, it is correct to say that the individual does full justice only to that branch of science in which his specialty lies.

No one who has passed through half a life-time can fail to call

to mind many individuals, kindly in their nature and remarkable in their way, who will bear out the validity of the above classification. The commercial man, who abhors what he calls "scientific details," the musical man, who out of his own profession believes in nothing but instinct and memory, and the chemist, who hates numbers, and believes investigative mathematics to be a myth—all give their unconscious testimony to the truth of the development of intellect in definite planes. The author can vouch for the following instances:—A linguist, especially of the Eastern languages, and capable in business, not able to realise certain portions of the multiplication table; a mechanical inventor and head of a thriving firm, well read in history, but looking upon the *exactness* of mathematical thought and work as something to be avoided, and not understanding the way in which light passes through a telescope; a printer not realising the simplest scientific result obtained by induction, such as the distances of inaccessible objects, and the periods of geological time; an archaeologist unable to figure to his mind the path of the electric current in the working of the electric telegraph; lastly, a medical man with a horror of logarithms because they consist of interminable decimals, and unable to define to himself any incommensurable quantity.

Amongst public men whose history illustrates the development of intellect in definite planes, Sir William Snow Harris may be cited. It is said of him\* that his "sympathies were with the Bennetts, the Cavendishes, the Singers, the Voltas of a past age. Frictional electricity was his *forte* and the source of his triumphs. He was bewildered and dazzled by the electrical development of the present day, and almost shut his eyes to it. He was attached too closely and exclusively to the old school of science to recognise the broad and sweeping advance of the new. He was not conscious even of being behind his age when he presented to the Royal Society, in 1861, an elaborate Paper on an improved form of Bennett's discharger, and still less in 1864, when he discussed the laws of electrical distribution, and still relied upon the Leyden jar and the unit jar."

Sir James South, the eminent astronomer and collaborator of Sir John Herschel, was no mechanic. On acquiring a 12-inch object-glass of Cauchoix, he charged Troughton with the construction of the equatoreal; and a dome for containing it was also commenced.† "Unhappily both of them were planned without much respect for the elementary principles of engineering, the first especially; and though Mr. Babbage and others pointed out to him its utter weakness, he merely answered, 'It is designed by Troughton.' He had no knowledge of mechanical science, and had unlimited faith in Troughton's infallibility. As was foretold, the instrument was a failure; and though many attempts were made to correct the inherent vices of its framing, they were only partially successful." Mr. Appold (Appold's centrifugal pump) was a practical man of great inventive genius, and of very considerable power in mental calculation; but with all this originality ‡ "he was not distinguished in the study of the higher relations of the physical forces, and he left to others the task of propounding those noble generalisations of modern days which have done so much to simplify and dignify human knowledge." On the other hand, Macquorn Rankine § was both a practical and a theoretical man, noted for his investigative powers, and for the completeness of his work, but it is said with small originality and practical invention. Gompertz, a Fellow of the Royal Astronomical Society, and a mathematician, had some marked peculiarities: || "he was the last of the *fluxionists*: to the day of his death he used the notation of Newton, and he held that respect for Newton's memory demanded this adherence, while at the same time he maintained the superiority of the system. He never would permit himself the abbreviations  $\log x$ ,  $\sin x$ , &c.; it was always logarithm of  $x$ , sine of  $x$ , &c. This, and some other consequences of isolated thought in the mind of a man who was not thrown among his equals in power until he was an old student, will be looked at with interest."

That, in a powerful nature, the specialty or innate plane of thought and of action will assert itself, in spite of influences that drag downwards, is well illustrated in the life of Sir J. W. Lubbock. Naturally an astronomer and a mathematician, he is reported ¶ never to have liked business, although he attended to

\* *Proceedings of the Royal Society*, vol. 16, Obituary notices, p. xxi.

† *Ibid.*, vol. 16, Obituary notices, p. xlv.

‡ *Ibid.*, vol. 15, Obituary notices, p. v.

§ *Ibid.*, vol. 15, Obituary notices, p. i.

|| *Ibid.*, vol. 15, Obituary notices, p. xxlii.

¶ *Ibid.*, vol. 15, Obituary notices, p. xxxiii.

it with perfect regularity. "His early mornings and evenings were devoted to science, but not without exciting remark. In the day which has gone by, a man of business, or a professional man was required to abstain from everything useful in private life or ornamental in society. He might spend his leisure in sporting, in cards, in smoking, in eating and drinking, or in talking politics, but not promoting science, nor in any unselfish addition to social pleasure. He might listen to music, but woe to the banker or the physician who should sing or play the violin in company. Sir J. Lubbock is one of an eminent band who have driven this paltry prejudice out of society. There is extant a letter of his (October 30, 1840) to a business associate, who had remonstrated in the usual way. 'There is,' he says, 'one circumstance which gave me much pain in a letter you wrote to my late father some time since. You alluded to my position as Treasurer and Vice-President of the Royal Society. . . . But if by rising early and late taking rest, or if in hours which others devote to society or sports of the field, I choose to investigate questions in astronomy, or in any other science, I do not consider that any of the correspondents of the house are warranted in addressing to me any reproach. I submit these remarks to your friendly consideration.'

### TOOTH BRUSHES AND TOOTH POWDERS.

WE take the following remarks from an article on "Dental Pathology" in the *Dental Cosmos*, written by Dr. Foster Flagg, of Philadelphia. He is referring to dental caries, the treatment of which he says is rationally based upon the reasonably thorough appreciation which we have of its causes and method of progress.

Cleanliness is well known to be exceedingly desirable in this direction, not only from the standpoint of comfort to oneself, but, as well, for the obtaining of a greater degree of acceptability to those with whom we are brought in contact. The improved appearance of the denture, the improved odour of breath, the absence, or at least diminution, of general or local dental sensibility, are all arguments in favour of this preventive of decay, even were it not notably an absolute necessity, as a general rule, for the preservation of the teeth; but my observation has led me to think that enlightened nations do not possess in their ordinary use (or perhaps I should say *abuse*) of the tooth brush nearly so good a means for arriving at this result as, possibly, the rubbing-sticks, and other means of dental cleanliness, which are adopted by nations which we classify as merely civilised, or rank even so low as savage.

This conclusion has been reached as year after year I have had brought to my notice dentures the appearance of which, together with the excellent condition of surrounding gum-tissue, having called forth my admiration, I have been astonished (much more so formerly than recently) to find upon questioning, that it would be hesitatingly and apologetically admitted that the teeth *were never brushed*, and that the only cleansing was a good rinsing after meals.

On the other hand, I have had scores of exquisitely sensitive, semi-denuded, discoloured, and decaying dentures brought to me with the self-gratulatory information that the existing unfortunate condition was not due to want of care, for the teeth and gums had been thoroughly brushed five times daily for many years, and with the best and stiffest brushes that could be obtained.

I could only draw the two inferences, that in the first class of cases good healthy conditions had been maintained with but trifling attention to cleanliness; and, in the second class of cases, that injudicious excess had so woefully overstepped the bounds of necessity as to have produced a very great degree of harm.

That the proper use of judiciously-selected tooth brushes is attended with most satisfactory results is indisputable; but, as I have intimated, I have come seriously to question as to whether more harm than good is not obtained from the manner in which they are generally employed.

The brush should be selected for its moderate softness, and by no means for its stiffness; it should have rounded edges, both of bristles and handle, that neither may wound the gums; the length of time for each brushing of the teeth should never

exceed from ten to twenty seconds (by the watch); the water used should never be so cold as to cause the least uneasiness to the teeth, and the articulating faces of the teeth should be even more carefully brushed than the labial or buccal. Twice, or at most, thrice brushing daily, is as often as any denture will permit, and great caution in regard to brushing the gums from off the necks and even roots of the teeth will have to be exercised if more than one brushing daily is indulged in.

Tooth powders, containing insoluble ingredients, such as ground barks and especially pulverised charcoal, do nothing toward preventing decay of the teeth, and are eminently injurious by their insinuation under the margin of the gums.

For very many years it has been noticed that the use of soap as an adjunct in cleansing the teeth has proved very efficacious in the prevention of decay; this is believed to have been particularly due to the alkaline reaction of certain kinds of soap formerly used, such as mottled Castile, for example; but of late years to this has been added the equally great, and possibly greater, efficacy of some of the most noted antiseptics, such as creosote, carbolic acid, &c., which, conjoined to saponaceous compounds, have wrought wonders in the retardation, and even arrestation, of caries.

Together with these, or any soaps, it is advisable to use some frictional powder, gentle or harsher, according to requirements; with some the addition of precipitated chalk is all-sufficient to prevent the tendency to yellowish discoloration which is apt to accompany the frequent use of soap alone; but again, in other instances, it is found necessary to employ powdered cuttle-fish bone, or even finely-pulverised (levigated) pumice stone.

It has often been suggested that materials of so sharp a grit as the last-mentioned article should be used with great caution, for fear of injury to the enamel, but my experience has led me to believe this fear entirely unfounded, as many of my patients have employed it for years, with no other result than the maintenance of freedom from the unsightly green deposit which collects so rapidly upon some teeth.

When, from testing the contents of cavities of decay and the fluids of the mouth with litmus paper, an acid condition is pronounced, great benefit will be derived from the addition of a few drops of ammonia, or a grain or two of bicarbonate of soda, to the water used for brushing the teeth, or lime water may be easily made by pulverising a piece of quicklime about the size of a walnut, and putting it into a pint bottle; add to it water, shake, allow it to settle, and it is ready for use. When nearly used, fill the bottle again with water, and with the same treatment as before it is again ready. Thus lime water for a lifetime may easily be had.

If more than this seems indicated, I next add to the above the directions for the topical employment of precipitated chalk. This it is most advantageous to use at night, just before going to bed. It is to be used in small quantity by dipping the end of a finger into the chalk, and thus conveying from three to five grains of the powder to the interstices of the lower buccal teeth.

It is then gently rubbed into these and *allowed to remain*: so little as to be unnoticed by the senses of touch and taste, and yet enough to do great good in the desired direction.

With ordinary care, and particularly with the use of soap, the morning brushing destroys most of the power for harm pertaining to all the putrescing food and mucus, and all the fungiferous growth of the previous night; the mastication and concomitant outpouring of saliva at the morning meal completes the work of protection for the time, and although the remaining food which is left in cavities, crevices, and interstices would in time become productive of caries, yet the allowed time is insufficient for the accomplishment of much injury before the mastication and insalivation of the noon-tide food repeats the dislodgment of the spoiling remains, and thus again protects the denture; again, at the evening meal the same result ensues, to which is frequently added that brushing of the teeth which forms part of the preparation for the evening. Thus it is that the teeth pass through the day and early part of the night without much progress of caries; but after retiring, the remaining particles of acidifying food, the inspissating mucus, the developing fungi, all combine to make the *hours toward morning pre-eminently the period of decay*. Then it is that the chalk placed between the teeth late at night, and *allowed to remain there*, comes to the rescue, and by its antacid reaction prevents, in great degree, both disintegration dependent upon acidity and parasitic growth.

In connection with these local measures, we prescribe for the

good of the teeth just that which will be productive of greatest general good—gentle or powerful tonic medication, according to systemic indications, alkaline, neutral, or (as I have before intimated) powerfully acid, as may be required; good, nutritious food; above all, *rest*, both physical and mental: and the almost immediate response to treatment such as this will be alike surprising and gratifying. For a time, somewhat frequent examinations as to progress should be instituted, and the patient's attention be directed to the changes which will soon be present. The ceasing of appearance of new cavities of decay should be remarked; the absence of sensitiveness of teeth, generally and locally, should be commented upon; the unchanged condition of edges of cavities containing fillings should be pointed out, as contradistinctive to the previous early eroding; and the continuance—the persevering continuance—of effort upon the part of the patient be faithfully and earnestly urged; and, *if doubt* as to the connection between treatment and result is even slightly intimated, permit the cessation of effort for a few months, and the probability will be that the expense attendant upon the introduction of a few new fillings, and the reparation of several old ones, will fully and finally convince both patient and practitioner that upon mutual effort depends success, and that by mutual effort everything will be gained.

CAOUTCHOUC.

THE following details respecting the production of caoutchouc, now a substance included in the British Materia Medica, are obtained from the *Journal de la Société d'Horticulture*, through the *Repertoire de Pharmacie*. The gum is obtained from several trees, and from various parts of the world—Brazil, Mexico, Africa, Madagascar, India, Java, and Australia, all furnishing specimens. The best is that of Para, where it is chiefly obtained from the *Hevea guinnensis*. From August to January it is produced in best condition, that being the time of fine weather. Incisions are usually made in the trees in the evening, and during the night a juice of a cream-like appearance exudes. After a time the caoutchouc proper separates from and appears as if suspended in an opaline liquor. The *Castilloa elastica*, which grows abundantly in Central and South America, also yields an excellent caoutchouc. April is found to be the best month for this, and it is said that a tree of about 50 centimetres diameter will yield about 25 kilogrammes of caoutchouc. The worst caoutchouc is that of Guatemala, which is generally more or less mixed with resinous substances. It is often of a spongy character. That procured from Asia is obtained from the *Ficus elastica*, from which it is obtained by cutting the tree into small logs and heating them. The quality is not of the highest. An excellent caoutchouc is supplied by Madagascar, which is almost equal to that of Para; but that brought from Central Africa, though there appears to be an abundant supply, is nearly ruined by the careless or ignorant methods of preparation which are adopted.

It appears that in many parts of the world the destruction of the tree is the stupid accompaniment of the collection of the gum. This process, if continued, must eventually occasion an embarrassing rarity of this most valuable substance. For the sake of Africa, as well as of Europe, it is much to be hoped that in the development of commerce which we may hope will ere long result from the persistent efforts of the explorers of all lands, the careful and wise preparation of caoutchouc will not be lost sight of.

BLOOD POISONING BY SOAP POWDER.—A singular case of blood poisoning has occurred at Wolverhampton. An old woman aged 66, named Arthur, had been using a "soap powder," which is largely advertised as a help to laundresses. Soon after she commenced to use it a pimple appeared upon her wrist. Over the site of the pimple an abscess soon formed, and others upon different parts of the body; the patient suffering from general symptoms of blood poisoning. Dr. C. A. M'Munn, who was called in, opened the abscesses, and every effort was made to save her, but in vain, as she died after being ill about a month or five weeks.

THE REGISTER OF CHEMISTS AND DRUGGISTS.

THE Registrar appointed under the Pharmacy Act has kindly furnished us with the following list of names which will be struck from the Register of Chemists and Druggists on December 31, 1874, except in cases where the persons affected shall establish their identity previous to that date. Two registered letters have been sent to each person herein named without evoking a response.

Those marked \* are Pharmaceutical Chemists.

- Adeock, William ..... 49 Vanxhall Road, Birmingham.
- Adey, Edward Linnell ..... 5 Onk Villas, Park Road, Hornsey, N.
- Alcock, Alfred ..... 290 Shales Moor, Yorks.
- Alcock, James William ..... 265 Whitechapel Road, London, E.
- Aslin, Richard ..... 55 Market Street, Chorley, Lancashire.
- Atkinson, William Charles ..... Dunster, Somerset.
- Baillie, Alexander Mitchell ..... Callander, Perthshire.
- Ballard, Frank Perry ..... High Wycombe, Bucks.
- Bardsley, William ..... 1 Chestow Terrace, High Road, Peckham, Surrey.
- Beattie, James ..... 144 Asylum Road, Peckham, Surrey.
- Bebbington, Thomas ..... 66 Great Howard Street, Liverpool.
- Bell, Thomas ..... Harrogate.
- Bidwell, John ..... 300 Holborn, London, W.C.
- \*Binley, Joseph Thomas ..... Brighton.
- Binstead, Arthur ..... 226 Blackfriars Road, Surrey.
- Birch, Thomas Frederick ..... 45 Clark Street, Stepney, London, E.
- Blackith, Charles Robert ..... Queen Street, Market Rasen, Lincolnshire.
- \*Booth, Alfred ..... 59 Pern Street, Salford, Lancashire.
- Bowler, James Arthur ..... Alton, Staffordshire.
- Bradbury, Robert ..... Great Yarmouth.
- Bradley, Thomas ..... Castle Northwich, Cheshire.
- Brandum, Alfred ..... 254 Whitechapel Road, London, E.
- Brett, John ..... 94 Commercial Street, Newport, Mon.
- Brett, Samuel Fisher ..... 29 Upper Priory, Birmingham.
- Broad, Henry C. .... Denbeigh Street, Bristol.
- \*Brown, A. McLaren ..... Brighton.
- Brown, Robinson ..... 332 Kennington Road, Surrey.
- Burder, Robert ..... Moant Radford, Exeter.
- Calvert, John Henry ..... 1 Osborne Street, Hull.
- Campbell, John ..... 13 Cora Street, Bristol.
- Cant, John Reymner ..... 105 Lord Street, Liverpool.
- Cantrell, William ..... 277 Upper Parliament Street, Liverpool.
- Carns, Thomas ..... 94 Fenton Street, Leeds.
- Carroll, Denis ..... 9 Upper Foster Street, Walsall.
- Castell, Thomas Barford ..... 112 Brunswick Road, Poplar, London, E.
- Chambers, Charles ..... 30 Clarence Street, Liverpool.
- Chapman, John ..... 19 King Street, Leicester.
- Christie, James ..... Aberdeen, N.B.
- Chudleigh, James ..... Bovey Tracey, Devon.
- Clark, George ..... 92 City Road, Manchester.
- Clatworthy, Seymour Walter .. 1 King's Mead Square, Bath.
- Cocking, Samuel ..... Howden, Yorks.
- Collingwood, Felix Friend ... 110 High St., Camden Town, London, N.W.
- Cooke, Henry John ..... 11 Brougham Road, Dalston, London, E.
- Cooper, Helen ..... 97 Fleet Street, London, E.C.
- Corke, Alfred ..... 1 Portwood Street, Liverpool.
- Cox, Richard Cobden ..... 25 Chilworth Street, London, W.
- Cranidge, John ..... Dirtness Bridge, Lincoln.
- Criswell, Frederick ..... Seaforth, Lancashire.
- Crompton, Benjamin ..... Morton Bottoms, Harpurhey, Manchester.
- Cronkshaw, John ..... 88 Great Russell Street, London, W.C.
- Crooks, Joseph ..... Bradford.
- \*Crossby, Joseph Parker ..... Bakewell, Derbyshire.
- Dancaster, Arthur Edwin ..... 3 Cambridge Terrace, Kingsland, London, E.
- Davies, Henry Edward ..... 43 Little Britain, London, E.C.
- Dawson, Charles ..... 6 Ellen Place, York Road, Wandsworth, Surrey.
- Dawson, Robert ..... 74 Collyhurst Street, Manchester.
- Dencon, Arthur ..... Witham, Essex.
- Dickson, Alfred ..... Monkbar Within, York.
- Dixon, Joseph ..... 15 Hampden Street, North Ormesby, Middlesborough-on-Tees.
- Dixon, Joseph ..... 53 Roman Road, Victoria Park, London, E.
- Dobson, John Benjamin ..... 133 Jubilee St., Mile End Road, London, E.
- Donald, James ..... 314 Caledonian Road, London, N.
- Doughty, Thomas ..... Holloway, London, N.
- Doyle, Patrick ..... 66 Great Howard Street, Liverpool.
- Dubois, Bernhard William ... 2 Roberts Place, Stepney, London, E.
- \*Dulley, Joseph ..... Wolverhampton.
- Duncombe, John Lionel ..... 5 Portland Street, Southampton.
- Duncombe, Wm. Pauncefort .. Wincanton, Somerset.
- Dunkerley, James ..... 3 Promenade, Uxbridge Road, Ealing.
- Durham, Frederick William .. Norbiton, Kingston-on-Thames.
- Dutton, Wm. Quinton ..... 9 William Street S., Stepney, London, E.
- Edmunds, John ..... 20 Faulight Terrace, Nnhead, Surrey.
- Edwards, Joseph ..... 101 Chester Gate, Macclesfield.
- Ellis, Henry, junr. .... 8 Richmond Terrace, Friar's Causeway, Leicester.
- \*Ely, George ..... Old Basford, Notts.
- Erkdale, Thomas ..... 232 Great Homer Street, Liverpool.
- Evans, Frederick William ... Tredegar, Mon.
- Evans, John James ..... London.
- Evans, Price James ..... Hope Cottage, Slad Road, Stroud.
- Evans, William ..... Tredegar, Mon.
- \*Evans, William Henry ..... Haverfordwest.
- FitzGerald, Henry ..... Bath.

- Forrest, John Challand ..... 54 Brunswick Street, Sheffield.  
 Fox, John William ..... Aylesbury, Bucks.  
 Fullager, Charles ..... Stannore, Middlesex.  
 Funnell, Edward ..... 14 Charles Street, Brighton.  
 Funnell, William Henry ..... 14 Charles Street, Brighton.  
 Furze, Leader ..... 47 Hughes St., West Derby Road, Liverpool.  
 \*Fyfe, John Lawrence ..... Brighton.  
 Gay, Christopher William ..... 103 Lisson Grove, London, N.W.  
 Goadsby, Francis ..... 91 Upper Brook Street, Manchester.  
 Goodall, John Edward ..... 35 Myddleton Street, St. John Street Road, London, E.C.  
 \*Goodson, Jabez ..... 37 Leadenhall Street, London, E.C.  
 Goulstone, Cornelius Edward ..... 14 Clarence Street, Liverpool.  
 \*Gowland, George Robert ..... 4 Olive Terrace, Chester Road, Stretford, Manchester.  
 Grainger, John ..... 1 East Robert Street, Salford, Lancashire.  
 Greasley, Henry ..... 78 Bolton Street, Bury, Lancashire.  
 Greaves, Bernard George ..... 2 Caton Street, Tanworth St., Manchester.  
 Greaves, James Alfred ..... 53 Park Lane, Liverpool.  
 \*Green, Joseph ..... Bridge Mills, New North Road, London, N.  
 Green, Nathan M. ..... 103 Thirlmere Road, Everton, Liverpool.  
 Griffith, Richard Wm. Smith ..... Southampton.  
 Griffiths, John ..... 102 Woodward Street, Manchester.  
 Griffiths, Joseph ..... 138 Great Homer Street, Liverpool.  
 Halfhide, Thomas Young ..... 16 Halsea Terrace, Chelsea, London, S.W.  
 Hall, Joseph ..... Darlington.  
 Halley, William ..... 503 Lawmarket, Edinburgh, N.B.  
 \*Hamilton, Francis Daney ..... Apothecary's Quarter, Aldershot Camp.  
 Harker, Robert Alfred ..... 25 Porter Street, Hull.  
 Harold, Edward Charles ..... Tenterden, Kent.  
 Hartshorn, Albert ..... 10 Prince's Square, Finsbury, London, E.C.  
 Haswell, Joshua Edwin ..... 9 Marlborough Terrace, Upper Holloway, London, N.  
 Havart, Charles ..... 310 Easton Road, London, N.W.  
 Hawks, John Swain ..... Cookley, near Kidderminster.  
 Hawksworth, Thomas ..... 234 Bradford Street, Birmingham.  
 Hayman, Henry ..... 9 Aspland Terrace, Amhurst Road East, Hackney, London, E.  
 Hendebourek, John L. ..... 33 Park St., Camden Town, London, N.W.  
 Herries, William ..... 14 Charles Street, North Road, Darlington.  
 Hodges, Edward Richard ..... 1 Holmesdale Road, Selhurst, S. Norwood.  
 Hodgson, John Wilkins ..... 121 Mill Street, Crewe, Cheshire.  
 Hoe, James Wellard ..... Spring Hern, near Ross, Herefordshire.  
 Holmes, William Court ..... London.  
 Horden, Thomas Rear ..... Norwich.  
 Horner, James William ..... 92 Beckingham Rd., Kingsland, London, E.  
 Hosie, John ..... Aberdeen, N.B.  
 Howard, Thos. Lister Ogden ..... 54 St. Oswald Street, Old Swan, West Derby, Liverpool.  
 Howarth, William ..... 37 London Road, Manchester.  
 Howe, Henry William ..... 29 Exmouth Street, London, E.C.  
 Jackson, Robert ..... Blakenhall, Wolverhampton.  
 James, William ..... Priest Place, King's Lynn, Norfolk.  
 \*James, William Albert ..... Walton-on-Thames.  
 Jefferson, John Mitchell ..... Southport, Lancashire.  
 Jenkins, Joseph ..... 27 Regent Street, Leamington.  
 Johnson, Joseph ..... 53 New Town Row, Birmingham.  
 Johnstone, William ..... 53 St. James's Street, London, S.W.  
 Jones, Abraham Dale ..... Hill Top, West Bromwich.  
 \*Jones, Henry ..... Andersonian University, Glasgow, N.B.  
 Jones, James Gibbs ..... 55 King Henry's Walk, Stoke Newington London, N.  
 Jones, John ..... 1 Amersham Park Villa, New Cross, Kent.  
 Jones, William ..... 34 Langrove Street, Everton, Liverpool.  
 Juler, Richard Roan ..... 15 Albion Road, Wandsworth Road, Surrey.  
 Keall, Francis ..... 17 High Street, Canterbury.  
 Keats, George ..... New Malden, Surrey.  
 Kelland, George Henry ..... 16 Broadway, Deptford, Kent.  
 Kennedy, Patrick Maclean ..... Oxford Street, Glasgow, N.B.  
 Kidd, John George ..... 73 Shepherdess Walk, London, N.  
 Kitchin, Jonathan ..... 18A Rodney Street, Pentonville, London, N.  
 Langman, Jonathan ..... Cambridge.  
 Lansdale, John Richard ..... Trowbridge, Wilts.  
 Lawson, Henry ..... 7 Green Terrace, Middlesex.  
 Leaker, John Waterman ..... 17 Antill Road, North Bow, London, E.  
 Lear, Charles ..... 7 South Andley Street, London, W.  
 Lear, William ..... 25 John Street, Pentonville, London, N.  
 Ledger, Edmund ..... 17 Walton Street, Ovington Square, London, N.W.  
 Leonard, Thomas ..... 86 Grafton Road, Kentish Town, London, N.W.  
 Lewis, Eleanor ..... Aberdeen, Merionethshire.  
 Lock, William ..... 60 Monnt St., Grosvenor Sq., London, W.  
 Longley, Charles ..... 223 New Kent Road, Surrey.  
 Lord, Frederick ..... 10 Brongham Place, Edinburgh, N.B.  
 Low, Joseph ..... 34 Low Street, Banff, N.B.  
 Lneas, John Phillip ..... Colebeater.  
 McAvooy, George ..... 115a King Street, Great Yarmouth.  
 McCrece, William ..... 4 Russell Road, Leyton, Essex.  
 Macdonnell, Daniel ..... 27 Hall Craig Street, Airdrie, N.B.  
 Macfarlane, William ..... 34 Essex Street, Newcastle-on-Tyne.  
 McKenny, William Hall ..... 45 Rosamond Street West, Chorlton-on-Medlock, Manchester.  
 Maenellage, David ..... 43 Stevenson Street, Caltun, Glasgow, N.B.  
 Mann, William ..... 73 South Portland Street, Lanrieston, Glasgow, N.B.  
 Marshall, Elizabeth Ann ..... Maldon, Essex.  
 Marshall, Frederick ..... 38 Bedford Place, Southampton.  
 Marshall, William Finlayson ..... 16 Howe Street, Edinburgh, N.B.  
 Martel, William Agnew ..... Landport, Hants.  
 Mathias, Henry Lewis ..... 4 Marshall Street, Golden Sq., London, W.  
 Matthews, Edward ..... 53 Sidmonth Street, Regent Sq., London, W.C.  
 Matthews, John ..... St. Paul's Street, Portland Square, Bristol.  
 Meacham, James Edwin ..... 129 Sussex Street, Lower Broughton, Manchester.  
 Mecke, Walter ..... Colmore Buildings, Highgate, Birmingham.  
 Melnais, John ..... Exmouth House, Hastings.  
 Mewes, Alfred ..... 1004 Islington Fiveways, Birmingham.  
 Miller, James ..... 42 Maryfield Place, Edinburgh.  
 Monkman, James ..... 10 Lower Cheltenham Place, Bristol.  
 Monro, Henry L. ..... 301 Hope Terrace, Chester Road, Hulm Manchester.  
 Morgan, William Hiltchings ..... Walters Road, Swansea.  
 Morris, Frederick Robert ..... 59 High Street, Lowestoft.  
 Munday, Alfred George ..... 43 Leather Lane, London, E.C.  
 Munday, Walter Henry ..... 43 Leather Lane, London, E.C.  
 Murray, William ..... 125 Brunswick Road, Liverpool.  
 Myers, William ..... 38 Barnet St., Hackney Road, London, E.  
 Naylor, Joseph ..... 8 High Street, Bow, London, E.  
 Neal, John Breward ..... 26 Steelhouse Lane, Birmingham.  
 Neale, William ..... 159 Grange Road, Bermondsey, Surrey.  
 Newton, Samuel ..... Farnworth, Lancashire.  
 Nicholls, Joseph Charles ..... 211 Blackfriars Road, Surrey.  
 \*Orton, Thomas Johnson ..... 27 Regent Street, Leamington.  
 Pattinson, Matthew Lee ..... 216 Park Road, Liverpool.  
 Paul, Charles James ..... 83 Bold Street, Liverpool.  
 Pearce, Frank Tring ..... 8 Millman St., Bedford Row, London, W.  
 Pearson, Daniel ..... Dudley.  
 Pearson, Edward ..... Grantham.  
 Pearson, William ..... 3 Mildam Bank, South Shields.  
 Pettinger, John Swift ..... 161 Sussex Street, Lower Broughton, Manchester.  
 Piekrell, George ..... 23a Heywood Place, Hanson Lane, Halfpenny Yorks.  
 Platt, Samuel Hyde ..... Stockport Road, Denton, Lancashire.  
 Plummer, Arthur ..... Reading.  
 Pogson, Thomas Frederick ..... 2 Bull Ring, Horncastle.  
 Pollexfen, Edward ..... 17 Bull Ring, Horneastle.  
 Powell, Edward James ..... 4 Burlington Place, Bath.  
 Pugh, Hugh Meyricke ..... Maccbylleth, Montgomeryshire.  
 Rabson, Henry ..... Dulwich, Surrey.  
 Radford, Isiah Can ..... Devonport.  
 Raff, James ..... 1 Toll Cross, Edinburgh.  
 Ragsdell, Walter ..... Clifton Road, Norwood, Surrey.  
 Read, Henry Holditch ..... Lynn Regis.  
 Rees, George Louis ..... 11 Leighton Road, Kentish Town, London, N.W.  
 Rees, Thomas ..... 128 High Street, Merthyr Tydvil.  
 \*Reynolds, Arthur ..... Watton.  
 Richardson, Robert ..... Dumfries, N.B.  
 Ridge, James ..... Shavington, near Nantwich, Cheshire.  
 Ridge, Jesse ..... 15 Etham Place, Old Kent Road, Surrey.  
 Ritchie, George ..... 1 Minerva Street, Glasgow, N.B.  
 Robertson, Henry Matthew ..... 194 Grange Road, Bermondsey, Surrey.  
 Roberts, David Watkin ..... Chester.  
 Roberts, James ..... 102 Breck Road, Liverpool.  
 Roberts, Robert ..... Prospect Street, Huddersfield.  
 Robertson, William Gardiner ..... 7 London Street, Edinburgh, N.B.  
 Robinson, Edward George ..... 2 Fishmonger Alley, Fenchurch Street, E.  
 Robinson, John ..... Oakenshaw, near Bradford, Yorks.  
 Rogerson, Jonathan Lowndes ..... 178 Chapel Street, Salford, Lancashire.  
 Rose, George ..... Rolleston, near Burton-on-Trent.  
 Rowe, Thomas Dowden ..... 44 Kentish Town Road, London, N.W.  
 Ryder, James Brown ..... 15 Albert Road, Morice Town, Devonport.  
 Sanders, Richard ..... 15 Mulberry Street, Liverpool.  
 Sangster, William ..... 25 Morton Rd., New North Rd., London.  
 Saph, Henry ..... 9 Victoria Terrace, Hampstead, London, N.W.  
 Searl, Thomas ..... Loughton, Essex.  
 Searl, Thomas King ..... Loughton, Essex.  
 \*Selfe, William Gilbert ..... 27 Fetter Lane, London, E.C.  
 Sewell, Joseph ..... 34 Albion Road, Stoke Newington, London, N.  
 Sharpe, Edwin ..... 210 West Street, Sheffield.  
 Shillito, Richard ..... 68 Marsh Lane, Leeds.  
 Shipley, William ..... St. John Street, Ashbourne, Derbyshire.  
 Simons, Nathaniel Wells ..... 45 Baldwin Street, Bristol.  
 Snelair, James ..... 116 Tunnel Road, Edge Hill, Liverpool.  
 Skinner, Thomas ..... 82 Sidbury, Worcester.  
 Slack, George ..... Bow Street, Sheffield.  
 Slaek, George Thomas ..... Bow Street, Sheffield.  
 Smith, Benjamin William ..... 53 Ernest Street, Bermondsey, Surrey.  
 Smith, Clara Brook ..... 13 Dean Street, London, W.  
 Smith, George Cuthbert ..... Rosedale, East Yorks.  
 Smith, Henry James ..... 12 Carlton Road, Nottingham.  
 Smith, Robert ..... Llanymyneck, Montgomeryshire.  
 South, George ..... Camden Town, London, N.W.  
 Sprague, Daniel Joseph Howe ..... All Saints' Rd., Westbourne Park, London, W.  
 Sprout, Robert ..... 22 Market Place, Hull.  
 Spurling, John ..... Wivenhoe.  
 Stewart, Robert Gordon ..... 15 Cheyne Street, Edinburgh, N.B.  
 Suggato, Henry E. ..... 28 Russell Road, Holloway, London, N.  
 Sutcliff, John ..... Much Wenlock, Salop.  
 Sykes, Joseph Spencer ..... Sheffield.  
 \*Taite, James ..... Southwark Street, Southwark, Surrey.  
 Tanner, Alfred John ..... Torquay.  
 Taroni, George ..... 730 Old Kent Road, Surrey.  
 Tatlow, Benjamin ..... 30 High Street, Wivenhoe.  
 Taylor, Henry ..... 10 Grosvenor Place, St. Paul's, Bristol.  
 Thomas, George Morgan ..... 18 Whitechapel High Street, London, E.  
 Thomas, Rees Henry ..... 3 Gerard Street, Derby.  
 Thompson, George ..... Rock Ferry, Cheshire.  
 Thompson, William ..... Harpenden, Herts.  
 Threlfall, Hugh ..... 25 Great Cornam Street, London, W.C.  
 Timothly, Edward Vincent ..... 121 Netherfield Road North, Liverpool.  
 Todd, Edward ..... Guisborough, Yorks.  
 Tolith, John ..... 2 Copenhagen Street, Islington, London.  
 Trlx, Alfred John ..... 36 Swinbrooke Road, Notting Hill, London, W.  
 Trundle, Wm. Edward Rust ..... Long Stratton, Norfolk.

Twitchell, Richard..... Stonehouse.  
 Tyrer, Thomas Frederiek..... 81 Redcliff Street, Bristol.  
 Vickerman, David..... 1 Clarence Street, Hull.  
 Vine, John..... 54 Crawford Street, London, W.  
 Walker, James Joseph Fred. .. 77 Indrmary Road, Sheffield.  
 Watkins, Thomas W. .... Dudley.  
 Watts, Alfred..... 7 Rosefield Terrace, Holly Walk, Leamington.  
 Wagh, Henry..... 116 High St., Camden Town, London, N.W.  
 Wealthall, James..... 55 Bntler Street, Anecoats, Manchester.  
 Weeding, William Samuel .... Hastings.  
 Westmacott, John Martin .... Alcester, Warwickshire.  
 Whiffield, Henry Spencer..... Boundary Cottage, Chapeltown, Leeds.  
 Whitfield, John Longley..... 19 Stevenson Street, Glasgow, N.B.  
 Wilcox, William..... Dover.  
 Wilkins, James..... Eastbourne.  
 Williams, David..... 41 Manchester Street, Crewe, Cheshire.  
 Williams, Edwin Lewis..... Berkeley, Gloucestershire.  
 Williams, Henry Pryddereb .. 31 Pier Street, Aberyswith.  
 Williams, James..... 13 Curzon Street, Mayfair, London, W.  
 Wilson, Henry Digby..... 23 John Street, Brighton.  
 Wilson Joseph Gilpin..... York.  
 Wilstrop, William Richard ... 3 Weatherills Place, Carr Lane, Hull.  
 Winter, William..... 47 Minorics, London, E.  
 Wood, Thomas..... 47 Minorics, London, E.  
 Wooley, James..... 4 Cambridge Crescent, Gough Road, Edgbaston, Birmingham.  
 Wright, William Henry..... 107 High Street, Camden Town, London, N.W.  
 Yeats, William Aubury..... 254 Goswell Road, London, EC.  
 Young, James John..... Carr Street, Ipswich.  
 Young, William Fitzherbert .. 3 Grundy Street, Poplar, London, E.



LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued in *re* the following estates.

The dates are those of the petitions :—

EDFORD, WILLIAM, London Road, Brighton, surgeon. Nov. 27.  
 BLAKE, ROBERT H., 52 Great Ormond Street, Bloomsbury, physician. Nov. 14.  
 RIERLEY, JOHN, Sheffield, late Frodsham, Cheshire, apothecary. Nov. 16.  
 FRANCIS, CHARLES ERNEST, City Road, Hulme, near Manchester, chemist. Nov. 13.  
 BBS, ALFRED, 30 Park Street, Luton, druggist and straw hat and bonnet manufacturer. Nov. 13.  
 REENWOOD, JAMES, 48 Canonbury Square, Islington, M.D. Nov. 9.  
 AMERT, SAMUEL, 15 Gower Street, M.D. Nov. 14.  
 EETE, WILLIAM WAPLES, 282 Oxford Street, Manchester, and Fallowfield, near Manchester, chemist. Nov. 27.  
 ONG, JOHN, trading as John Young & Co., Sunderland, oil merchant and chemist. Dec. 4.

PARTNERSHIPS DISSOLVED.

AGGE & LOVEGROVE, Hythe, Kent, surgeons. Oct. 11.  
 ANSON & CROSSLAND, Cleckheaton, Yorks, chemists. June 26. Debts by John Hanson.  
 CDD, G. E. & R., 103 Suffolk Street, Birmingham, druggists and spice merchants. Oct. 17.  
 PFORD & MARSHALL, High Street, Deritend, Birmingham, surgeons. Nov. 13.  
 PATERSON, WILLIAM, & SONS, Aberdeen, wholesale druggists and merchants. Sept. 30. As regards Henry Paterson only.  
 OTHERY, JOHNSTON & Co., Hightown, Liversedge, chemists, oil merchants, soap manufacturers, and agents. Oct. 20. Debts by Robert Rothery.

DIVIDENDS DECLARED.

LANKLEY, WILLIAM H. (Bkt.), Gainsborough, chemist. 1st div., 2s.; J. Craven, at Oldman & Iveson's, solicitors, Gainsborough.  
 AND, HENRY LEA (Liq.), Middlewich, Cheshire, chemist. 1st and final div., 1s. 3½d.; T. Stainer, at J. J. If. Cooke's, Middlewich, solicitor.



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

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

- 3483. J. Townseud, of Glasgow. Improvements in obtaining chlorine. Dated October 10, 1874.
- 3546. H. B. Fox, of Oxtou, Chester. An improved stopper for bottles for containing aerated or gaseous liquids. Dated October 15, 1874.
- 3575. P. J. Luntley, of Scarborough, Yorkshire. Improvements in stoppers for bottles containing soda water and other such fluids, and in bottles connected therewith. Dated October 17, 1874.
- 3757. M. Ziegler, of Bucklaud Crescent, Belsize Park. Improvements in treating aniline and other dyes to prepare them for use in dyeing, printing and colouring. Dated October 30, 1874.
- 3815. J. Edwards, of New Garden Street, Hull, Yorkshire. Improvements in bottles for containing aerated liquids and in stoppers applicable thereto, such stoppers being also applicable for other purposes. Dated November 5, 1874.
- 3824. N. Thompson, of Brooklyn, New York, U.S. Improvements in stoppers for bottles, jars, or other hollow articles. Dated November 5, 1874.

Letters Patent have been issued for the following :—

- 1617. J. Edwards, of New Garden Street, Hull, Yorkshire. Improvements in stopping bottles, jars, and such like vessels, and in apparatus for filling bottles and vessels, such apparatus being specially adapted for filling same with aerated liquids. Dated May 1, 1874.
- 1626. D. Nicoll, of Paternoster Row. Improvements in vessels for containing aerated and other liquids. Dated May 8, 1874.
- 1672. J. H. Johnson, of London. Improvements in the production of caustic alkalies and of carbonic acid. Dated May 11, 1874.
- 1742. E. Königs and J. Henderson, of Irvine, Ayr, North Britain. Improvements in obtaining sulphate of soda or of potash, hydrochloric acid and chlorine. Dated May 16, 1874.
- 1878. O. J. Scholz, of 51 Sand Street, Woolwich. Improvements in machinery for putting capsules on bottles and other vessels. Dated May 29, 1874.
- 2160. B. Hunt, of London. Improved process for the preservation of articles of food. Dated June 22, 1874.
- 2181. B. Hunt, of London. Improvements in the preparation of ozone, azotic acid, and in apparatus used therein. Dated June 23, 1874.
- 2807. A. F. de Hemptinne, of Molenbeek Saint Jean, Brussels. Improvements in and improved appliances and arrangement of apparatus for the manufacture and concentration of sulphuric acid. Dated August 14, 1874.
- 3005. W. Hunt, of Castleford, near Normanton, Yorkshire. Improvements in apparatus for the manufacture of sulphate of soda and sulphate of potash. Dated September 2, 1874.
- 3025. C. J. Schofield, of Manchester. Improvements in furnaces or apparatus for the manufacture of alkalies and other purposes. Dated September 3, 1874.
- 3097. A. M. Clark, of London. Improved apparatus for filling bottles or other vessels.

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- 833. C. Tapp. Bottling aerated liquids. *8d.*
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Joint Author of a Book on Water Analysis, and of the  
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#### THE DEFINITION OF ADULTERATION.

IF the public analysts choose to combine and form a society with but thinly concealed trade-union purposes, they are taking a step which it is perfectly legitimate for them to take, but which must necessarily expose them as a body to criticism which would otherwise be applicable only to individuals. In the first place, no matter how lofty may be the tone they choose to adopt, perverse cynics will not fail to recognise a correspondence between their professional desire "to promote and maintain the efficiency of the laws relating to adulteration" and the shout of the men of Ephesus in respect to Diana. But even ordinary observers may not without reason take alarm at the openly professed desire "to secure uniformity in the statement of [analytical] results with reference to the detection of adulteration." Doubtless, we should add that this uniformity is to be arrived at by "improved processes," and the idea that analysts intend to deliberately suppress or systematically "cook" their evidence is by no means what we think or intend to convey. We are not discussing motives, which in this instance are neither particularly noble nor particularly mean. But we are not quite shut our eyes to the lessons which recent experience has taught us. We do not forget those gentlemen who, in the words of the House of Commons Committee, "evinced more zeal than discretion in carrying out their novel and difficult duties." Without desiring to be uncharitable, we are afraid certain of the official analysts thought more of advertising themselves than of benefiting the public; and their apparent assumption that the Adulteration Act had been passed in order to provide profitable occupation for themselves and a means of winning fame through sensational newspaper paragraphs,

fortunate tradesmen serving as pedestals, was the main cause of the present breakdown of the Act. Respectable tradesmen objected to be hunted down in order to make sport for analysts, and the resulting fights in the law courts brought out nothing so prominently as the weakness and the presumption of the omniscient magicians who had so long frightened the public without let or hindrance about their food, drink, and drugs. The analysts were not slow to perceive how considerably the scientific disputes in the law courts were likely to affect their reputation, and therefore it is not very surprising if "uniformity in the statement of results" should appear more desirable to them than it will to the trading classes or to the legislature. For own part, we hope that an absolute certainty of truth will precede uniformity of statement in this as in every other branch of investigation.

The prospects of analytical harmony, however, are not particularly promising, if we may judge from the first attempt made by the young society. The council, with the aid of the leading chemists of the kingdom, and after legal advice and numerous consultations, had framed a definition of adulteration which they fondly hoped would set that vexed question finally at rest. The proposed definition, as submitted to the meeting at the Cannon Street Hotel on December 1 was worded thus:—

**A. In the case of food or drink:—**

1. If it contain any ingredient which may render such article injurious to the health of a consumer.
2. If it contain any substance that sensibly increases its weight, bulk, or strength, unless the presence of such substance be due to circumstances necessarily appertaining to its collection or manufacture, or be necessary for its preservation, or be acknowledged at the time of sale.
3. If any important constituent has been wholly or in part abstracted without acknowledgment being made at the time of sale.
4. If it be a colourable imitation of, or be sold under the name of, another article.

**B. In the case of drugs:—**

1. If when retailed for medicinal purposes under a name recognised by the British Pharmacopœia, it be not equal in strength and purity to the standard laid down in that work.
2. If when sold under a name not recognised in the British Pharmacopœia it differ materially from the professed standard.

It is not very clear why the analysts, as such, need trouble themselves at all about a definition of adulteration. It is evident that had their suggested explanation of the term secured unanimous approval, it would not have been long before an attempt would have been made to force it on the Local Government Board, to serve as the basis of any new legislation. Naturally, it is to be hoped that the Government will consult the analysts in cases where their experience could not fail to be serviceable; but a peculiar qualification for definition of terms is not among the accomplishments which would reasonably result from a chemical training, and in this instance we fail to see that any special inspiration has been vouchsafed. Indeed, it would be difficult to draw up any form of definition more open to quibble, or more certain to lead to legal difficulties. Clause 1 (A.) is simply nonsense. Numbers of substances in no wise adulterated contain ingredients "which render such articles injurious to the health of the consumer." An analogous remark applies to clause 4 (A.). As remarked by a contemporary, "the sale of chicory for coffee, for example, cannot, with reasonable regard for the utility of language, be regarded as a case of adulteration." It is obvious, too, that continual disputes would arise as to the conditions which would bring any suspected article under the definitions here laid down. Is it injurious to health? how little of a foreign substance "sensibly" increases the weight? how much "necessarily" pertains to its

collection or manufacture, or is required for its preservation? how definite is the acknowledgment at time of sale to be? how close an imitation is to be considered "colourable?" All these and others are questions which the analysts propose to cast into the law courts for the lawyers to scramble about, and for magistrates to stumble over. In reference to drugs, apparently, no allowance whatever is to be made for impurities or foreign substances necessarily appertaining to collection or manufacture, or necessary for preservation. An arbitrary standard is to be fixed, the British Pharmacopœia is to be a sacred book, and a name once adopted there is to be binding in its meaning as there laid down, though it may have been popularly employed to mean something else for centuries. A "professed standard" is to be set up, or, perhaps, is to exist in the analyst's consciousness, for all drugs not recognised in the British Pharmacopœia, which must not "differ materially" from that professed standard. Surely for vagueness, if, indeed, we might not say for looseness, this definition of adulteration may well challenge rivalry; and the members of the Association of British Analysts may employ their time and energy to better purpose than in taking upon themselves lexicographic labours.

#### FRENCH PHARMACEUTICAL WORTHIES.

IN opening his course of lectures on pharmacy at the Montpellier School recently, Professor Soubeiran gave a brief historical sketch of the chief ornaments of the profession which France has produced during the past three centuries.

When, in the thirteenth and succeeding centuries, the medical practitioners began to divide their labours and take their respective ranks in society, the apothecary was relegated to a very humble position, and treated with but scanty respect by his superiors in the art of healing. As a body the apothecaries were mere traders, and scarcely distinguishable from the grocers by the population generally. But they held a high estimate of their own importance, or we should rather say of the importance of their office, and though incorporated with the "épiciers," as they were contemporaneously in England with the "spicerers," they had very strict ordinances respecting apprenticeship and examination. An old French writer (Monteils) claims that King Mithridates and various other royal personages had been apothecaries, and he added proudly that though the king could make of whomsoever he would a count, a duke, or a marshal of France, he could make an apothecary of no man who had not passed through the necessary term of apprenticeship and study. Dr. Soubeiran tells us that at that period the titles of pharmacien and pharmacopole were in use, but only as derisive or burlesque expressions. This is at any rate an illustration of the insignificance of the wit which sometimes passes for humour and often wins the applause of the crowd.

Nicolas Houel (1520-85) was the undoubted founder of modern pharmacy in France. We sketched the story of his doings in a previous article in this journal.\* Moses Claras (1618-98) was the author of a *Royal Galenical and Chemical Pharmacopœia*, in which, for the first time, medicines were methodically classified. Nicolas Lemery (1645-1715), however, gave a far greater impetus to pharmacy. Born at Rouen, this "most glorious of the apothecaries," as Dr. Soubeiran styles him, went to Montpellier for his technical education. While there he gave evidence of his advanced intellect by commencing some "conferences" among his comrades, which were

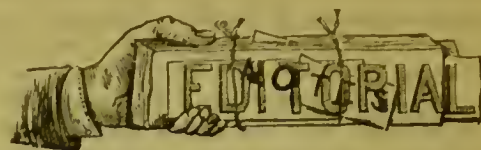
\* CHEMIST AND DRUGGIST, March, 1874, p. 79; art. "The Pharmaceutical School of Paris."

so successful that the authorities of the school charged him to conduct a course of chemical lectures in the face of the professors from whom he had come to learn. This might be supposed to have been due to the universal incompetency of the professors at that time, but Lemery proved afterwards by his wonderful popularity as a teacher at Paris that he was a real genius in the art. He threw aside the obscure and mystical pretensions which alchemy had rooted into the teaching of every science, and made himself comprehended by everyone who came to hear him. Besides his *Universal Pharmacopœia*, he published a *Course of Chemistry* and a *Dictionary of Drugs*, all of which works became highly popular. Nicolas William Rouelle (1703-70)—why were so many named Nicolas? it might lead some ill-mannered persons to trace the origin of the art to a personage quite other than King Mithridates—was the son of a Normandy peasant, and in later years established private courses in his shop in the Rue Jacob, in Paris. This man was a veritable prophet in the enthusiasm and earnestness with which he taught the sciences connected with his profession. His ardeur and originality of thought communicated itself to his pupils, and if he had accomplished nothing else he would have done enough for fame by implanting some of his spirit into the mind of Lavoisier, who, among others that afterwards rose to eminence, was proved to have been among the scholars of Rouelle.

Among the pioneers of the science, Dr. Soubeiran also justly includes the name of "an obscure French apothecary"—Brun, of Bergerac—who observed that lead and tin increased in weight by calcination, and a friend of his, Jean Rey, of Bugne, in studying the phenomenon, was led to the belief that this increase of weight might be due to the fixation of air on the metal. This was before the genius of Lavoisier made exactly similar observations serve as the point of departure for modern chemistry.

It would be a commonplace to show how experimental science, like every other department of human thought and action, awoke to a new life about the epoch of the French Revolution, and it would be outside of our purpose and beyond the limits of our space to trace the progress of French pharmacy since that period. But is it universally known how the glory and the very realm of France itself is indebted to the genius of a pharmacist? Vauquelin commenced life as a laboratory boy, and came to Paris with six francs as the sum of his worldly wealth; but his patient labours won him fame, and his fame won for him the distinguished honour of being selected by the revolutionary government, at the time when all Europe had coalesced to crush the new republic, of the notable order, "Pars, fais-nous de salpêtre, ou marche au supplice—Go and make us saltpetre or die." Vauquelin knew that his masters were in grim earnest, so he went into the provinces and made saltpetre. In our day we talk of prizes stimulating energy. The Directory, to use a vulgar phrase, knew a trick worth two of that. Did any of those fraternal rulers remember how their predecessors had told Lavoisier, when, sentenced to death, he had asked for a fortnight longer to live, "in order to finish some experiments," that they wanted his head, not his experiments!

In the early part of this century French pharmacists were the chief investigators in the field of pharmaceutical research. Derosne extracted narcotine and morphine from opium; Pelletier and Caventon discovered strychnine, brucine, quinine, and emetine. Robiquet, Labarraque, Boullay (to whom we are indebted for the process of percolation), and many others, were all trained as pharmacists; and a French professor, inheriting the honoured name of Soubeiran, may almost be excused if in tracing the development of pharmacy he leads his pupils to believe that their ancestors have almost alone borne the heat and burden of the day.



## MORNING TONICS.

THE extraordinary prosecution undertaken by the Inland Revenue department against a chemist of Hull for selling a bitter tincture under the title of "Morning Tonic" or "Pick-me-up Tonic" demands the attention of the trade. It is professedly an experimental prosecution, and the Hull Chemists Association deserves hearty thanks for its spirit and promptitude in deciding to defend the case brought against one of their fellow-tradesmen. At the time of writing the case stand adjourned, but it is to be resumed this day (15th). Of course the point for decision is whether this "morning tonic" must be regarded as a beverage or a medicine. According to the law, license is not required for the sale of spirits made up in medicine, and sold by medical practitioners, chemists, or druggists. Without presuming to prejudge the case we may venture to hope that it will be deemed essential to conviction that the prosecutors should offer some evidence to show that the transaction was other than a *bonâ-fide* sale of "medicine" by the chemist. A druggist selling strong spirit only thinly disguised for the purpose of evading the Act would be guilty of illicit sale. But in the present instance it seems that a really medicinal tincture was supplied, and it certainly strikes us that the Excise authorities should be burdened with the onus of showing that the liquid was intended to be nothing more than a mere dram. The penalty, if the prosecution succeeds, is, for the first offence, fifty pounds. How little the Inland Revenue Board had prepared itself for this attack on chemists is evidenced by the admission made by their analytical chemist in cross-examination, that "he did not know of any tinctures being prepared with rectified spirit." More extraordinary, however, is the same gentleman's astonishing opinion as to what the consistence of a *medical* pick-me-up should be. He is reported to have said that in a "medical pick-me-up" there was a proportion of 40 per cent. of solid matter! Such a substance would be rather like a piece of pudding than in the form of a draft.

## NEW COMPANIES.

WE have before us prospectuses of two new limited liability companies, particulars respecting which may be of interest to some of our readers.

One is "The Malveru Mineral and Aerated Waters Company (Limited)," which is to be floated with a capital of 30,000*l.*, in 3,000 shares of 10*l.* each. The proprietor of the business thus put forward is Mr. Hiram Codd, who is also the inventor of the well-known Codd's bottle. According to the terms of the agreement, Mr. Codd is to have 500 fully paid up shares in the company, as his price for the lease and goodwill of the business 2,400*l.* in cash for the plant, horses, &c., and to be paid according to valuation for his stock of sugar, essences, &c. The company is to have the right of using Codd's bottles without paying a license, and will also have the exclusive right of these bottles for a few years within the London postal district. They also have the option of purchasing from Mr. Codd, for the sum of 2,000*l.*, the sole right to sell, deal in, and grant licenses for the use of the bottles within the London postal district. The prospectus makes no definite statements respecting the returns or profits of the business offered.

The other company is "The Sanitary Works Association



(Limited),” capital 150,000*l.*, in 15,000 shares of 10*l.* each. Among the directors of this company appears the name of Professor Attfield. The objects contemplated appear to be two-fold. First, to secure a staff of eminent architects, sanitary and consulting engineers, chemists, &c., for the purpose (if we may thus express ourselves without being disrespectful) of letting out the services of these gentlemen, where private or public sanitary works are required. Secondly, and we suppose this is the main object of the association, directly to undertake any such works. Drainage, sewerage, disinfection, water supply, baths, mortuaries, and (ominously) “provision for disposal of the dead,” are among the works which the company proposes to undertake. There is something novel about the idea, and it cannot be denied that there is a good prospect of business for such an association.

### LASCAR SAL.

AMONG the newspaper paragraphs of the month, one has appeared intimating the death of an old acquaintance of ours entitled Lascar Sal. This lady had greatness thrust upon her by the fact that her apartment was selected by Dickens for the opium-smoking scenes described in *Edwin Drood*. We claim to have been the first to identify her room as the veritable original of Dickens's story, though several enterprising journalists have sent their “specials” to Bluegate Fields since our description. The poor creature seems to have died in the midst of the utmost squalor. In her room were found several hundreds of white mice, and when scarlet fever attacked her, it is no wonder that in that miserable den she succumbed at once. Lascar Sal was more frequently, we fear, the subject of alcoholic than of opium intoxication. But when fairly sober she appeared to be a quiet, well-behaved, respectable woman, who had seen better days. Her own theory, indeed, was that she was born and brought up in one of the West End squares of London, had run away from home to marry a dashing young Indian nabob, who had taught her the art of opium-smoking, and then had deserted her. The opium-smoking apparatus which she offered her customers was of the meanest character, and notwithstanding the little impetus given to her establishment by Mr. Dickeus, it is more than probable that “Sal” was never able to compete with the more genuine saloon on the opposite side of the court, and that hopeless poverty and misery were her only companions in death.

### THE PRESERVATION OF INFUSIONS.

PERIODICALLY a waste of pharmaceutical ability occurs in the endeavour to discover a method of preserving infusions. Two Papers were read at the last evening meeting of the Pharmaceutical Society, in both of which chloroform was recommended as a preservative agent. One of the Papers was a record of hospital practice, and the infusions therein referred to were not similar to those which chemists are called on to make. It can hardly be questioned that Mr. Barrett's method of concentrating his infusions has far more to do with their preservation than has the chloroform which he adds to them; otherwise, how is it that in this case  $\frac{1}{6}$ th of a minim per ounce is found sufficient, while in the case of corresponding infusions experimented on by Mr. Barnes  $\frac{2}{3}$ ths of a minim per ounce were found necessary? The latter proportion, it seems, is requisite to keep an infusion made according to the Pharmacopœia apparently unchanged for a fortnight;  $\frac{2}{3}$ ths of a minim, at any rate, were found insufficient. Supposing that the infusion prepared with the larger proportion of chloroform should keep for a month, it is probable that in a fortnight their virtues would have deteriorated to a certain extent, though no visible fungoid growth might be traced.

Obviously, as was pointed out, the addition of one or two drops of chloroform to each dose of the infusion would considerably alter its medicinal character, and this is conclusive against chloroform. But we fail to see the direct use of these experiments at all. An infusion preserved by chloroform or any other agent has ceased to be a fresh infusion. If the preservation of infusions is admissible at all, there can be no more perfect or more convenient substitute than properly-made concentrated infusions. If the use of these be illegitimate, the alternative, and it is not a very dreadful one, remains—to give what is ordered, namely, the fresh infusion.

### LOST DRUGGISTS.

THE list of missing chemists and druggists, which we publish in this number, is a little curious. Only two years ago the register was rectified, and every care has been taken since to keep it accurate. It is the direct interest of every British chemist to advise the registrar of any change in his address, and the local registrars are paid a small fee when they send announcements of deaths. And yet here are some three hundred lost, dead, stolen, or strayed away, or at any rate undiscoverable by the postmen. Three hundred out of twelve thousand is  $2\frac{1}{2}$  per cent.; that is to say, according to the law of averages, it is to be expected that one out of every forty chemists will be lost to humanity every two years. We strongly advise any one who may find his name figuring in this list to write to the Registrar at once, and we think he ought to apologise also for the trouble he has given, seeing that two registered letters have been addressed to him in vain.

### MEDICAL PRACTICE IN 1700.

WE extract from the *History of Advertising*, lately published by Messrs. Chatto & Windus, the following curious advertisement of a regular London physician, found in the *Flying Post* of January 6, 1700. It presents an idea of the medical practice of that date perhaps but little understood.

At the Angel and Crown in Basing-lane near Bow-lane liveth J. Pechey, a Graduate in the University of Oxford, and of many years standing in the College of Physicians in London: where all sick people that come to him, may have for Six pence a faithful account of their diseases, and plain directions for diet and other things they can prepare themselves. And such as have occasion for Medicines may have them of him at any reasonable rates, without paying anything for advice. And he will visit any sick person in London or the Liberties thereof in the day time for two shillings and Six pence, and anywhere else within the Bills of Mortality for Five shillings. And if he be called in by any person as he passes by in any of these places, he will require but one shilling for his advice.

PROFESSOR ATTFIELD has been elected Honorary Member of the Pharmaceutical Society of Victoria, “in consideration of great and unwearied efforts in the cause of pharmacy.”

IT HAS become quite common for French wine merchants and confectioners to use fuchsine to heighten the colour of their wares. The poisonous properties of this substance have been repeatedly demonstrated, so that, in addition to its being a more adulteration, its consumption in other substances is directly detrimental to health. The presence of the substance can be readily recognised in the following manner:—Place about  $1\frac{1}{2}$  oz. of the suspected compound in a phial, and treat first with 150 grains of subacetate of lead, and then with 300 grains of amylic alcohol. If, after agitating the mixture, the alcohol which separates appears colourless, no fuchsine is present; if the alcohol is coloured red, the reverse is the case.



### VETERINARY MEDICINE.\*

Two years' ago Mr. Williams, the well-known Principal of the New Veterinary College of Edinburgh, published a treatise on Veterinary Surgery, which has been recognised by all competent authorities as a most able *résumé* of the veterinary art as far as it could be included under that title. Mr. Williams has now completed his work by the issue of a companion volume on Veterinary Medicine, in which the pathology and special diseases of animals are treated in the same scientific and exhaustive style as was characteristic of the former volume. Taken together the two books present as fully as such a work can do the application of medical science to the diseases of animals. With regard more especially to the new volume, we cannot express too highly our opinion of the manner in which the author has discussed the characteristics of the various ills to which the lower orders of creation are heirs. The theories and practice of home and foreign authorities are carefully digested, and the suggestions of the writer are evidently the result of a combination of the study of principles and their practical application. But what is very striking in this work is the frequent, and we think we might say the general, vagueness of the sections on treatment. Professor Williams seems to object as a rule to give medicinal formulæ, and contents himself with indicating the class of remedies which should be employed. We cannot but think that this reticence detracts considerably from the usefulness of his work. A veterinarian of his experience need by no means hesitate to commit himself to definite instructions; and that he has followed no particular plan in this absence of apparent empiric advice is evidenced by the numerous occasions when his remarks on treatment are distinguished for their distinctness. The treatment of spasmodic colic, for example (page 556), is described with a clearness which leaves nothing to be desired, while the short paragraphs which comprise the instructions for treating diarrhoea (page 574) are so indefinite as to be of but little service to anyone who might not happen to be already practically acquainted with the subject. As a thorough and scientific exposition of the veterinary art, however, and as a repertory of the principles which should rule its practice, Professor Williams' work must rank in the highest class.

### PHARMACOGRAPHIA.†

A HISTORY of drugs produced by the combined authority of Daniel Hanbury and Professor Fliückiger is hardly open to criticism in the ordinary sense of the word. A careful examination of the pages of their work does but confirm the high anticipations which every pharmacist must have formed from his acquaintance with the high reputation of the writers; and it is but simple justice to add that the more minutely we search it for imperfections the more are we compelled to admire the patient research and mass of interesting "pharmacographia" which the volume presents.

The authors "write about drugs" in a manner not only learned, but also fresh and attractive. The distinguishing feature of their work is the "history" of each drug treated. We have often thought how much curious lore could be welded together on this subject by some one who had the patience, the opportunity, and the ability to find and present it. This task has now been accomplished *con amore*. The authors have gone up and down and to and fro in the fields of classic, scientific, and general literature for the facts which are here compiled. Consequently they give us on every subject a pleasant narrative replete with curious information, and well worth the study of those who deal in the articles thus reviewed.

\* *The Principles and Practice of Veterinary Medicine*. By William Williams, M.R.C.V.S. Edinburgh: MacLachlan & Stewart.

† *Pharmacographia*: A history of the principal drugs of vegetable origin met with in Great Britain and British India. By F. A. Fliückiger, Ph.D., and Daniel Hanbury, F.R.S. London: Macmillan.

Besides the history of each drug, we have in this book a description of it, the botanic origin, the chemical composition, the microscopic structure, and generally some remarks on the production, the use of, and the commerce in the substance under consideration. The latter division is certainly a novelty in a book partaking of a scientific character. In the case before us the commercial facts given are confessedly imperfect. The merely chance means which occur of obtaining this class of information necessarily renders the compilation exceedingly unequal. Many valuable facts are given, but we notice a good number of instances where we venture to think the information might have been advantageously extended. Under "Olive Oil," for example, it would have been useful to have shown the comparative values of the variously distinguished products in the market. It would also add considerably to the value of this department of the essays if the general causes which occasion the fluctuations of price were more definitely indicated.

The information given under the title of "Uses" is usually laconic, and in some cases might give rise to discussion on therapeutic or commercial grounds. Quince seeds, for instance may be sometimes employed in skin applications and eye lotions, but the general use made of them by druggists' customers is to make a sort of bandoline for the hair. We are little surprised, too, to be told that gum benzoin "appears to be nearly devoid of medicinal properties, and is but little employed;" also that "it is chiefly imported for use as incense in the service of the Greek Church." Surely the Roman and High Anglican devotionalists are much larger buyers of benjamin, at least in this country, than are the comparatively rare congregations of Eastern worshippers. To many of the articles is appended a section on adulterations or substitution, which is always of especial value where it occurs. Altogether the book is a wonderful storehouse of facts alike curious and profitable to every chemist and druggist. The style in which it is written is condensed without being stiff, pithy without being dry. We are quite safe in the assertion that it must take a permanent position among the standard works on pharmacy.

### SCIENTIFIC LONDON.\*

THE attractive title adopted by the author of this work leads us to anticipate something a little more complete than the book now before us. The idea of presenting in a series of sketches an outline of the scientific work which is going on in the English metropolis is an excellent one, and it is only fair to say that Mr. Becker has contributed a very fair instalment of such a work. Fluently and agreeably he narrates for us the history and characteristics of about a dozen of the London scientific societies. He has taken pains to gather together the chief points in the progress of each society described, and in sketches, not without humour, and generally with truth, the features of the periodical meetings, which he has evidently attended personally. Thus he acquaints us with the Royal, the Chemical, the Statistical, and the Geographical Societies; the Royal, the London, the Civil Engineers, and the Birkbeck Institutes; the Society of Arts, the Museum of Practical Geology, the Department of Science and Art, the Gresham Lectures, the Society of Telegraph Engineers, and the British Association. This list includes hardly half of the well-known scientific societies of London, such prominent bodies as the Linnean, the Quekett, the Geological, the Zoological, the Botanic, and all the medical societies being unnoticed. We think that a somewhat more representative collection might have been brought together or that at least the author might have modified his implicit profession of showing us the scientific side of London life.

It is easy to select anecdotes or comments from this book for quotation as specimens. With difficulty we confine ourselves to two. The first is a story of Count Rumford, the founder of the Royal Institution, and Humphry Davy, destined to become one of its brightest ornaments:—

So far as can be ascertained, the American-Bavarian Count was offered sively dictatorial in his manner, and exasperated those whom he did not succeed in crushing. Having shaken off Dr. Garnett, the first professor

\* *Scientific London*. By Bernard H. Becker. London: Henry S. King & Co.

chemistry at the Royal Institution, he engaged Davy as an assistant lecturer in chemistry, director of the laboratory, and assistant editor of the journals of the Institution. The future President of the Royal Society was granted a room in the house, coals, candles, and a salary of 100 guineas per annum.

The first interview of Davy with Count Rumford was not very agreeable to the young chemist, then in his twenty-third year. The intensely juvenile air of the candidate, his almost provincial manners, and a slight Cornwall accent, sufficed to reduce the glacial Count to a lower temperature than usual. With considerable difficulty Davy obtained permission to give a few lectures on the properties of gases. This, however, was sufficient. At the first lecture the variety and ingenuous combination of his ideas, and the fire, vivacity, clearness, and novelty with which they were expounded, enchanted the few who came to listen to the young lecturer, in whom they found united the power of poetry, oratory, and philosophy. The second lecture was crowded, and his course was obliged to be removed to the large amphitheatre, whither his fervid genius, and in some degree his youth and good looks, drew immense audiences. The ladies were charmed by the handsome young lecturer, and never tired of praising the beauty of his eyes, which they declared were "made for something besides poring over erueibles."

The next extract conveys a criticism which cannot be said to be undeserved. The Chemical Society is under observation, and the reader is shown into the lecture-room :

Behind a long table, more or less encumbered with chemical specimens and apparatus, sit the president and the two secretaries—the two latter gentlemen being charged with the onerous duty of reading papers in the absence of their authors. The presence of a number of ballot-boxes reveals the fact that several gentlemen recommended on the basis of "personal" or "general" knowledge are up for election; and the reception of many recently-elected Fellows, according to the form prescribed, indicates that the Chemical Society is adding largely to its list of members. This is a cheering sign, but my spirits are slightly dashed when I observe the extreme youth of many among the audience. As the names of the visitors—of whom each Fellow may introduce two—are read aloud, I find that their number does not account for the remarkable preponderance of young gentlemen. On inquiry I find that these must, therefore, be actual Fellows. I naturally experience some little surprise at this discovery, as I was once inclined—in the innocence of my heart—to attribute a certain distinction to the mystic letters F.C.S. Now, no human being is more inclined to encourage youth, and more disposed to regret its loss, than myself. It has long been an article of my creed that when a man is able to do good work he is old enough to be entrusted with it, and I never lose an opportunity of insisting that in life the "time" is not, as musicians say, "taken quickly enough," but I find it difficult to resist the conviction that many of the juvenile Fellows of the Chemical Society cannot possibly have attained any higher rank than that of students or of assistants to lecturers. I may be mistaken. The young gentlemen referred to may have attained eminence in the chemical world, or the letters F.C.S. may not be intended to convey any grave significance, but I confess that I am puzzled.

In this matter we offer Mr. Becker the assurance of our sympathy.

#### A SENSATION FOR SCIENCE.\*

Two writers who profess themselves "unknown to the world of science" have just published a little work with the expressed object of "radiating sensationalism from science," and placing before the world a theory which, in their belief, is sufficient to explain all the wonderful mysteries connected with the phenomena of creation. This is homœopathic treatment with a vengeance; but it is none the worse for that. Thoughtful men who study the revelations of experimental science are forced to the belief that there is a thread running through and connecting all the displays of creative force, which, when seized, will enable us to trace the method by which all natural phenomena may be accounted for.

What we call "natural laws" are modern discoveries. The ancients could scarcely conceive of a government of the universe which was not capricious in its action. The theology of the Semitic races is founded on that idea, and it is mainly owing to an erroneous and very narrow estimate of the tendency of scientific investigation, that we find the present antagonism between theologic and scientific thought, even among ourselves. The narrowness is not confined to one

party. Those who fear and those who hope that "laws of nature" will one day suffice to dissipate all the mysteries of creation, and resolve the regulation of universal phenomena into a gross materialism, are assuredly equally incapable of grasping the essential character of those laws. To most intelligent men, however, the modern dawn of clear insight into the laboratory of nature is a hopeful sign; and the mere agitation of speculation on the wildest problems, even by our most experimental philosophers, is a proof that even these are not considered quite hopeless of ultimate solution.

These "unknown" authors assert that they have discovered the thread which systematises all science. They audaciously proclaim their ability to explain a whole series of mysteries, among the list of which figure the cause of life, the source of mind, the cause of chemical action, the cause of sunlight, the cause of winds and storms, of volcanoes, earthquakes, meteors, tides, diseases, and much else. And without professing adherence to their theory, we shall say at once that their ideas are both attractive and suggestive. We cannot profess in a short article like this to give even a fair notion of their arguments; but we will try to explain the basis of their ideas. The "law" is thus stated in their own words:—

"Matter is composed of two classes of atoms, mineral and vegetable (hydrogen and oxygen being given as the respective types of these classes). Every atom is a magnet, having polarity. Like atoms attract. Like poles repel, and unlike poles attract."

Of course they do not pretend to offer any proof of this very literal acceptance of the atomic theory. They assume it as a naked fact. Indeed, we have to point out that throughout their exposition they never hesitate to postulate a condition, and treat it as a fact. It is not for us to say whether their explanations justify their assumptions; but we confess we are not aware that the latter are in any case impossible.

Let it be supposed, then, that all matter is resolvable into two generic classes of atoms, mineral and vegetable. Endow these atoms with a certain force, here called magnetism, the action of which is indicated above. Each class, however, must be supposed to have a magnetism of an opposite character, let us say, the mineral, male, the vegetable, female. Now, think of the formation of water by the combination of opposing atoms, and you have the basis of this theory. So far, good. Lucretius guessed at a somewhat similar theory, with no evidence to help him. But our theorists follow up the idea to the ends of visible creation. Let us jump to one of these big assumptions. They offer to explain the origin of vegetable life. They say that the earth is composed of mineral and vegetable atoms, which, under certain conditions, may combine to form a seed. They ask if seeds are not formed in plants from the soil in which the latter are placed; and if so, what should prevent seeds or plants forming in the soil itself under favourable circumstances and suitable conditions? Why, with that belief, they should attack Darwin's theory, is what we fail to understand. Animal life they trace in a similar manner. Mind they trace to instinct, instinct to appetite, and appetite is, according to them, the affinity of atoms. A calf, for example, does not in its early days proceed to chew bricks or stones, but after partaking of its mother's milk, feeds itself on grass and water; in other words, carefully chooses similar atoms to those of which its body is composed.

We shall not follow our authors into their many ingenious and novel explanations of natural phenomena. But we must remark that their desperate anxiety to upset every existing theory leads them into some extravagances which, so far as we can see, are quite unnecessary for the support of their own basis. For instance, they ridicule the notion that light takes time to travel. To all appearance they have never heard of the wonderful proofs by which that marvellous discovery was proved. Rømer was the first to recognise the fact. He was studying the movements of one of Jupiter's moons. Six months later he found that moon 15 minutes behind time at a certain point of its orbit. The cause flashed on him. He remembered that he was nearly two hundred millions of miles away from the spot where his previous observations had been made, and while journeying back to that position he found the moon gradually becoming more punctual. This observation has been corroborated by many other proofs, and there is nothing more clearly proved in astronomic science than that light is not instantaneous. We fail to see that Messrs. Fraser and Dewar's theory depends on their notion on this point; if it does, however, we can only add, so much the worse for the theory. Their

\* *The Origin of Creation; or the Science of Matter and Force.* A new system of natural philosophy. By Thomas Roderick Fraser and Andrew Dewar. London: Longmans.

treatise contains other incidental assertions which are open to similar criticism; and lest we should be misunderstood we wish to add that from beginning to end it can claim to be nothing more than a tissue of guesswork. All we assert is that the guesses are often shrewd, and we venture to think not unworthy of thought. Let us conclude by submitting one of these to our readers as a specimen. They endeavour to give us what they believe to be a more rational theory of volcanoes (and earthquakes) than the prevalent one. They disbelieve that the interior of the earth is a raging furnace, and that volcanoes are the exits for the flames thereof. Here is their explanation—a very reasonable one as it strikes us.

Volcanoes [they say] are mountains, from the tops of which issue, when in activity, smoke, flame, ashes, and lava. It has been argued in consequence that if fire issues from the crater there must be fire inside. This, however, need not of necessity follow. The whole phenomena connected with both volcanoes and earthquakes are caused by chemical action. The intense flame witnessed at the mouth of a volcano is caused by the ignition of the vast volumes of gases which are issuing from it. The flame does not extend inside the mountain, for it is subject to the same conditions as our coal gas is. When we light the gas in our rooms we have flame, but it does not extend inside the pipe or burner; in fact, there is a space outside, between the burner and the flame, that will not ignite. This is owing to the fact that until a sufficient quantity of oxygen is combined with the hydrogen there can be no combustion or flame. If we could introduce coal gas into a vessel containing other mineral gases we could not light it. In a similar manner there can be no flame in the interior of the mountain, for there is not sufficient oxygen inside to induce a combustion.

Under the surface of the mountain, in the interior of the earth, there are immense stores of mineral materials, such as sulphur, nitre, salt, iron, &c., saturated with water, which chemically act upon each other. By this action, they are continually dissolving, reforming and generating gases, which accumulate in such quantities that they cannot be confined; they then burst with terrific force, combine with the oxygen of the atmosphere, and igniting, burn until the explosive and combustible gases are exhausted. The dissolving and reforming action with water may then continue, and fresh outbursts may occur until the whole material is changed, then the volcano becomes extinct. Thus we find numberless extinct volcanoes all over the globe, a result which would never ensue, were they—as we are told—funnels or chimneys for the molten fires within.

#### EXPERIMENTAL CHEMISTRY.

THE early study of experimental chemistry has often moulded a man's career through life, and the facilities placed in the way of such studies have never been greater than they are now. We have before us two works which well illustrate the earnest attempts made to encourage scientific training by giving a groundwork of practical chemistry, than which no more delightful or engrossing addition can be made to the curriculum of the boy or youth. The first and more pretentious book is the edition of Stockhardt's "Experimental Chemistry"\* recently published, having been to a great extent re-written by Mr. C. W. Heaton. This, indeed, almost reaches the dignity of a manual of chemistry, but its title sufficiently indicates its real nature and scope. The student is led from one experiment to another, whereby he may learn the properties and nature of most inorganic elements and compounds, and of many organic bodies. Interspersed, or rather accompanying nearly every experiment, are paragraphs disclosing the theory of the science whereby the phenomena which the experiments are intended to illustrate are being rapidly woven into one vast harmonious whole, thanks to the labours of our science workers. The manufacturing and commercial aspect of each branch of the science is not, however, neglected, and he who works steadily through the book will have acquired a fund of theoretical and practical experience.

On a smaller scale, a little work entitled "Five Hundred Chemical Experiments,"† which is designed to meet a necessity of the time by placing within the reach of those who do not wish to dive deeply into theoretic mysteries a series of experiments which shall at the same time afford amusement,

\* *Experimental Chemistry*. By Dr. J. A. Stockhardt and C. W. Heaton. A Handbook for the Study of the Science by Simple Experiments. Pp. xxiv. 421. London: Bell & Daldy.

† *Five Hundred Chemical Experiments for One Shilling*. Arranged for beginners by F. Montier. London: Published by Townson and Mercer.

give experience in manipulation, and impart sound experimental knowledge. This book is at once attractive and full of instruction of the kind indicated, and the boy to whom it may be handed will be delighted to begin with some brilliant experiments in combustion on the first page. We quite agree with the belief expressed in the preface, viz., that the young chemist who honestly and carefully makes himself master of each experiment will not only have derived amusement, but will also find himself possessed of a very considerable acquaintance with inorganic chemistry, and a great familiarity with manipulation. Indeed, many lecturers and teachers of chemistry will find it an easy matter to fill in between the lines, and convert almost every page into an interesting and admirably illustrated lecture.

Such books as these should be found in every chemist's shop, not only because a ready sale should be obtainable for them, and consequently for the experimental apparatus for which they will create a demand, but because every chemist and druggist ought to feel a pride in extending as far as possible the desire for scientific knowledge and rational recreation.

#### DR. RUDDOCK'S HOMŒOPATHIC TEXT-BOOK.\*

DR. RUDDOCK is one of the most voluminous of medical writers, at any rate among the homœopathic section. The text-book he has just published is to be regarded, we presume, as his *chef d'œuvre*. It is a massive volume, containing over a thousand pages, and detailing the characters and treatment of myriads of diseases. He would be an awkward individual indeed whose complaint is not provided for in this work. Dr. Ruddock, of course, has complete confidence in homœopathic treatment, and both his own experience and that of others are used to make this department of his book thorough. On that point we avoid criticism at this moment, but we must do the author the justice of saying that all his articles are characterised by extreme lucidity, and his hints and instructions—without committing ourselves to an endorsement of the paragraphs on medical treatment—are marked by thoughtfulness and common sense.

#### THE HISTORY OF ADVERTISING.†

No one will deny that advertising is one of the most prominent features of our age. Indeed, it would be difficult to name any characteristic which so perfectly distinguishes the present from any previous epoch in the world's history as the systematic public advertising now so universally adopted by all classes of money-makers. There is a great field for study in a consideration of the means whereby advertising may certainly be made successful. That it is reducible to a certainty is one of the clearest facts in our world's economy. Men who have acquired the requisite tact can launch speculation after speculation, and calculate when their investments will begin to bring forth fruit with even more confidence than a merchant can anticipate the return of his ship from a distant port; and, notwithstanding the utter recklessness often displayed by "plungers" in this mania, it would almost seem as if lack of capital or lack of courage were the only hindrances in the road to wealth, and that these were far more serious dangers than lack of judgment.

Advertising has been the making of our modern press; it is the fuel which has supplied the motive power to the "great moral engine." It is advertisers who keep up foreign correspondents, lay Atlantic telegraphs, explore Africa, and lay under contribution the best intellects of the day. This is the indirect consequence of advertising. Directly, it has completely revolutionised the character of commerce and vastly extended its ramifications, and it is hardly too much to say that the competition between nations for mercantile supremacy will be awarded to that one which advertises with most ability and most courage.

\* *Text-Book of Modern Medicine and Surgery on Homœopathic Principles*. By E. Harris Ruddock, M.D. London: Homœopathic Publishing Company.  
† *A History of Advertising from the Earliest Times*. By Henry Sampson. London: Chatto & Windus.

Surely the development of such a power is a story worth telling and worth knowing. Mr. Sampson has taken considerable pains to seek out its early history and to trace its progress, and he has brought his facts and specimens together and edited them in a manner which makes his narrative continually pleasing. There is little enough to be said of ancient classic advertising. Some inscriptions on the walls of Pompeii are the nearest approach to our modern system. The specimens given are curious and interesting, and this section of the book, as are many others, is illustrated by lithographic facsimiles. The earliest newspaper advertisement Mr. Sampson traces to a Dutch paper published in Amstordam on November 21, 1626, announcing a sale of articles taken from prizes—sugar, ivory, popper, tobacco and logwood. The first attempts at newspaper publishing in England occurred about the period of the Civil War, and gradually advertisements of a quaint enough character began to creep in. But the glory, if such it be, of developing these early signs of life is undoubtedly due to one John Houghton, F.R.S., an apothecary in Bartholomew Lane, in the city of London, who, in 1682, started a paper which he called *A Collection for the Improvement of Husbandry and Trade*. After a time Mr. Houghton began to take advertisements, and the advantage of encouraging this sort of literature seems to have soon commenced to dawn on him. With No. 52 he publishes an extra half-sheet, filled with "ads.," but heads it with a notice which is not creditable, we think, to his worldly wisdom. "This part," he says, "is to give away, and those who like it not may omit the reading." A few specimens of these early advertisements, which we quote from Mr. Sampson's book, will give an idea of the style then adopted:—

I want a pritty boy to wait on a gentleman, who will take care of him and put him out an apprentice.

If any gentleman wants a housekeeper, I believe I can help to the best in England.

I want a complete young man, that will wear livery, to wait on a very valuable gentleman, but he must know how to play on a violin or a flute.

I have been to Mr. Firmin's work house in Little Britain, and seen a great many pieces of what seems to me excellent linen, made by the poor in and about London. He will sell it at reasonable rates, and I believe whatever house keepers go there to buy will not repent, and on Wednesdays and Saturdays in the forenoon he is always there himself.

I have met with a curious gardener that will furnish any body that sends to me for fruit trees, and floreal shrubs, and garden seeds. I have made him promise with all solemnity that whatever he sends shall be purely good, and I verily believe he may be depended on.

It will be noticed that the editor appeared as the advertiser, and he probably often arranged to be "paid by results." Not till some years after was the bright notion struck of putting addresses to the advertisements.

Here we must leave the subject. Mr. Sampson continues it through a bulky volume filled with numberless curiosities and anecdotes. He shows us the gradual development of the idea through the eighteenth century, and he devotes various chapters to special features of the system, such as swindles and hoaxes, matrimonial advertisements, and the rest. After all he has written, however, the real romance remains: he has not attempted to describe the great *coups* which have secured wealth in these modern days; and there are magnificent materials for an exciting volume in the stories of success and failure connected with advertising schemes in the present generation.

A MEDICAL REGISTER OF THE UNITED STATES, chiefly compiled by the late Dr. Butler, of Philadelphia, has lately been published by the proprietors of the *Philadelphia Medical and Surgical Reporter*, and in this country by Messrs. Baillière, Tindal, & Cox. It contains over fifty thousand names of medical practitioners.

THE *American Journal of Pharmacy* has launched out into the portrait business, and presents with the number for November a very handsome steel engraving, representing the late Wm. Proctor, Jun., but representing him as he appeared ten or fifteen years ago, and not as he was known in later years, with the hirsute appendages which he cultivated during his European tour in 1867.

## Provincial Reports.

### GLASGOW.

THE third monthly meeting of the Chemists' and Druggists' Association was held on November 25, Mr. John Currie presiding. Mr. James M. Milne, Ph.D., gave a lecture on "Carbon and its Compounds with Oxygen," which he treated in an able manner, illustrating his subject with several beautiful experiments. He was awarded a hearty vote of thanks from the large number of members present.

It was intimated that at the next scientific meeting John Dougall, Esq., M.D., Vice-President of the Medical Society, would read a Paper on "Zymotic Poison."

A general meeting of the trade is also to be held on December 16, to consider, first, the propriety of negotiating with the chemists of Edinburgh and other large Scotch towns with the view of having a more extended list of retail prices for the whole of Scotland; and, secondly, the effect the present system of examinations and fees has on the supply of apprentices and assistants, and to consider a memorial proposed to be presented to the Council of the Pharmaceutical Society, praying them to alter and amend the regulations in relation to the same. The Glasgow Association is in a most prosperous condition this session. The membership is already treble that of last year, and the meetings both of the Association and the Assistants' Section are largely attended and most enthusiastic. An attractive syllabus has been issued, and 33 members are attending the tutorial class conducted by Mr. R. C. Lindsay, B.Sc., while 20 are attending Professor Dittmar's Practical Chemistry class.

### DUBLIN.

#### CHEMISTS' AND DRUGGISTS' ASSOCIATION OF IRELAND.

THE Chemical class in connection with the above Society is now in full operation under the able guidance of Professor Tichborne. A spacious room has been fitted up as laboratory and lecture-room, and contains all the necessary apparatus and conveniences. The classes meet two evenings a week, namely, Tuesdays and Fridays, at eight o'clock. Up to the present more than sixty students have joined, and it is expected that very shortly that number will be increased to about a hundred. "Attfield's Chemistry" is the class book. The classes in Botany and Materia Medica will not commence until February. Donations in the form of specimens, &c., will be very acceptable to this Society, and may be addressed to the Honorary Secretary, Wm. Hayes, Esq., 12 Grafton Street. The usual monthly meeting of the Society was held in the lecture-room on Tuesday evening, when about twenty new members joined. The business was of a merely routine character.

### HALIFAX.

THE Chemists' Association, at the meeting held on November 13, took into consideration the report of the committee which had been appointed to inquire into the Young Men's Association, which had been formed independently of this Association. It was the wish of the young men themselves that the elder body should wait for twelve months and see what results had been obtained in the meantime. The general feeling was that, having regard to the hostile spirit manifested by the young men, there remained no choice but to take this course, but several members animadverted in severe terms on the manner in which the young men had deluged the wholesale firms with applications for aid, in some cases making three or four demands and hinting at the consequences which might follow from non-compliance with their request.

HALIFAX CHEMISTS' ASSISTANTS' AND APPRENTICES'  
ASSOCIATION.

THE inaugural meeting of the members of the above Society was held in the rooms on Friday evening, October 30, when a sensible address on "Study," urging systematic effort, was read by the President, Mr. W. H. Illingworth.

At the meeting of the Council of the Assistants' Association, held on November 4, the President was empowered to meet the elder society for the purpose of removing the misconceptions which had arisen between the two bodies.

A meeting of Council was held December 1 to receive his report of the action he had taken, and a copy of a resolution passed at a meeting of the committee of the masters' association was presented. On the motion of Mr. W. H. Illingworth, seconded by Mr. A. F. Bottomly, the following resolution was passed, and a copy ordered to be sent to the hon. sec. of the Chemists' Association:—

"That this Council cordially agrees with the resolution passed at a late meeting of the Chemists' Association, in reference to this Association, and that it is their desire so to act as to merit the hearty sympathy and approval of their masters."

HULL.

EXCISE PROSECUTION.

ON November 24 a large and influential meeting of the trade was held at the Cross Keys Hotel, Mr. Baynes in the chair, to take into consideration the prosecution of a Hull chemist for the sale of a bitter tincture as a "morning tonic." A resolution was passed to the effect that the meeting having learned that an Excise prosecution had been instituted against a member of the trade for selling a medicinal tincture without a spirit license, under the name of "Pick-me-Up" or "Morning Tonic," the same being a modification of the compound tincture of gentian of the Pharmacopœia, which under various names has been openly and generally sold by the trade for more than fifty years as a tonic; and believing such prosecution, without previous notice, to be harsh and oppressive, authorised the committee of the Hull Chemists' Association to take such steps, in the general interests of the trade, as they might deem necessary in defending the case and obtaining a clear definition of the law on the subject.

HULL CHEMISTS' ASSOCIATION.

THE annual meeting of this Society was held at the Cross Keys Hotel on Thursday evening, November 12, the President, Mr. Anthony Smith, in the chair.

The report was read by the Secretary, Mr. C. B. Bell, and adopted. The financial position of the Society showed an increase on last year's balance. The election of officers for the ensuing year took place by ballot, with the following result:—President, Mr. Anthony Smith; Vice-President, Mr. George Myers; Hon. Sec. and Treasurer, Mr. C. B. Bell; Committee, Messrs. Grindall, Jubb, Oldham, and Earle.

The President, in thanking the members for the compliment they had paid him in electing him to the chair for the third consecutive year, stated that he re-entered upon the duties with some degree of hesitation, as he considered two years should be the maximum time allowed for the same president to occupy the chair; but, as it was their wish, he should continue in that position. He assured them he felt most warmly the proof of their confidence, and no exertion on his part would be wanting to ensure the success of the Society, and to increase the facilities for the instruction of the rising generation in the trade.

Mr. C. B. Bell thanked the members most heartily for the confidence they had always reposed in him, and for again electing him to the office which he had held since the formation of the Society six years ago, and he trusted the usefulness of the Society would continue to increase.

Thanks were recorded by the members present to the past officers of the Society for their services, which were duly acknowledged.

The annual dinner was fixed for the first week in December.

Scientific Notes.

APPLICATION FOR CHILBLAINS.

ACCORDING to the *Révue Médico-Photographique* the following is a very convenient, economical, and efficacious application for chilblains and chaps:—

	Parts.
Alcohol (85°)	100
Glycerine ..	25
Phenic Acid ..	1

REMEDY FOR COLDS.

ACCORDING to the same authority, powdered camphor, sprinkled with tincture of iodine, and inhaled by the nostrils, constitutes one of the most prompt and certain remedies for coryza, or "cold in the head."

TO CEMENT METAL ON GLASS.

THE following cement, recommended by Franke for fastening prize medals, &c., on the glass of show-cases in the Vienna Exhibition, in place of the defective and dangerous method of boring, may be found generally useful in fastening metal on glass securely and rapidly. To an intimate mixture of two parts of finely powdered silver litharge and one part dry white lead, add as much of a mixture of three parts boiled linseed oil and one of copal varnish as will form a doughy mass. It is only necessary to cover the face of the medal with this cement, press it upon the glass, and remove the excess of cement.

INCOMBUSTIBLE PAPER AND FIRE-PROOF INK.

LETTERS PATENT have been secured for an incombustible paper and fire-proof ink. The pulp is manufactured in the usual way, and is composed of vegetable fibre, one part; asbestos, two parts; borax, one-tenth part; and alum, two-tenths part. Not only can writing paper be thus manufactured, but a coarser substance for the bindings of books, or the enclosing of manuscripts. It is claimed that this paper is ordinarily incombustible under such circumstances as fires in houses, factories, or other buildings. The ink, which can be used either for writing or printing, is made according to the following recipe:—

Graphite (finely ground)	.. .. .	22 drachms
Copal .. .. .	.. .. .	12 grains
Sulphate of iron .. .. .	.. .. .	2 drachms
Tincture of galls .. .. .	.. .. .	2 "
Sulphate of indigo .. .. .	.. .. .	8 "

When a colour other than black, the graphite is replaced by a suitable mineral pigment.

LAUGBEIN'S PROCESS FOR POTASSIUM IODIDE.\*

THE author employs euprous iodide, containing 60 to 70 per cent. of iodine, which is now imported in considerable quantities from Peru. The iodide is reduced to fine powder and suspended in water acidulated with a few drops of hydrochloric acid. It is then decomposed by a stream of sulphuretted hydrogen, and the excess of gas is destroyed by a solution of iodine in iodide of potassium, after the liquid has been decanted from the insoluble copper sulphide. Potash is then added, and the whole evaporated till crystallisation takes place. During the evaporation the suspended sulphur gathers together in balls and sinks to the bottom. The iron sulphate formed in the preparation of the sulphuretted hydrogen covers the expense of the acid and iron sulphide used, while the copper sulphate obtained by roasting the copper sulphide covers the other expenses. One point to be looked at is to decant the liquid at once from the copper sulphide, as otherwise copper sulphate is formed by oxidation, and the final product rendered impure.

EXTRACT OF LITMUS.

ACCORDING to J. Martenson,† the colouring matter of litmus, when purified as much as possible, may be kept for an indefinite period unaltered in glycerin. Litmus is treated with hot water, and the solution, after concentration, is mixed with a

\* *Journ. Chem. Soc.*, from *Deut. Chem. Ges. Ber.*, vii. 765.  
† *Journ. Chem. Soc.*, from *Chem. Centr.*, 1874, 406.

sufficient quantity of alcohol (80 p. c.) to precipitate the colouring matter. After standing for 20 hours the alcohol is poured off, and carries with it a dirty blue foreign substance, which frequently occurs in litmus and is not altered by acids. The sediment is treated with hot water, which dissolves it, on account of the potassium carbonate which is present. To remove this carbonate sulphuric acid is added till the liquid assumes a faint wine-red tint; it is then heated to boiling for a few minutes, and again rendered blue by the addition of a few drops of lime water. After the lapse of 24 hours the liquid is filtered and evaporated to a syrup, and left all night in a cool place, when the potassium sulphate crystallises out in the form of a crust. It is then filtered through moist loose cotton, mixed with glycerin, and carefully preserved from damp.

#### IMPERMEABLE PAPER.

*Les Mondes* says that paper treated with an ammonio-copper solution and dried becomes impermeable to water and preserves its consistency even in boiling water.

#### TEST PAPERS.\*

By F. MOHR.

For the preparation of litmus paper the author recommends that the litmus be washed with hot alcohol and then extracted with cold water. This extract may be brushed on writing paper on one side. The paper must be washed with water to remove free alkali or acid.

Turmeric roots contain two yellow dyes, one soluble in water and unaffected by alkalis, the other soluble in alcohol. The roots should be washed in water as long as the washings are coloured, and then exhausted with alcohol.

Paper soaked in potassium sulphocyanate or ferrocyanide may be used for the detection of iron.

Paper containing starch moistened with a solution of potassium iodate in oxalic acid and dried is turned blue by reducing agents, such as sulphurous acid, hyposulphites, sulphuretted hydrogen, potassium sulphocyanate, ferrous oxide, cupric chloride, potassium iodide, and similar bodies.

For oxidising bodies, a starch paper with a potassium iodide may be used. To keep such paper unchanged, a lighted sulphur match should be held in the bottle in which the paper is preserved before closing it.

The author also recommends the following test papers:—For ammonia gas: paper soaked in mercurous oxide solution. For sulphuretted hydrogen and alkaline sulphides: acetate of lead paper; filtering paper soaked in cobalt chloride; polished visiting cards, known as "Polka papier," or paper painted with bismuth white. For metals which give black precipitates with sulphuretted hydrogen in acid solution, washed sulphide of zinc precipitated from the acetate is smeared on writing paper and dried. Any mineral acid decomposes the sulphide of zinc, setting free sulphuretted hydrogen, which immediately precipitates the metals present.

The same author further says, regarding the use of litmus, that the violet tint assumed by it in the titration of solutions which do not contain carbonates is due to the carbonic acid contained in the litmus itself. If this be expelled by acidifying with dilute sulphuric acid and then boiling for some time, the litmus, after treatment with baryta water, changes from blue to red without any intermediate violet. In titrations with litmus, if the final colour is to be blue, blue litmus should be added first; if red, the red solution must be used. In this way all errors arising from the litmus itself may be avoided.

#### TESTING OF QUININE HYDROCHLORIDE FOR MORPHINE.

C. FREDERIKING's † test is as follows:—Twenty grains of the quinine salt are shaken up with 60 grains of solution of ammonia, and 1½ drachms of ether are added. If the salt is pure, a clean layer is seen under the ether; if it contains cinchonine or morphine, a white ring appears between the layers of liquid. If the whole liquid is poured out through a tuft of wool, the insoluble alkaloid is retained, and if the wool is gently pressed and then treated with alcohol, the morphine or cinchonine dissolves, and after evaporation may be subjected to the usual tests. By this method two per cent. of morphine in quinine

may be detected. If there is no white ring between the layers, morphine is certainly absent. If morphine only is to be tested for, the method given by Hesse is preferable, since it requires less of the substance, and will detect 0.2 per cent. of morphine. One or two grains of the salt to be tested are placed in a tube, and about half a drachm of dilute sulphuric acid (sp. gr. 1.1) added. The tube is then immersed in water at a temperature of 50° to 60°. If the liquid remains colourless, the salt is pure; if it becomes of a yellow or orange-yellow colour, morphine is probably present, and may be tested for by the special re-agents.

#### CEMENT FOR PORCELAIN.\*

A QUANTITY of milk is coagulated by acetic acid. The casein is well washed with cold water and dissolved in a cold saturated solution of borax. A thick but perfectly clear solution is obtained, which possesses great adhesive power and is quite colourless. In these respects it excels gum arabic. To this adhesive mixture finely-powdered quicklime is added. The broken ware is well rubbed over with the cement, tightly bound up, and dried by a gentle heat.

#### ON THE BLEACHING OF IVORY AND BONE.

M. CLOEZ † finds that turpentine is an excellent bleacher of bones and ivory. He considers it especially useful in the preparation of anatomical specimens, for not only does it leave the bones of a dazzling whiteness, but quite removes all disagreeable odour, and this in three or four days by simple immersion of the bones in turpentine and exposure of the whole to sunlight. In diffuse daylight a little longer time is necessary. One precaution, however, is necessary: the object to be bleached should be kept a few millimètres above the bottom of the bath by means of zinc supports. Oil of turpentine is a powerful oxidising agent, and it acts by virtue of this property; an acid liquid is formed, which falls to the bottom of the vessel, out of contact with the specimen supported above it. Wood may be bleached in the same way, and other essential oils, such as citron and other isomers of turpentine, may be substituted for the latter.

#### EUCALYPTUS OIL AS A VERMIFUGE.

M. VIDAÜ, in a note presented to the *Société de Pharmacie*, relates how a Zouave attached to the officers' library at Djidjelly was cured of worms by oil of eucalyptus. Calomel, kousso, Corsicau moss, pomegranate root bark, wormwood, tincture of aloes, camphor, every vermifuge in the dispensary of the military hospital, was tried without effect. Finally, an enema containing 50 to 60 drops of eucalyptus oil was administered every evening for eight days. In less than that time the insupportable nocturnal itchings had ceased, and one or two additional doses completed the cure.

#### FAILURES.

CHARLES JAMES ARBLASTER, Chemist, &c., Birmingham.

The following statement was presented to a meeting of creditors of this debtor:—

<i>Liabilities.</i>		£ s. d.		£ s. d.	
To creditors unsecured .. .. .	.. .. .	.. .. .	.. .. .	3,228	11 6
Creditors fully secured .. .. .	.. .. .	272	11 7		
Less estimated value of securities .. .. .	.. .. .	272	11 7		
Creditors to be paid in full .. .. .	.. .. .	355	19 7		
				£3,228	11 6
<i>Assets.</i>		£ s. d.			
Stock-in-trade at Hagley Road and New Street, if sold by auction .. .. .	.. .. .	.. .. .	.. .. .	208	12 0
Book debts about 494l. 3s. 4d., estimated to produce .. .. .	.. .. .	.. .. .	.. .. .	346	4 5

\* *Journ. Chem. Soc.*, from *Zeitschr. f. Anal. Chem.*, xii. 368.

† *Journ. Chem. Soc.*, from *Chem. Centr.*, 1874, 408.

\* *Journ. Chem. Soc.*, from *Dingl. Polyt. Journ.*, ccxi. 488.

† *Journ. de Pharm. et de Chimie*, Novembre, 1874, p. 377.

Furniture, fixtures, and fittings as below:—		£	s.	d.
Plant at Pinfold Street and Hagley Road	128	15	6	
Fixtures, New Street, Birmingham	187	10	0	
Furniture, Greenhouses	177	18	6	
		424	3	6
Property in Syphons		100	0	0
		£1,078	19	11
Less creditors to be paid in full		355	19	7
		£723	0	4

From the statement made by the solicitor for the debtor, it appeared he commenced business at Shrewsbury with borrowed capital to the amount of 500*l.*, and after being 15 years in Shrewsbury he left with a capital of 800*l.*, and with the proceeds of the sale of the business at Shrewsbury he purchased the business, goodwill, and stock of Mr. Christian, of Birmingham, for 3,000*l.*, with the assistance of money from his wife's friends. Afterwards he purchased the soda-water trade of Niay & Co. for 250*l.* In September last he found himself insolvent, and had sustained a further loss of plant by fire in his factory recently. The old rent of his premises in New Street had been 170*l.* per annum to 1871, which had been increased by the landlord to 400*l.* per annum. In 1874 the debtor purchased the soda-water trade of Ludford Dock for 600*l.*, towards which he paid in cash 250*l.* He had spent in the reparation of dilapidations the sum of 200*l.*, and his expenditure had averaged 450*l.* Mr. Sivitor Smith said that the debtor regretted that he was compelled to meet his creditors in that manner, but his case was purely an unfortunate one, and was brought about principally through large expenses which Mr. Arblaster had to meet in purchasing and carrying on his business. The debtor was unable then to offer a composition, but he proposed that the creditors should resolve to liquidate the estate by arrangement, and not in bankruptcy, and that the trustee should defer the sale of the estate for a month, during which Mr. Arblaster hoped to be able, by the aid of his friends, to make an offer to them. Some discussion then ensued, and it was afterwards resolved that the estate should be wound up in liquidation, and not in bankruptcy. Mr. C. T. Starkey and Mr. Luke J. Sharp were appointed trustees, and the following gentlemen a committee of inspection:—Mr. Sumner and Mr. Barclay (Messrs. Southall, Son & Dymond).

The following figure among the creditors:—

	£	s.	d.
Atkins, F. & H., Fleet Street	8	5	6
Adams, R. & F. J., Birmingham	14	19	11
Atkinson & Co., Old Bond Street	16	17	10
Bird, Alfred, Birmingham	0	10	6
Butler, M'ulloch & Co., Covent Garden	0	12	4
Bullock & Reynolds, Hanover Square	1	2	0
Bryant & May, Whitechapel Road	1	12	0
Barber, George, George Street, Liverpool	3	0	0
Brand & Co., Hertford Street, Mayfair	1	5	6
Bagnall, John, Shrewsbury	102	18	4
Birmingham Joint Stock Bank	386	0	7
Daily Gazette, Birmingham	22	9	6
Morning News, Birmingham	12	6	0
Daily Mail, Birmingham	2	0	0
Daily Post, Birmingham	27	10	6
Barclay & Sons, Farringdon Street	64	14	9
Bentley & Co., High Holborn	11	14	0
Butler & Crispe, St. Paul's Churchyard	3	19	6
Bourne & Taylor, High Holborn	2	0	3
Beetham & Co., Cheltenham	7	10	0
Blumberg & Co., Cannon Street	1	19	6
Bingley, John, Northampton	9	8	6
Burgoyne and Burbidge, Coleman Street	2	9	11
Cadbury Brothers, Birmingham	1	1	8
Coate & Co., Lisle Street, Leicester Square	10	2	6
Corbier & Co., Cannon Street	3	13	0
Crown Perfumery Company, Strand	12	5	9
Darlow & Company, North Woolwich Road	30	4	0
Davy, M'Murdo & Co., Upper Thames Street	1	15	7
Evans & Lescher, Bartholomew Close	12	16	7
Epps & Co., 170 Piccadilly	4	11	0
Edwards, W., Old Change	20	9	7
Evans, Sons & Co., Liverpool	9	6	8
Fry & Son, Bristol	37	13	4
Ford & Shapland, London	6	16	11
Gilbertson, H., Old Bailey	23	19	6
Griffiths & Browett, Birmingham	2	4	7
Gallals & Co., Cavendish Square	7	0	0
Harris, Phillp, Birmingham	2	10	9
Holdsworth, J., Birmingham	15	0	7
Haywood, J. S., Nottingham	2	18	2
Hodgkinson, T., Aldersgate Street	107	7	0
Hearon & Spilre, Coleman Street	15	18	7
Herring & Co., Aldersgate Street	7	5	9
Haas, J., Fenchurch Street	8	0	0
Innes, Smith & Co., Birmingham	12	11	7 1/2
Jutson, A., Birmingham	16	15	7
Jones, W. & P., 98 Southwark Street	4	16	6
Kirby & Co., 14 Newman Street	0	9	6

	£	s.	d.
Kilmer, A., Upper Thames Street	5	12	9
Kent & Co., Great Marlborough Street	8	4	10
Langton & Scott, Upper Thames Street	30	12	4
Low, Son & Co., Strand	1	1	0
Moor, W. and J., Baly, Salford	0	12	0
Midland Counties Herald, Birmingham	13	17	0
Meggison & Co., Cannon Street	18	18	7
Moller, Peter, 521 Oxford Street	3	4	6
Mould & Tod, Edinburgh	3	13	6
Newbery & Son, Newgate Street	3	13	10
Osborne, Bancr & Co., Golden Square	5	1	3
Pricc's Candle Company, Vauxhall	1	13	3
Pears & Co., Isleworth	2	16	0
Phillipson & Co., Watling Street	3	15	2
Pepper, John, Tottenham Court Road	14	12	3
Parsons, F., St. Mary Axe	3	0	0
Poths & Sempie (Trustee of), London	10	6	5
Rackham & Co., Norwich	1	9	2
Raines & Co., Liverpool	25	0	10
Rhinnel, Eugene, Strand	9	1	1
Simner, John, Birmingham	58	8	9
Salt & Sons, Shrewsbury	5	12	6
Sutton & Co., Bow Churchyard	20	4	3
Silverlock, H., 92 Blackfriars Road	16	1	10
Schweppe & Co., Derby	21	11	6
Savory & Moore, New Bond Street	26	18	3
Southall & Co., Bull Street	60	0	0
Sanger, Messrs., Oxford Street	43	8	8
Smith, T. and H., Worship Street	8	9	8
Tajan, M. J. B., Paris	6	0	0
Trucitt, M., Burlington Arcade	10	19	3
Taylor, T., Droitwich	1	6	11
Tiunan & Son, Finsbury	5	18	0
White & Pike, Birmingham	13	4	4
Warwick Brothers, Old Swan Lane	1	6	6
Whittaker & Co., Fore Street	11	8	3
Wyley & Brown, Coventry	3	0	10
Wright & Co., Southwark Street	32	19	1
Yorkshire Glass Company, York	15	10	6

JOHN EATON, Lichfield, Chemist.

The statement in this case was as follows:—

Unsecured creditors, 1,858*l.* 2*s.* 5*d.*; creditors partly secured, 60*l.*; estimated value of securities, 50*l.*; deficiency, 10*l.*; total liabilities, 1,868*l.* 2*s.* 5*d.*; assets, stock in trade estimated to produce 302*l.* 16*s.* 6*d.*; book debts about 143*l.* 5*s.* 4*d.*, estimated to produce 100*l.*; furniture, fittings, &c., 63*l.* 0*s.* 6*d.*; total assets, 465*l.* 17*s.* A composition of 4*s.* in the pound was offered and refused. After some discussion it was decided to wind up the estate in liquidation and not in bankruptcy.

Among the creditors we find the following:—

	£	s.	d.
Arblaster, J., chemist, Birmingham	7	0	0
Bailey, T., chemist, Coventry	2	0	0
Bennett & Co., chemists, Lime Street	5	17	11
Bourne & Taylor, chemists, Holborn	3	16	0
Brett & Co., distillers, High Holborn	4	15	0
Bird, Alfred, chemist, Birmingham	1	10	6
Borwick & Sons, drysalters, London	11	0	0
Biggs, chemist, Great Dover Street	0	15	0
Browning & Co., drysalters, Smithfield	24	4	0
Burgoyne & Burbidge, druggists, Coleman Street	22	0	0
Crescens Robinson & Co., Borough Road	7	15	1
Crowden & Garrod, London	4	5	9
Cooper, W., Chemical Works, Berkhamstead	43	15	0
Cleaver & Co., soap manufacturers, London	4	9	0
Evans & Lescher, druggists, Bartholomew Close	10	12	4
Fullwood, R. & J., Annatto Works, Hoxton	2	14	6
Field, J. C. & J., candle manufacturers, Lambeth	3	1	8
Ford & Shapland, Lincoln's Inn	1	3	6
Horniman & Co., Messrs., Wormwood Street	4	8	7
Hall, Robert, veterinary surgeon	3	10	0
Keen, Robinson, Bellville & Co., Garlick Hill	3	18	4
Lloyd's Banking Company, Lichfield	123	0	0
Langton, Harker & Slagg, Lawrence Pountney Lane	56	0	0
MacDougall Brothers, Manchester	0	15	6
Mcgrison & Company, Cannon Street	6	11	9
Menier, Nash & Nash, 60 Strand	13	7	2
Palmer & Son, Old Ford Road	5	7	7
Pricc, Charles & Co., oil merchants, London	18	0	0
Raines & Co., Hanover Street	39	2	2
Schweppe & Co., soda-water manufacturers, Derby	7	18	0
Southall & Co., Bull Street, Birmingham	5	0	0
Sales, Pollard & Lloyd, London	6	12	0
Summers & Co., Mineral Works, Bristol	6	0	0
Steiner & Co., Limehouse	0	14	0
Sharp Brothers, Holborn	0	16	4
Smith, T. & H., Worship Street, City	4	2	10
Salter, G., Holborn	0	18	2
Sutton, W. & Co., Bow Churchyard	8	12	0
Thompson, H. A., Finsbury Square	0	14	3
Tidman & Sons, Wilson Street, Finsbury	6	14	6
Tomlinson, R., St. Paul's Square	2	4	0
Tomlinson, Matthew, Manchester	1	17	0
Vernon, J. W., cork manufacturer, Uttoxeter	0	6	0
Wilkinson, W., Pendleton	1	18	9
Wyleys & Company, Coventry	85	8	7
Whittaker & Grossmith, Fore Street	9	9	2



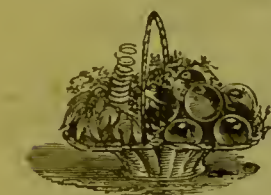


## RIMMEL'S NOVELTIES.

BESIDES the almanacs in the book and fan forms which we noticed last month, Mr. Rimmel has, as usual, a most dainty stock of nowly-designed perfumed cards, book-marks, sachets, and fancy nie-nacs of every variety suitable for the season.



Some of the new cards are very pretty, especially one which represents Venice by night, and gives both an exterior and interior view of a Venetian ball, both being illuminated by holding the card before a light. A new series of mediæval humorous cards are also



worthy of mention for the artistic skill displayed in the drawings. The disguises into which scent bottles are transformed are remarkable—wheatsheaves, corn-sacks, beehives, baskets of fish, and baskets of grapes (as illustrated) are among the cheap ones; but the variety of designs is too large even to catalogue, and we can only add that for crackers, fancy perfumery of all kinds to adorn the Christmas trees, and for the elegant little souvenirs which, à la mode Française, it is so pleasant, and which we think we may add is becoming so fashionable, to give and receive, Mr. Rimmel's is, *par excellence*, the establishment.

## THE MAGIC INKSTANDS.

THE extraordinary success which has attended the introduction of the Inexhaustible Magic Inkstands in this country testifies



that these are not merely interesting toys. There is no doubt that by simply following the directions clean water may in these inkstands be transmuted into ink of very good quality, and that the process may be repeated to such an extent that to persons not much afflicted with the *cacoethes scribendi* a single inkstand will last for a lifetime. Messrs. Sampson Low & Co., of Fleet Street, who are the agents for Great Britain, have lately issued an illustrated list showing the various styles of inkstands they supply, at prices varying from 9d. to 30s. We should also add that copying ink in the same "magic" form has lately been added to the collection.

## PATENTED JUJUBES.

A NOTEWORTHY improvement in the manufacture of jujubes has been accomplished by "Hawker's Patent Process," the exploitation of which has been taken up by Messrs. Allen & Hanburys. The effect of the modification introduced is to render soft jujubes permanently bright, and to reduce considerably the adhesiveness which has hitherto been the chief detraction of this form of *troches*. Of course, the hot weather only can test the value of the patent in the latter respect, but we can testify that the appearance and general make of the jujubes is of a very superior character.

## RICHARDSON'S COMPACT MEDICINE CHEST.

A LARGE pharmaceutical manufactory has been developed at Leicester by Messrs. John Richardson & Co., chiefly through the



success of the "pearl-coated pills" which have been for some years prepared by them. From their newest list, which now lies before us, we find that they keep in stock over 500 kinds of pills, comprehending at least an approach to almost every imaginable formula. They also prepare pills by their process from any formula sent to them by surgeons or druggists. Lately they have brought out an elegant and compact little medicine chest, containing a dozen bottles of pills (various), a bottle of chlorodyne, and a neat little hand-book of directions by Dr. Spencer Thomson. This case seems to comprehend all the probably necessary remedies, and is, therefore, well suited for colonists or families. We append a sketch of it open.

## LIEBIG'S LIQUID EXTRACT OF BEEF.

IN cases where a nutritious stimulant is needed, the preparation manufactured by Messrs. Digby, Gandy & Co., of Liverpool, under the title of Liebig's Liquid Extract of Beef, seems excellently adapted. The firm have greatly improved their product, and, we believe, it is rapidly gaining reputation as a restorative medicine. It presents extract of meat in a palatable and easily assimilated form and in combination with a sort of quinine wine. Professor Rodgers, of the London Hospital Medical School, certifies that he finds, by analysis, that it contains all the materials said to be used in its manufacture, and further, that it is the most agreeable tonic he has met with. We believe that, if not taken too freely, its ingredients must make it a valuable medicine for debilitated and convalescent patients.

## CADBURY'S CHRISTMAS GOODS.

A GREAT amount of artistic skill is displayed by the cocoa and chocolate manufacturers in producing their products in an attractive style. Messrs. Cadbury Brothers, of Birmingham, have a new set of tableaux every year on their boxes of chocolate creams, which make them really pretty little Christmas or New Year's presents. Little penny packets of chocolate, on the wrappers of which are designs for making shadows on the wall with the hands, will doubtless prove popular. We must here mention Messrs. Cadbury's Cocoa Essence, which is a pure and unmixed preparation of cocoa from which a large proportion of the fatty matter has been removed, thus rendering it both a wholesome and a delicious article of food. Their "Mexican" chocolate, which is sold at prices varying from 1s. 8d. to 4s. per lb., is a most carefully made confection.

## FRY'S COCOA AND CHOCOLATE.

MESSRS. Fry & Sons, of Bristol, have made their manufacture of Caracas cocoa and chocolate famous throughout the world. The popularity of this brand is certainly not entirely owing to the freedom with which it has been advertised, for the flavour is so excellent that it could not fail to command appreciation among connoisseurs. Messrs. Fry & Sons also prepare an "Extract of Cocoa," deprived of superfluous oil, well suited for invalids and persons who, liking the flavour of cocoa, find it difficult of digestion. We are also compelled to speak most highly of the beauty and cheapness of Messrs. Fry's boxes of Chocolate Creams, which are worthy caskets of delicious bonbons.



### THE LIVERPOOL CHEMISTS' ASSOCIATION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—If, as you say, "the affairs of the Liverpool Chemists' Association assume an aspect a little puzzling to those who are not engaged at the scene of action," I assure you it is a greater puzzle to myself, as the late Hon. Sec. of that Association, after the exceedingly well-penned article in your last October number. Why it is so I will try to shew, but, before proceeding, I assure you that I write this with no jealousy or animosity towards any member of the Association, for my aim has been as long as I have been a member to sink all personal matters, and to strive for the welfare of that science which I have so much at heart.

The first thing mentioned in your article having reference to myself is that I was one who wished to get up an open demonstration against the Adulteration Act. In the first place I never knew until I saw your article that there was ever an attempt made by any of the members of the Association to get up an "open demonstration." All that I ever heard of was that meetings were tried to be called for the purpose of discussing the bearing of the said Act, but to be one of the promoters in getting up the latter was never even thought of by myself, and therefore I could not be one of the opponents you speak of. I fear your informant must have had one of those nights of "restlessness of spirit" of which you so ably speak in your article, and have dreamed that such was the case.

The next personal subject is that I resigned the office of Hon. Sec. because I would not act under a Conservative chief. Such was not the case, and the Conservative chief, as you call him, will himself, I think, be willing to acknowledge this: if it had been so, do you think it likely that I would have consented to become Hon. Sec. *pro tem.* till another gentleman could be found to undertake the office, which was held by me till November 18, 1874.

And now, sir, in conclusion, I assure you it is not because there is a "New and Old party," or that "there is a Revolutionary party," or that, as you say, there is a "Conservative chief," but because every member of the Council has the prosperity of the Association and the progress of chemistry and pharmacy at heart, that we are now as a body in a better position than we have been for many years. Thanking you for your last paragraph in the October article,

I am, yours obediently,  
JAS. T. ARMSTRONG.

The Willows, Liverpool,  
December 4, 1874.

### PROPOSED CONFERENCE OF SOUTH LONDON CHEMISTS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—I beg to suggest through the medium of your valuable journal the desirability of holding a conference of the whole body of pharmaceutical and non-pharmaceutical chemists of South London, which shall have for its object:

- 1st. The formation of local committees for organising a mutual society to promote the interests and advancement of the profession.
- 2nd. To promote early closing.
- 3rd. To establish a library and reading room.
- 4th. To promote periodical meetings for the interchange of professional experience and ideas.
- 5th. To aim at establishing a permanent school of chemistry to facilitate the acquirement of a sound knowledge of all branches of science in connection with pharmacy.

In reference to the first, I may say that South London is far behind many small provincial towns, having no local organised association; a large field for developing one is open.

As to the second, it must be admitted by all the many hours we are engaged in business daily are certainly unnecessary, and at the same time injurious to health.

As to the third, a great want is often felt (by those who have no library) for a means of reference to scientific works which are not required for general use.

As to the fourth, there would be a means of establishing good feeling by the interchange of thought and practical experience, and would be developing, by social meetings, that systematic observation which would enable us to keep pace with the times, as is abundantly proved by the successful working of our learned societies.

As to the fifth and last point, I am decidedly of opinion that a combined effort might be made with success to establish a school in connection with the association, to be a means of educating our pupils and apprentices in every branch appertaining to the profession, and required by the Pharmaceutical Society, at a much lower rate than the existing schools.

Should these proposals be approved of, a meeting could be arranged (by those who would be willing to form a committee *pro tem.* forwarding to me, or as under, their names and addresses), which could be advertised in due course, and a preliminary meeting held to decide upon the time and place for holding the conference.

I must apologise for taking up so much of your valuable space, and am, Sir,

Yours faithfully,  
SAMUEL LACEY.

62 Vassall Road, North Brixton, S.W.:

December 10, 1874.

Mr. J. Bailey, chemist, Clapham Road, S.W., will be glad to receive any names and addresses of those wishing to co-operate in the movement.

### THE ADULTERATION ACT.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—We are promised additional legislation on this subject in the ensuing session of Parliament; and it having been sufficiently discussed from a legal point of view, I propose to regard it from one of reason and equity.

The evidence euded by the Parliamentary Committee having shown that comparatively little adulteration is practised, and that scarcely anything of a deleterious nature is used, the tables of mortality further demonstrating that the public health was never better than of late years, and, as it may be safely inferred, competition ensuring that as good articles as are paid for are usually sold, I submit that no valid reason existed for the imposition of such a measure.

I am no advocate for adulteration, and believe those who are willing to pay legitimate prices for good articles find no difficulty in procuring them; but every tradesman knows there are numbers of bargain-hunting persons, ever aiming at something beyond their station, who are not content with good articles at fair prices, and those who humour their tastes obtain such custom; hence arise silk and woollen goods cheapened by admixture with cotton, cotton lowered by jute, good wrought iron displaced by inferior cast, moulded glass made to represent that which is cut, and shop windows glittering with tinsel ornaments for the poor, plated nickel for the middle class, and gilded silver for the rich. And is the Press, the legal profession, or even the clerical, exempt from the same practice of substituting the apparent for the real? And the gentlemen known as "promoters"—do not they annually extract millions from a confiding public, under representations and calculations the most baseless and delusive?

Seeing, then, that what is called "adulteration" is often a trade arrangement under which the tastes and wishes of the purchaser are satisfied, the question arises, Why should the seller of an ounce of cheap mustard or coffee be compelled to state that the former is coloured by so many grains of turmeric, or the latter mixed with a certain proportion of chicory, any more than the seller of a 50-guinea piano should be compelled to explain that the rosewood in its composition is represented by a thin slip of external veneer? And as the public speaker or writer may indulge in any amount of specious argument or misrepresentation, so that he do not by traitorous language endanger the peace, or, by becoming personal, inflict individual injury, why should not the commercial law be assimilated to

the literary, and the public prosecutor only called in when something positively deleterious is substituted for the wholesome, leaving those who think they are imposed upon to the remedy of ceasing to deal with the impostor, or instituting proceedings for the redress of the individual wrong?

I therefore submit that when the subject is again before Parliament, it be provided that a clause shall be proposed enacting that prosecutions are only to be instituted at the public expense when any admixture is found which would be injurious to the health of those using it; and that in all places returning members to Parliament the tradesmen affected by such legislation should combine, and seek an interview with their representatives to discuss the subject with them, and point out the oppressive character of the present enactment, requesting them to support such amelioration as it may be determined to propose; and they may then hope to secure for the subject a more reasonable consideration than it has at present received.

A COUNTRY CHEMIST.

## A CHRISTMAS OPPORTUNITY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—Some time since you kindly allowed me to make an appeal in your columns on behalf of Mrs. Newby, the widow of an aged chemist, in Brunswick Street, Hackney Road. This appeal you kindly enforced by some weighty words of your own. It has, however, only produced 3*l.* 4*s.* 6*d.*, as will be seen from the appended list. Although the deceased was not a pharmaceutical chemist, and is therefore excluded from the Benevolent Fund of the Pharmaceutical Society, he had been duly apprenticed, and I cannot believe that your readers will willingly let his widow (who is over 60) starve—for this is the only alternative if help be not speedily forthcoming, and I therefore make a special urgent appeal on her behalf. As before, subscriptions will be thankfully received for her by the Rev. Michael Kelly, St. Monica's, Hoxton, N. In full confidence that some "Good Samaritans" will be found amongst your readers,

I am, yours very faithfully,

W. BATHURST WOODMAN, M.D.

6 Christopher Street, Finsbury Square, E.C.

### Subscriptions already received.

	£	s.	d.
Mr. Pinken, Newport, Salop .. .. .	0	5	0
Fredk. Cole, Stoke Newington .. .. .	0	5	0
Slade, Llantrissant .. .. .	0	10	0
Reeves, Brighton .. .. .	0	5	0
Taylor, Droitwich .. .. .	0	4	0
An Ilfracombe Chemist .. .. .	0	4	6
R. Sloman, Esq., Torquay .. .. .	1	1	0
Mr. W. Adams, Plymouth .. .. .	0	10	0
	£3	4	6

November 23, 1874.

## CALOMEL.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Having sought in vain through the medium of the *Pharmaceutical Journal*\* for satisfactory and definite answers on certain points connected with the history and derivation of "Calomelas," or "Calomel," I may meet with better success if the Editor of THE CHEMIST AND DRUGGIST will permit me to put the following questions, with a few remarks that have suggested themselves, as a guide to yourself, your staff, or such of your antiquarian correspondents as may take an interest in such matters.

(1). When was the name of "Calomelas" or "Calomel" first used?

(2). To what substance or preparation was the term first applied?

(3). If originally applied to Æthiop's mineral or the black sulphuret of mercury, as stated by Dr. Hooper in his "Medical

Dictionary," or to a mixture of ʒj. of mercurius dulcis and gr. vij. of scammony, as claimed for Dr. Riverius by Mr. Grey (see Dr. Paris's "Pharmacologia"), when and under what circumstances was the name transferred to the subchloride of mercury?

(4). How comes the difference of colour in different specimens of calomel, varying as it does from a pale buff or mauna-like colour to a pure white?

Calomel is probably as old, or almost so, as mercury itself, having been formed in the great laboratory of the earth long before its artificial preparation was conceived in the mind of man—long, possibly, before the existence of man.

But it is only of the artificial preparation I am now speaking. The old chemists, although they made so many wonderful discoveries—numbers of which have stood doubly and trebly more than what is called the "test century," as applied to literature, and amongst which the substance under discussion is not the least valuable—were, nevertheless, but mere gropers in the dim twilight, their discoveries being frequently the result of chance rather than of scientific knowledge.

Crollius appears to have been the first who refers to this preparation, and Beguius the first who "described it most fully and clearly under the title of draco mitigatus in his 'Tyrocinium Chemicum,' 1608." (Dr. Paris).

In the earliest London Pharmacopœias I have been able to consult, viz., those of 1639 and 1650, we find no mention of the word "Calomelas," but we have the "Mercurius Dulcis Sublimatus," and the "Mercurius Dulcis Precipitatus." In the English translation of Beguius's "Tyrocinium Chemicum," published in London in 1669, I find no mention of the word; but three formulæ are given for its preparation under the names of "A white Precipitate," "A sweet Sublimate," and "Manna of Mercury," which, although chemically the same, were evidently regarded as quite different substances.

In Schröder's "Compleat Chymical Dispensatory as Englished by William Rowland" in 1669, we have a formula for the same preparation under the name "Vulgar Mercurius Dulcis, or the Tamed Dragon," but calomel as calomel is nowhere spoken of.

Several theories have been advanced to account for the seeming inconsistency of the derivation of this word as applied to the sub-chloride of mercury. The first is that of Sir Thomas Mayerne and his favourite black servant. This *jeu d'esprit* is too well known to need recapitulation. Then comes the surmise that it might have been given to it because of the "change of colour it undergoes from black to white during its preparation." (But in the humid process this does not take place at all.) Another good explanation has been given, viz., "quod nigro humori sit bonum—a good (καλός) remedy for black (μέλας) bile" (Dr. Paris); but this appears too far-fetched. The last, and I think the most ridiculous, supposition is that of Mr. Grey, who believed the term was first applied to the compound of Riverius (which has been previously spoken of) "as being a mixture of a white and dark coloured powder." White has nothing to do with it: the Greek words from which etymologists derive it signify good, fair, fine, or beautiful, and black. In Riverius's calomel there is no black at all, and the white (which, in every instance, is the great stumbling-block) is here rendered simply dirty by its admixture with scammony.

But I entertain a very strong impression that etymologists are at fault with reference to the derivation of the word; and if I obtain conclusive answers to the questions I have put, I may, with your permission, give my reasons for thinking so, and also what I consider a more probable derivation.

In reference to my last question I may say that Brande asserts that the buff-coloured calomel is that which is sublimed in small receivers and afterwards levigated, and that it assumes this creamy appearance in consequence of such levigation; whereas the white calomel being sublimed in very large chambers, it falls down, or is received in water placed there in the state of an impalpable powder, requiring no levigation. Brande, no doubt, was a very practical chemist, still I should like to hear a little more on this head.

W. R.

Maidstone.

[The question is an interesting one, though perhaps readers generally have not devoted their attention to it sufficiently to be of much use in enlightening our correspondent, who has evidently investigated the subject somewhat thoroughly. If W. R. will favour us with his theory, we shall be glad to publish it, and many of us will doubtless prove competent to criticise it, even if we cannot offer a better.]

\* Vide in "Answers to Correspondents," October 24, under my initials "W. R.," for which I am obliged to the Editor, but they do not go deep enough.



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.

- Muter's "Chemistry" (perfectly new), 9s. 6d. 9/245.
- "Attfield's Chemistry," clean and perfect. Cash offers. 12/245.
- "Pharmaceutical Journal," posted day of arrival prepaid. What offers? "Nemo," 2 Parade, Northampton.
- A 4-grain pill machine, Bushby's patent; makes 500 a minute. Offers wanted. 29/245.
- Cask of best lard oil, at 5s. per gallon in Bristol. Cocoa meal for cattle at 10s. per cwt. 8/245.
- Sixty or seventy pounds English beeswax; quality finest, colour good. Offers wanted. 10/245.
- Thirteen plumbago and other crucibles; 7s. 6d. the lot. D., 161 Seven Sisters' Road, London, N.
- 80-gallon leaden oil cistern, brass tap, new, 5l.; 36-gallon iron cistern, 12s. 6d. Thresh, Buxton.
- Simpson's spice for cattle, about 7 dozen, at 2s. 6d. doz. J. Meredith, chemist, Brecon.
- Sublime olive oil, 150 gallons; offers wanted for whole or less quantity; sample sent. Shelley, chemist, Bilston.
- Iron jacketed steam-pan, glazed inside, holds about 10 gallons (stout iron supports). 60s. Moore, chemist, Cheltenham.
- Several gross of Harvey's sauce bottles, 8s. 6d. per gross. Moore, chemist, Cheltenham.
- Set of chemical apparatus, cost 30s., offers wanted. J. Rayson, 11 Beast Market Hill, Nottingham.
- An excellent Ice Rescue for skaters. Trade price, 12s. 6d.; offered at 7s. 6d. Carriage paid. 10/756.
- Attfield's "Chemistry," 8s. Royle and Headland's Mat. Med., 8s. Both last editions. Nedaunis-Ais, Post Office, Newark.
- A very handsome pair of ladies' polished walnut brass inlaid skates; quite new. Wholesale price, 27s.; offered at 16s. 6d. 12/763.
- 1½ oz. very best grain musk, 58s.; 16 2s. packets Naldire's dog powders, 17s. 6d.; 15 2s. 6d. cases court plaster, 15s. 9/245.
- I have 36 back numbers of the "Chemists' Journal," including the Diary for 1874. 10s. the lot. S. Parker, 360 Leeds Road, Bradford.
- What offers? Specie jar, large size, scroll imperfect, circumference 43 inches, height 29 inches. Diggle, chemist, Heywood.
- Four 3-gallon window carboys, cut stoppers, and mahogany stands. 40s. the lot. Taylor & Dyson, Pendleton, Manchester.
- Wall case, 7 feet 10 in. by 4 feet 10 in., with 4 glass doors; nearly new. Cheap. "Chemist," Post Office, Hanley Potteries.

Two Osborne's patent portable cabinet copying presses, quite new, never been used. Retail price 21s. each. Offered at 10s. each for cash. 15/75.

Capital shower bath, very little used, in good condition; double-action force-pump, cost six guineas. No reasonable offer refused. Care of Moore, chemist, Cheltenham.

About 1½ cwt. oxide of zinc, 7d. per lb.; 5 cwts. silicate of magnesium, offers requested; 30 lbs. opium, 23s. 6d. per lb. Samples on application. Lowe, chemist, Chesterfield.

Bentham's "British Flora," 1,295 original drawings, 2 vols., complete; last edition (1865) perfectly new and uncut. Price 31s. 6d. (published at 3l. 10s.). D., 161 Seven Sisters' Road, London, N.

"Pharmaceutical Journals," from their commencement to 1874; 22 volumes half-calf, bound perfect; the remainder unbound, with 6 numbers deficient. Any reasonable offer. Letter Bag "A." Diss.

Bell metal mortar, weight 25 lbs., price 16s., slightly damaged. Lot of 25-gallon vinegar casks at 5s. each. 20/245.

About six stone of sodæ bicarb. (Chance's), slightly soiled, can be easily cleaned, 2s. 6d. per stone, or will exchange for two show globes, 21 inches high; also outside lamps (paraffin) and bracket. Cost 2l. 10s. Will take 1l. 10s. Allatt, Frizington.

Mahogany show case, 4 feet 6 inches long, with semi-circular return across counter, forming dispensing screen, 2 feet high; 9 plate-glass shelves, and one for return, 23 inches by 7 inches; 3 deal shelves at back. 60s. Moore, Cheltenham.

Jalapine, 7 ozs.; pepsine, 6 ozs.; podophyllin, 3 ozs.; aloine, 4 ozs.; gingerine, 3 ozs.; vermilion, 1lb.; urinometer (diabetes), enema apparatus, mahogany box, &c., fig. 3, Maw's Catalogue. Any reasonable offer for the whole or part accepted. W. Barry, St. John's Hill, Battersea, S.W.

Two Seidlitz cases, as Maw's Fig. 1; locks and keys, shop ladder, half-gallon tincture press on iron stand, pattern as Maw's Fig. 2; one-gallon glass percolator, complete, and circular gas stove, lined with fire brick, atmospheric burner about twelve inches diameter. The lot 33s., or offers separately. Moore, Cheltenham.

"Annals of Pharmacy," 2 vols.; Gray's "Supplement to Pharmacopœia;" Underwood's eight books on "Medicine;" spirit calculator; Beasley's "Pocket Formulary and Druggist's Receipt Book;" "Latin Pharmacopœia Londinensis;" Golding Bird's "Urinary Deposits." The lot 23s. Moore, Cheltenham.

Southall's Materia Medica cabinet, packed in strong paper envelopes, with particulars printed on each, clean and good condition; also "Pharmaceutical Journal" of 1871, 1872, and 1873, in weekly parts, clean. What offers? "Pharmaceutical," 16 Upper Woburn Place, Tavistock Square, London, W.C.

Dawson "On Spermatorrhœa," 1s. 6d.; P. L. Latin, 2s.; "Solceta Prescriptis," 2s.; Smith's "Guide," 2s. 6d.; Bateman's "Magnapœia," 2s. 6d.; Lescher's "Elements," new, 4s.; Ganot's "Physics," new, 10s. 6d.; Oliver's "Botany," 3s.; Lindley's "Flora Medica," 4s.; Lindley's "School Botany," 2s. "Galeu," 47 East Street, Baker Street, W.

Two vases, Silcock & Gilt's honey and tamarinds, middle size, 25s.; 1 white earthen leech jar, 7s. 6d.; 1 pair copper tea scales, ½ lb. size, 5s.; 1 mahogany upright case and desk, 3l., good as new; 1 window enclosure, 12 feet long, with glass top, door at each end, 2l.; 1 tier of shelving, suitable for window bottom or counter, painted mahogany, 10s., cheap. The lot 7l., a bargain. S. Parker, 360 Leeds Road, Bradford.

Mahogany wall-case, 6 feet high, and 5 feet long, in good condition, 75s.; octagon shaped lamp, re-gilt and japanned, any home stain on three sides, good size, with handsome bracket, 85s.; glass partition, 12 feet long with good panolled glass door, nearly new, 75s.; about 50 glass cases, all sizes. Second hand. R. Tomlinson, Birmingham.

Offers wanted for 5 gross empty 4-oz. eau-de-Cologne bottles in half-dozen boxes. Alpha, 13 Whitefriargate, Hull.

56 lbs. powdered Jamaica ginger in 7 lbs. and 14 lbs. parcels, 8d. lb.; samples, 2d. 2½ cwt. new English virgin honey, 1s. lb. W. H. L., 60 Silchester Road, Notting Hill, W.

Two handsome 22-inch globe lamps, glazed with ruby glass, with ornamental cast-iron bracket to fix to the wall; also about 22 doz. wide and narrow-mouth compressed globe stoppered shop rounds, with handsome shield labels in first-rate condition, and about 13 doz. wide and narrow-mouth 10 oz., 20 oz., and 40 oz. German bottles, with cut stoppers, and handsome burnt-in labels. Apply to Stieckland & Rowe, Cromwell Place, South Kensington.

Two mahogany nests shop drawers 6 feet long, and two smaller nests; 6 4-gallon pear-shape carboys, with circular mahogany stands; three pill machines to make 2, 3, 4 dozen 3 and 5 grain; lot tooth instruments; job lot shop bottles and jars, gold labelled. All open to fair offers. For other goods, &c., see miscellaneous and advertisement columns. Lloyd Rayner, 309 New North Road, Islington, London.

Elegant walnut-wood stereoscope, with 100 slides, transparencies &c., only 6l. 10s., cost 12l. Powerful phantasmagoria lantern, 3½-inch with 70 slides. Tales, views, levers, courses, and chromatropes, only 7l. 15s., cost 14l. Fine binocular microscope, Ross pattern, largest size, with polariscope, English objectives, 25l., cost 35l. Several oil paintings in handsome gilt frames, a bargain; also some smaller ones. Two magnificent musical boxes, a bargain. W. C. Hughes, 151 Hoxton Street, London, N.

Dental apparatus, all new this year, must be sold before Christmas. Vulcaniser, 3l. 10s.; lathe, 3l. 5s.; 2 doz. Britannia metal impression trays, 1l. 15s.; string of shades, 10s. 6d.; key and 4 forceps, 10s.; ½ doz. mouth files, 4s. 6d.; Richardson's etheriser, 17s. 6d.; 1 lb. German rubber 18s.; 1 lb. German rubber, 10s. 6d.; springs and swivels, 25s.; cardboard boxes, 5s. 9d.; drills and countersinks, 1s. 6d.; amalgam, 13s. 6d.; Tome's "Dental Surgery," 12s.; files and pliers, 2s. 6d.—9l. for the lot. Chemists' fixtures, bottles, and stock; shop 17 feet by 12 feet, mahogany and pine fittings, cost with bottles over 50l. No reasonable offer refused. Apply at once to Magor, Chemist, Truro.

All post free. Piesse's "Perfumery," 6s. 6d.; Webster's "Analytical Chemistry," Elderhorst's "Blowpipe Analysis," Griffin's "Chemical Testing of Wines and Spirits," 8s. 6d. the three; Bainbridge's "Fly Fishing" coloured plates, 8s. (cost 16s.); Hunt "On Cure of Stammering," 2s. 3d.; Gregory's "Outlines Chemistry," 3s. 9d.; Bushnau's "Observations on Hydropathy," 1s. 6d.; Reid's "Hypochondriasis," 3s.; Dawson "On Nervous Affections," 1s. 6d.; Garduer "On Gout," 2s. 6d.; Hitchman "On Consumption," 1s. 6d.; Chapman "On Varicose Veins," 1s.; Hughes "On Auscultation," 2s. 3d.; Reed's "Diseases of Kidneys," 1s. 6d.; Squire's "Three Pharmacopoeias," 4s.; Shaw's "Nervous System," 2s. 6d.; Bence Jones's "Animal Chemistry," 3s.; Rees "On Kidneys," 1s. 6d. A. Davis, 161 Seven Sisters' Road, London, N.

#### WANTED.

Southall's Materia Medica cabinet. State price. 30/24s.

Three or four pear-shaped carboys. State price, &c. J. Ruston, Maryport.

A bell-shaped cast-iron mortar, 16-pint size. Alpha, 13 Whitefriargate, Hull.

Bottles, jars, drawers, cases, scales, &c. State price, size, and condition of same. 16/204.

Several large oil or paraffin cisterns, in good condition. John Wain, Ripley, Derby.

Attfield's "Chemistry." State lowest price. A., Post Office, Boughton, Chester.

Chemical black. Wanted a means of making copper black, or a japan that will not scrape off. Apply to Z 301, Messrs. Waud & Graves, stationers, Love Lane, Eastcheap.



THE year now closing will not be remarkable in the annals of commerce for either great prosperity or serious disasters. It must not be forgotten, and this applies especially to the unbroken dullness of the chemical markets—that 1873 and 1874 have been heavily weighted with the stocks accumulated in second hands, both in this country and abroad, in consequence of the brisk year or two which preceded. Bearing this fact in mind, it may fairly be doubted whether the real demand has been less this year than in the previous one, though the official returns will seem to indicate such a conclusion. Certainly, however, the profits of manufacturers have been smaller, and it seems likely enough that prices have now reached about the lowest point at which they can stand to be remunerative at all.

The most remarkable features of business which we have had to report during the year have undoubtedly been the heavy rise in quicksilver, and the unexpected drop in iodine, consequent upon the Chilean imports, as we have previously explained. Both of these characteristics have been maintained. Quicksilver has been freely sold even at 26l., but its nominal price has been 25l. per bottle of 75 lbs., and we believe it can now be had at that figure. Iodine is dull even at 8d., eighteen cases of Peruvian placed on the market last week having been bought in at that figure. The sample was declared to contain 98·80 per cent. of iodine and no lead. The absence of purchasers is to be taken, we think, rather as a sign of confidence that the new product will keep down the price, than as an indication of distrust in its merits.

A rapid and considerable rise has occurred in opium, fine Turkey now commanding from 38s. to 40s. per lb. Coincident with this a reduction has occurred in morphia in consequence of the competition of some German makers. Of course this can only affect the market temporarily. A similar cause has occasioned a corresponding fluctuation, in the price of quinine, which is now quoted at 7s., instead of 7s. 4d., as last month. The value of bark, however, is fully maintained.

Camphor has fallen steadily. Large quantities have been bought, but the present stock is still unusually large, and it is likely that refiners will have to sink their prices before the new year.

A large supply of the new vanilla (252 tins) was offered at the drug sales last week, about half of which sold, but at considerably reduced prices.

Some cinchona bark, of Ceylon growth, was also put up, good qualities of which made 2s. 3d. to 2s. 4d.

Citric acid has given way in price, and is now quoted at 3s. 5d. Some quantity was sold early in the month at 3s. 2d. Foreign holders of juice, however, are reported to be retaining their stock for a better aspect of the market, which they anticipate.

Nitrate of soda has occasioned a good bit of speculation for more than a year past, with not very gratifying results, we presume, to those who have ventured. So long ago as January, 1873, the Peruvian Government threatened an export duty of 60 c. per quintal, instead of 15 c., as then levied. Until now that duty has not been levied. Time after time it has been announced that it was just going to be put in force, and of course those who had early advice became purchasers. What advantage there can be to the Government in maintaining this state of uncertainty it is difficult to see. Fertilisers, generally, of chemical manufacture are in a doubtful condition, as there have not yet appeared any official accounts of the guano deposits recently discovered; but it is said that these fields are now being surveyed, and if rumours are correct as to their extent, it is probable that the abundance of guano will seriously affect the value of manufactured manures.

American turpentine has arrived in large quantity, and quotations have declined a little, 25s. being now the attainable price. French spirits are *hors concours*. Olive oil is firm just now, but prices are barely what they were a month ago. There is no Gallipoli oil in the market. Linseed oil is getting firmer, and prices for forward delivery are high. A good demand prevails for petroleum, which sells for 9d. to 9½d.

### Monthly Price Current.

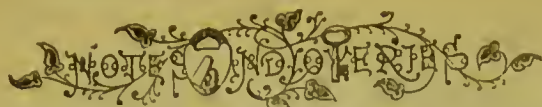
The prices quoted in the following list are those actually obtained in Mining Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale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

CHEMICALS.	1874.		1873.	
	s. d.	s. d.	s. d.	s. d.
<b>ACIDS—</b>				
Acetic .....per lb.	0 4 to	0 4½	0 4 to	0 0
Citric .....	3 5 ..	0 0	4 4 ..	4 4½
Hydrochloric .....per cwt.	5 0 ..	7 0	4 0 ..	7 0
Nitric .....	0 5 ..	0 5½	0 5 ..	0 5½
Oxalic .....	0 6½ ..	0 0	0 7½ ..	0 7½
Sulphuric .....	0 0½ ..	0 1	0 0½ ..	0 1
Tartaric crystal..	1 6 ..	0 0	1 7 ..	0 0
powdered ..	1 7 ..	0 0	1 7 ..	0 0
<b>ANTIMONY ore</b> .....per ton	200 0 ..	240 0	240 0 ..	280 0
crude .. per cwt.	0 0 ..	0 0	0 0 ..	0 0
regulus .. "	0 0 ..	0 0	0 0 ..	0 0
star.....	46 0 ..	47 0	57 0 ..	58 0
<b>ARSENIC, lump</b> .....	20 6 ..	0 0	20 0 ..	20 6
powder....	10 0 ..	10 3	10 3 ..	0 0
<b>BRIMSTONE, rough</b> ..per ton	145 0 ..	150 0	127 6 ..	145 0
roll .. per cwt.	10 0 ..	10 6	10 0 ..	10 6
flour....	11 6 ..	12 0	12 0 ..	12 6
<b>IODINE, dry</b> .....	0 8 ..	0 0	1 3 ..	0 0
<b>IVORY BLACK, dry</b> .. per cwt.	8 6 ..	0 0	8 6 ..	0 0
<b>MAGNESIA, calcined</b> ..per lb.	1 6 ..	0 0	1 6 ..	0 0
<b>MERCURY</b> .....	500 0 ..	0 0	390 0 ..	400 0
<b>MINIUM, red</b> .....	24 6 ..	0 0	24 6 ..	25 6
orange ..	36 0 ..	0 0	35 6 ..	0 0
<b>PRECIPITATE, red</b> .. per lb.	7 3 ..	0 0	5 7 ..	0 0
white ..	6 2 ..	0 0	5 6 ..	0 0
<b>PRUSSIAN BLUE</b> ..	0 0 ..	0 0	0 0 ..	0 0
<b>SALTS—</b>				
Alum .....	165 0 ..	175 0	170 0 ..	180 0
powder.....	185 0 ..	190 0	190 0 ..	0 0
<b>Ammonia:</b>				
Carbonate..... per lb.	0 7 ..	0 7½	0 7½ ..	0 7½
Hydrochlorate, crude,				
white .....	640 0 ..	0 0	650 0 ..	0 0
British (see Sal Am.)				
Sulphate..... per ton	370 0 ..	380 0	360 0 ..	370 0
Argol, Cape .....	90 0 ..	98 0	87 0 ..	96 6
Red.....	76 0 ..	86 0	75 0 ..	75 0
Operto, red. "	32 0 ..	33 0	32 0 ..	32 6
Sicily .....	60 0 ..	63 0	52 6 ..	57 6
<b>Ashes (see Potash and Soda)</b>				
Bleaching powd...per cwt.	10 0 ..	10 3	10 6 ..	10 9
Borax, crude.....	40 0 ..	66 0	50 0 ..	90 0
British refined. "	68 0 ..	0 0	92 6 ..	95 0
Calomel .....	6 9 ..	0 0	5 2 ..	0 0
<b>Copper:</b>				
Sulphate ... per cwt.	27 0 ..	28 0	31 6 ..	33 0
Copperas, green..per ton	65 0 ..	70 0	60 0 ..	62 6
Corrosive Sublimate p. lb.	5 11 ..	0 0	4 5 ..	0 0
Cr. Tartar, French, p. cwt.	118 0 ..	0 0	111 0 ..	112 0
brown ..	95 0 ..	105 0	95 0 ..	100 0
Epsom Salts .....	5 9 ..	6 6	5 9 ..	6 3
Glauber Salts .....	6 6 ..	7 0	4 6 ..	5 6
<b>Lime:</b>				
Acetate, white, per cwt.	14 0 ..	21 0	14 6 ..	21 0
Magnesia: Carbonate "	42 6 ..	45 0	42 6 ..	45 0
<b>Potash:</b>				
Bichromate ....per lb.	0 6½ ..	0 0	0 8½ ..	0 0
<b>Carbonate:</b>				
Potashes, Canada, 1st				
sort .....	36 0 ..	36 6	36 0 ..	36 6
Pearlshes, Canada, 1st				
sort .....	43 0 ..	0 0	48 0 ..	0 0
Chlorate .....	0 10½ ..	0 10½	1 3 ..	1 2
Prussiate .....	1 2 ..	0 0	1 3 ..	0 0
red .....	3 2 ..	3 3	2 10 ..	2 11
Tartrate (see Argol and Cream of Tartar)				
<b>Potassium:</b>				
Chloride..... per cwt.	7 0 ..	0 0	8 0 ..	0 0
Iodide .....	10 0 ..	0 0	19 0 ..	0 0
<b>Quinine:</b>				
Sulphate, British, in				
bottles .....	7 0 ..	0 0	9 0 ..	0 0
Sulphate, French "	7 0 ..	0 0	9 4 ..	0 0
Sal Acetos .....	0 10 ..	0 10½	0 11 ..	0 0
Sal Ammoniac, Brit. cwt.	44 0 ..	45 0	44 0 ..	45 0
<b>Saltpetre:</b>				
Bengal, 6 per cent. or				
under .....	21 6 ..	22 0	25 6 ..	26 3
Bengal, over 6 per cent.				
per cwt.	19 6 ..	21 3	23 6 ..	25 3
British, refined "	25 3 ..	26 0	27 6 ..	28 6
Soda: Bicarbonate, p. cwt.	15 6 ..	0 0	18 0 ..	0 0
<b>Carbonate:</b>				
Soda Ash .. per deg.	0 2½ ..	0 0	0 2½ ..	0 0
Soda Crystals per ton	100 0 ..	102 6	115 0 ..	120 0
Hyposulphite, per cwt.	0 0 ..	0 0	15 6 ..	16 0
Nitrate .....	13 3 ..	0 0	12 0 ..	13 0
<b>SUGAR OF LEAD, White</b> cwt.	45 0 ..	46 0	47 0 ..	48 0
<b>SUGAR OF LEAD, Brown</b> , cwt.	33 6 ..	39 0	33 0 ..	34 0
<b>SULPHUR (see Brimstone)</b>				

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	s. d.	s. d.	s. d.	s. d.
VERDIGRIS .....	per lb.	1 1 to 1 5	1 1½ to 1 6	
VERMILION, English "	"	6 2 .. 0 0	4 6 .. 4 8	
China "	"	5 6 .. 5 7	4 3 .. 4 4	
<b>DRUGS.</b>				
<b>ALOES, Hepatic</b> .....	per cwt.	60 0 .. 180 0	80 0 .. 200 0	
Socotrine ..	"	102 6 .. 240 0	110 0 .. 320 0	
Cape, good ..	"	36 0 .. 40 0	30 0 .. 40 0	
Inferior .....	"	30 0 .. 35 0	19 0 .. 29 0	
Barbadoes ..	"	50 0 .. 187 6	75 0 .. 210 0	
<b>AMBERGRIS, grey</b> .....oz.		50 0 .. 60 0	35 0 .. 46 0	
<b>BALSAM—</b>				
Canada.....per lb.		1 10 .. 2 0	2 6 .. 0 0	
Capivi .....	"	2 7½ .. 2 8	2 11 .. 0 0	
Peru .....	"	7 0 .. 7 3	8 6 .. 0 0	
Tolu .....	"	4 0 .. 4 2	1 9 .. 1 11	
<b>BARKS—</b>				
Canella alba.....per cwt		16 0 .. 27 0	15 0 .. 28 0	
Cascarilla .....	"	19 0 .. 25 0	25 0 .. 30 0	
Peru, crown & grey per lb.		0 9 .. 2 6	0 11 .. 2 8	
Calisaya, flat "	"	2 2 .. 5 0	3 0 .. 3 6	
" quill "	"	2 8 .. 5 4	3 3 .. 4 3	
Carthagea ..	"	0 6 .. 1 1	0 10 .. 2 0	
E. I. ....	"	0 6 .. 6 6	0 4 .. 4 6	
Pitayo .....	"	0 4 .. 2 0	0 6 .. 2 2	
Ited .....	"	1 3 .. 3 10	1 10 .. 6 0	
Buchu Leaves.....	"	0 2 .. 1 0	0 1 .. 0 9	
<b>CAMPHOR, China</b> ..per cwt.		71 0 .. 73 0	72 6 .. 75 0	
Japan ..	"	74 0 .. 75 0	0 0 .. 0 0	
Refin. Eng. per lb.		1 2 .. 0 0	1 2 .. 0 0	
<b>CANTHARIDES</b> .....	"	3 0 .. 5 0	7 0 .. 0 0	
<b>CHAMOMILE FLOWERS</b> p. cwt.		35 0 .. 50 0	20 0 .. 66 0	
<b>CASTOREUM</b> .....	per lb.	4 0 .. 20 0	6 0 .. 20 0	
<b>DRAGON'S BLOOD, Ip.</b> p. cwt.		95 0 .. 220 0	100 0 .. 240 0	
<b>FRUITS AND SEEDS (see also Seeds and Spices).</b>				
Anise, China Star per cwt.		115 0 .. 120 0	150 0 .. 155 0	
Spanish, &c. "	"	15 0 .. 28 0	29 0 .. 35 0	
Beans, Tonquin....per lb.		3 2 .. 3 4	1 9 .. 2 6	
Cardamoms, Malabar				
good .....	"	4 11 .. 5 6	5 0 .. 6 3	
inferior....	"	2 0 .. 4 10	3 6 .. 4 11	
Madras.....	"	2 5 .. 3 6	2 6 .. 4 6	
Ceylon .....	"	4 0 .. 5 6	4 6 .. 0 0	
Cassia Fistula....per cwt.		14 0 .. 0 0	10 0 .. 20 0	
Castor Seeds .....	"	5 0 .. 9 0	5 0 .. 10 0	
Cocculus Indicus "	"	14 6 .. 17 0	13 0 .. 27 0	
Colocyath, apple ..per lb.		0 4 .. 0 10	0 4 .. 0 9	
Croton Seeds .....	per cwt.	42 0 .. 44 0	45 0 .. 54 0	
Cubebs .....	"	22 0 .. 23 3	22 0 .. 24 0	
Cumin .....	"	16 0 .. 20 0	18 0 .. 26 0	
Dividivi .....	"	11 0 .. 15 0	11 0 .. 15 0	
Fenugreek .....	"	8 0 .. 16 0	12 0 .. 20 0	
Guinea Grains ..	"	25 0 .. 27 6	25 0 .. 28 0	
Juniper Berries "	"	9 0 .. 10 6	9 0 .. 10 6	
Nux Vomica....	"	7 0 .. 13 0	8 0 .. 12 0	
Tamarinds, East India, "	"	7 0 .. 16 0	5 0 .. 18 0	
West India, new "	"	10 0 .. 18 0	16 0 .. 32 0	
Vanilla, large .... per lb.		60 0 .. 87 0	65 0 .. 75 0	
inferior "	"	50 0 .. 68 0	28 0 .. 62 6	
Wormseed .....	per cwt.	0 0 .. 0 0	0 0 .. 0 0	
<b>GINGER, Preserved</b> , per lb.		0 6½ .. 0 10	0 6 .. 0 7	
<b>HONEY Chili</b> .....	per cwt.	35 0 .. 46 0	33 0 .. 42 0	
Jamaica ..	"	38 0 .. 52 6	28 0 .. 44 0	
Australian ..	"	38 0 .. 48 0	25 0 .. 40 0	
<b>IPECACUANHA</b> .....	per lb.	4 0 .. 4 7	3 0 .. 3 6	
<b>ISINGLASS, Brazil.</b> ..		2 10 .. 5 7	3 3 .. 5 4	
Tongue sort "	"	3 0 .. 5 8	4 0 .. 5 6	
East India "	"	1 5 .. 4 5	2 6 .. 4 8	
West India "	"	5 0 .. 5 6	4 10 .. 5 4	
Russ. long staple "	"	8 6 .. 13 0	8 0 .. 12 6	
inferior "	"	4 0 .. 8 0	3 6 .. 7 6	
Simovia "	"	3 3 .. 5 0	2 6 .. 4 6	
<b>JALAP, good</b> .....	"	0 9 .. 0 10	1 4 .. 1 5	
infer. & stems "	"	0 8 .. 0 8½	0 10 .. 1 2	
<b>LEMON JUICE</b> .... per degree		0 2½ .. 0 2½	0 2½ .. 0 0	
<b>LIME JUICE</b> .....per gall.		1 6 .. 2 0	2 4 .. 3 6	
<b>LIQUORICE, Spanish</b> per cwt.		40 0 .. 70 0	35 0 .. 70 0	
Liquorice Root "	"	11 0 .. 16 0	10 6 .. 15 0	
<b>MANNA, flaky</b> .....	per lb.	2 6 .. 3 0	2 6 .. 3 3	
small .....	"	1 2 .. 1 5	1 4 .. 1 9	
<b>MUSK, Pod</b> .....per oz.		20 0 .. 45 0	20 0 .. 38 0	
Grain.....	"	46 0 .. 60 0	40 0 .. 55 0	
<b>OILS (see also separate list)</b>				
Almond, expressed per lb.		0 11 .. 0 0	0 11 .. 1 0	
Castor, 1st pale....	"	0 4½ .. 0 5	0 5 .. 0 0	
second .....	"	0 4½ .. 0 4½	0 5 .. 0 5½	
infer. & dark "	"	0 4 .. 0 4½	0 4½ .. 0 4½	
Bombay (in casks)	"	0 4½ .. 0 0	0 4½ .. 0 0	
Cod Liver .....	per gall.	4 0 .. 6 0	3 6 .. 6 0	
Croton .....	per oz.	0 3 .. 0 4	0 3 .. 0 4	
<b>Essential Oils:</b>				
Almond .....	per lb.	25 0 .. 0 0	30 0 .. 0 3	
Anise-seed .....	"	9 0 .. 0 0	10 9 .. 0 0	
Bay .....	per cwt.	0 0 .. 0 0	65 0 .. 70 2	
Bergamot .....	per lb.	10 0 .. 25 0	15 0 .. 18 0	
Cajeput, (in bond)per oz.		2 3 .. 2 5	2 4 .. 2 0	
Caraway.....per lb.		5 3 .. 6 0	5 6 .. 6 0	
Cassia .....	"	4 9 .. 0 0	5 9 .. 6 0	
Cinnamon .....	per oz.	0 8 .. 7 9	1 0 .. 5 0	
Cinnamon-leaf ..	"	0 2½ .. 0 3	0 2 .. 0 3	
Citronelle .....	"	0 1½ .. 0 0	0 1½ .. 0 5	
Clove .....	per lb.	9 6 .. 0 0	5 6 .. 5 9	
Juniper .....	"	1 10 .. 2 0	1 3 .. 2 4	
Lavender .....	per lb.	1 10 .. 5 0	1 10 .. 5 6	
Lemon.....	"	7 0 .. 10 0	14 0 .. 15 0	

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	s. d.	s. d.	s. d.	s. d.
Essential Oils, continued.—				
Lemongrass . . . . . per oz.	0 3½	0 3½	0 3½	0 0
Neroli . . . . . "	0 4	0 0	0 5	0 6
Nutmeg . . . . . "	0 7½	0 8	0 8	0 8½
Orange . . . . . per lb.	8 0	10 0	8 0	11 0
Otto of Roses . . . . . per oz.	15 0	22 0	13 0	23 0
Patchouli . . . . . "	2 9	4 0	3 9	4 0
Peppermint :				
American . . . . . per lb.	20 6	21 0	17 0	18 0
English . . . . . "	29 9	32 0	27 0	34 0
Rosemary . . . . . "	1 4	1 10	1 4	1 10
Sassafras . . . . . "	2 0	3 0	2 3	3 8
Spearmint . . . . . "	6 0	18 0	6 0	19 0
Thyme . . . . . "	1 9	2 0	1 10	0 0
Mace, expressed . . . . . per oz.	0 3	0 3½	0 2	0 3
OPIMUM, Turkey . . . . . per lb.	38 0	40 0	25 0	40 0
inferior . . . . . "	20 0	37 0	15 0	34 0
QUASSIA (bitter wood) per ton	0 0	0 0	70 0	90 0
RHUBARB, China, good and				
fino . . . . . per lb.	1 11	5 9	3 0	5 0
Good, mid. to ord. "	0 3	1 6	0 3	2 6
Dutch trimmed . . . . . "	0 0	0 0	0 0	0 0
Russian . . . . . "	0 0	0 0	0 0	0 0
ROOTS—Calumba . . . . . per cwt.	10 0	18 0	10 0	25 0
China . . . . . "	18 0	20 0	22 0	23 0
Galangal . . . . . "	22 0	25 0	18 0	26 0
Gentian . . . . . "	17 0	19 0	18 0	19 0
Hellebore . . . . . "	30 0	33 0	30 0	33 0
Orris . . . . . "	30 0	70 0	36 0	80 0
Pellitory . . . . . "	38 0	39 0	38 0	39 0
Pink . . . . . per lb.	1 0	1 3	1 0	1 3
Rhatany . . . . . "	0 4	1 10	0 6	1 6
Seneka . . . . . "	3 6	3 10	4 6	5 0
Snake . . . . . "	1 0	1 9	1 8	1 9
SAFFRON, Spanish . . . . . "	25 0	26 0	24 0	25 0
SALEP . . . . . per cwt.	170 0	200 0	170 0	180 0
SARSAPARILLA, Lima per lb.	0 6	0 9	0 6	0 7
Para . . . . . "	1 0	1 3	1 0	1 3
Honduras . . . . . "	1 4	1 9	1 1	1 7
Jamaica . . . . . "	1 9	2 6	1 6	2 0
SASSAFRAS . . . . . per cwt.	13 0	15 0	16 0	17 0
SCAMMONY, Virgin . . . . . per lb.	25 0	35 0	25 0	30 0
second & ordinary . . . . . "	7 0	24 0	9 0	24 6
SENA, Bombay . . . . . "	0 1	0 5	0 1	0 5
Tinnivelly . . . . . "	0 2	0 9	0 2½	1 2
Alexandria . . . . . "	0 3½	1 5	0 4	1 10
SPERMACETI, refined . . . . . "	1 2	1 3	1 6	0 0
American . . . . . "	1 0	1 1	1 2	1 3
SQUILLS . . . . . "	0 1½	0 3½	0 1	0 3
<b>GUMS.</b>	£ s.	£ s.	£ s.	£ s.
AMMONIACI drop . . . . . per cwt.	4 15	6 5	4 0	6 10
lump . . . . . "	3 10	4 10	2 10	4 0
ANIMI, fine washed . . . . . "	12 0	13 0	11 0	13 10
bold scraped . . . . . "	10 0	11 15	9 0	11 0
sorts . . . . . "	5 15	9 10	5 0	10 0
dark . . . . . "	5 0	5 5	4 0	4 15
ARABIC, E.I., fine				
pale picked . . . . . "	2 18	3 10	3 5	3 15
srts., md. to fin. . . . . "	1 16	2 16	2 10	3 0
garblings . . . . . "	0 19	1 10	1 0	2 5
TURKEY, pick. gd. to fin. . . . . "	7 0	11 0	7 10	11 10
second & inf. . . . . "	3 0	6 15	4 0	7 0
in sorts . . . . . "	1 13	2 15	2 10	3 10
Gedda . . . . . "	1 0	1 10	1 1	1 15
BARBARY, white . . . . . "	1 5	2 2	2 10	2 17
brown . . . . . "	1 6	1 12	1 6	1 18
AUSTRALIAN . . . . . "	1 15	2 10	1 7	2 5
ESAFETIDA, cm. to fin . . . . . "	1 18	2 9	1 3	3 10
NJAMIN, 1st & 2nd . . . . . "	12 0	27 0	8 10	24 0
Sumatra 1st & 2nd . . . . . "	7 10	12 0	8 0	10 10
3rd . . . . . "	3 5	4 7/6	3 10	4 5
COPAL, Angola red . . . . . "	5 10	5 15	6 0	6 15
Benguela . . . . . "	3 10	3 12/6	5 10	5 15
Sierra Leone, per lb. . . . . "	0 4½	0 10½	0 3	0 9½
Manilla . . . . . per cwt.	12 0	21 0	13 0	26 0
DAMMAR, pale . . . . . "	45 0	50 0	47 0	50 0
Singapore . . . . . "	45 0	50 0	43 0	49 0
EUPHORBIIUM . . . . . "	11 0	15 0	11 0	15 0
GALBANUM . . . . . per lb.	1 6	2 0	1 6	2 0
GAMBOGE, pkd. pipe per cwt.	180 0	280 0	220 0	300 0
GUALIACUM . . . . . per lb.	0 8	2 7	0 8	2 6
KINO . . . . . per cwt.	60 0	90 0	50 0	85 0
KOWRIE, rough . . . . . "	27 0	40 0	17 0	30 6
scraped sorts . . . . . "	34 6	50 0	30 0	39 0
MASTIC, picked . . . . . per lb.	4 6	6 0	6 0	7 0
MYRRH, gd. & fine per cwt.	119 0	280 0	120 0	240 0
ord. to fair . . . . . "	75 0	115 0	40 0	110 0
OLIBANUM, p. drop				
amber & ylw. . . . . "	62 0	68 0	70 0	77 0
garblings . . . . . "	54 0	60 0	60 0	70 0
Senechal . . . . . "	20 0	39 0	23 0	40 0
SANDARAC . . . . . "	2 0	2 15	3 0	4 0
SHELLAC, Orange . . . . . "	85 0	100 0	55 0	95 0
Liver . . . . . "	275 0	290 0	202 6	220 0
THUS . . . . . "	250 0	280 0	195 0	200 0
TRAGACANTH, leaf . . . . . "	22 0	23 0	18 0	30 0
in sorts . . . . . "	240 0	360 0	270 0	410 0
SEAL, pale . . . . . per tun	35 10	0 0	34 0	34 10
yellow to tinged . . . . . "	32 0	35 0	31 10	33 10
brown . . . . . "	28 0	29 0	30 0	31 10
SPERM . . . . . "	105 0	0 0	0 0	0 0
COD . . . . . "	40 0	0 0	34 0	0 0

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	£ s.	£ s.	£ s.	£ s.
Oils, continued.—				
WHALE, South Sea, pale, per tun	36 0	to 0 0	34 0	to 0 0
yellow . . . . . "	28 10	0 0	32 10	33 0
brown . . . . . "	26 0	29 0	30 0	31 0
East India, Fish . . . . . "	24 0	24 10	26 0	26 10
OLIVE, Gullpoli . . . . . per ton	0 0	0 0	45 0	46 0
Trieste . . . . . "	42 0	42 10	44 10	45 0
Levant . . . . . "	41 0	0 0	42 0	42 10
Mogador . . . . . "	40 5	0 0	40 10	0 0
Spanish . . . . . "	44 0	0 0	43 0	43 10
Sicily . . . . . "	42 10	42 10	43 0	0 0
COCOANUT, Cochln. . . . . "	44 0	0 0	38 0	38 10
Ceylon . . . . . "	37 5	37 0	32 10	0 0
Sydney . . . . . "	36 0	36 10	28 0	33 0
GROUND NUT AND GINGELLY :				
Bombay . . . . . "	0 0	0 0	0 0	0 0
Madras . . . . . "	35 0	0 0	35 10	36 0
PALM, fine . . . . . "	35 10	0 0	38 0	0 0
LINSEED . . . . . "	24 10	0 0	30 0	0 0
RAPESEED, English, pale . . . . . "	30 0	30 5	34 10	0 0
brown . . . . . "	28 0	28 2/6	32 10	0 0
Foreign, pale . . . . . "	31 0	0 0	36 0	0 0
brown . . . . . "	0 0	0 0	0 0	0 0
COTTONSEED . . . . . "	24 15	25 0	27 10	28 0
LARD . . . . . "	70 0	0 0	43 0	0 0
TALLOW . . . . . "	22 0	28 0	29 0	0 0
TURPENTINE, American, cks.				
French . . . . . "	25 0	0 0	31 0	31 3
" . . . . . "	0 0	0 0	0 0	0 0
PETROLEUM, Crude . . . . . "	0 0	0 0	0 0	0 0
refined, per gall. . . . . "	0 9	0 9½	1 0	1 0½
Spirit . . . . . "	0 9½	0 0	1 0	0 0
<b>SEEDS.</b>				
CANARY . . . . . per qr.	86 0	90 0	48 0	60 0
CARAWAY, English per cwt.	0 0	0 0	39 0	44 0
German, &c. . . . . "	24 0	29 0	26 0	36 0
CORIANDER . . . . . "	8 0	18 0	16 0	24 0
HEMP . . . . . per qr.	40 0	44 0	40 0	41 0
LINSEED, English per qr. . . . . "	59 0	66 0	58 0	61 0
Black Sea & Azof . . . . . "	53 0	54 0	59 0	60 0
Calcutta . . . . . "	56 6	0 0	63 0	63 6
Bombay . . . . . "	57 0	0 0	64 0	0 0
St. Petersburg . . . . . "	54 0	0 0	56 0	59 0
Mustard, brown . . . . . per bshl.	0 0	0 0	10 6	16 0
white . . . . . "	10 0	12 0	8 0	12 6
POPPY, East India, per qr.	56 0	57 0	66 0	67 0
<b>SPICES.</b>				
CASSIA LIGNEA . . . . . per cwt.	60 0	75 0	77 0	81
Vera . . . . . "	24 0	50 0	27 6	55 0
Buds . . . . . "	120 0	122 6	117 6	120 0
CINNAMON, Ceylon :				
1st quality . . . . . per lb.	2 8	4 7	1 7	3 6
2nd do. . . . . "	1 11	3 8	1 4	3 1
3rd do. . . . . "	1 6	3 0	1 0	2 10
Tellicherry . . . . . "	3 3	3 5	2 7	3 0
CLOVES, Penang . . . . . "	2 0	2 1	1 2	1 3
Amboyna . . . . . "	1 4	1 5	0 9	0 11
Zanzibar . . . . . "	1 3	1 5	0 10	0 0
GINGER, Jam., fine per cwt.	105 0	200 0	110 0	250 0
Ord. to good . . . . . "	73 0	100 0	66 0	100 0
African . . . . . "	58 0	0 0	54 0	0 0
Bengal . . . . . "	51 0	57 0	53 0	54 0
Malabar . . . . . "	51 0	52 0	52 0	54 0
Cochin . . . . . "	80 0	112 0	68 0	120 0
PEPPER, Blk, Malabar, per lb.	0 7	0 7½	0 7½	0 8
Singapore . . . . . "	0 7	0 0	0 7½	0 0
White Tellicherry . . . . . "	1 0	1 7	2 0	0 0
Cayenne . . . . . "	1 6	2 2	1 0	2 0
MACE, 1st quality . . . . . "	3 1	3 7	3 7	4 2
2nd and inferior . . . . . "	1 8	3 0	2 11	3 6
NUTMEGS, 78 to 60 to lb.				
90 to 80 . . . . . "	3 7	4 4	3 4	4 5
132 to 95 . . . . . "	3 4	3 6	3 1	3 3
" . . . . . "	2 11	3 3	2 7	3 0
" . . . . . "	0 3	0 3½	0 2½	0 3
<b>VARIOUS PRODUCTS.</b>				
COCHINEAL—				
Honduras, black . . . . . per lb.	2 0	2 10	2 3	3 1
" silver . . . . . "	1 11	2 4	2 1	2 7
" pasty . . . . . "	1 10	0 0	1 8	2 0
Mexican, black . . . . . "	2 0	2 2	2 3	2 5
" silver . . . . . "	1 9	1 9	2 0	0 0
Teneriffe, black . . . . . "	2 1	3 8	2 3	3 9
" silver . . . . . "	1 11	2 2	2 1	2 4
SOAP, Castile . . . . . per cwt.	33 0	34 0	33 0	34 0
SPONGE, Turk. fin. pkd prlb.	12 0	16 0	12 0	16 0
Fair to good . . . . . "	4 0	11 0	4 0	11 0
Ordinary . . . . . "	1 0	3 6	1 0	3 6
Bahama . . . . . "	0 6	3 6	0 6	3 6
TERRA JAPONICA—				
Gambier . . . . . per cwt.	26 0	26 3	24 6	21 9
Free cubes . . . . . "	40 0	44 0	34 0	38 0
Cutch . . . . . "	25 0	26 0	20 6	21 0
WOOD, DYE, Bar . . . . . per ton	£5 0	£0 0	£3 7/6	£3 10
Brazil, Branch . . . . . "	18 0	27 0	27 0	30 0
" Logs . . . . . "	9 0	16 0	9 0	16 0
Cann . . . . . "	33 0	39 0	15 0	28 0
Fistic, Cuba . . . . . "	8 10	9 1		



CORRESPONDENTS will please observe that the Editor cannot undertake to send private replies to the class of queries which are answered in this page. He will be much obliged if readers will communicate items for this department as well as draw from it. All communications should give (in confidence) the name and address of the writer, though any *nom de plume* may be adopted. No query can be attended to in the current month which reaches this office after the 10th.

*J. F.*—We should suppose the hyposulphite of soda is referred to, but as you do not tell us what is the purpose for which the solution is to be used, we find it difficult to answer your inquiry definitely.

*T. W. P.*—There is no law whatever to prevent your preparing and offering for sale secret medicines. All you must take care of is that you affix the proper stamps and infringe nobody's trade mark.

*R. S.*—You can remove spots of oil from paper, if recent, by placing the spot between two layers of finely-powdered pipe-clay, placing a sheet of paper over the whole, and passing over it once or twice a hot iron.

*M. G.*—We cut the following recipes for stains for woods from a foreign contemporary:—*A Green Stain.*—Take 3 pints strong vinegar, 4 ounces best verdigris, ground fine,  $\frac{1}{2}$  ounce sap green; thoroughly mix these ingredients. *A Purple Stain.*—Take 1 pound of clipped logwood, 3 quarts water, 4 ounces pearlsh and 1 ounce powdered indigo; boil the logwood in the water for half an hour, then add the pearlsh and indigo. *A Cherry Stain.*—Take 3 quarts rain water, 4 ounces annatto; boil in copper kettle till the annatto is dissolved, then put in a piece of potash of the size of a walnut; keep the mixture over the fire half an hour longer, and then it may be bottled for use. *A Mahogany Stain.*—Wash the wood with diluted nitric acid (ten parts of water to one part of nitric acid); for rosewood, glaze the same with carmine or Munich lake. Asphaltum, thinned with turpentine, forms an excellent mahogany colour. *A Blue Stain.*—Dissolve copper filings in aquafortis; brush the wood with it, and then go over the work with a hot solution of pearlsh (2 ounces to 1 pint of water) till it assumes a perfectly blue colour.

*Chemist's Assistant.*—We have no objection to give you a little space for the ventilation of your grievances if you will take the trouble to favour us with your views in a readable form. Nobody requires you "to go to the Square for twelve months." We may take this opportunity of saying that amid the many criticisms of the conduct of the "Bloomsbury Examiners" which we receive, we have not yet been able to get at anything approaching a tangible case of unfair treatment on their part.

*Day* asks: Can any of your readers furnish me with a recipe for Soap Bark Lotion for the teeth, and a cherry tooth-paste?

*J. J.* asks for the best method for pressing the marc of tinctures made with fine powders.

*L. W. B.*—You will find some good formulæ for glycerine cream in our "Notes and Queries" column for August.

*J. C. T.*—We are sorry to seem disobliging, but we hardly see reason enough for the notice you desire.

*Obligation.*—We presume the hypothetical individual you refer to has passed only the "first" examination of the Apothecaries' Hall. In that case he is not an apothecary, and of course cannot carry on the business of a chemist and druggist. If he is a qualified apothecary he may carry on business as such, special provision being made in the Pharmacy Act that nothing therein contained shall affect such a business.

*J. A. T.*—We think you will find the fumigation of the linen by sulphur will remove the mildew. In order to incorporate the rose water in cold cream, it is important that the melted wax, &c., should be poured into a mortar previously warmed, that the rose water (also warm) should be added very gradually, and finally that the stirring should be thorough and continuous.

*J. T.*—The sale of spruce beer is among the exemptions in the Act defining excise licenses for the sale of intoxicating beverages. Williams' "Veterinary Surgery" and "Veterinary Medicine" are the latest, and, in some respects, the best treatise on the practice. Gamgee's "Veterinarian's Vade Mecum" and Blaine's "Veterinary Art" are both useful and practical works.

*Our Diary.*—We have to acknowledge quite a number of kind words in reference to this work. The following are specimens of the opinions expressed:—

"This is the nicest and completest article I have seen for a long time."  
"It is a very useful and necessary companion to the office, and a marked improvement on your 1874 diary."

It is a really useful and good thing of its kind. I have not been in the habit of using a diary, but intend making best use of this.

It appears to be a most useful companion for the desk, containing much practical information, which will be thoroughly appreciated by business men.

*J. W. S.*—Diamond Cement is thus made:—1 shilling, 2 ozs.; dissolve in a little proof spirit as will suffice to make a thick liquid, add ten grains of gum ammoniac in tears, rubbing them together, and lastly the same quantity of mastic previously dissolved in a little rectified spirit. Palm oil, and sometimes annatto, is employed for yellowing oils or pomades.

*R. F. D.*—The best work on analysis, quantitative and qualitative, is that of Fresenius, published in English by Churchill, 2 vols., 12s. 6d. each. To students desirous of obtaining a practical acquaintance with the art, we recommend Dr. Thorpe's "Qualitative Analysis," published by Longmans 3s. 6d.

*Silicon* asks what work is an especial authority on the analysis of enamels. The information from any practical reader will be esteemed.

*T. K.*—The only method of getting rid of fusel oil in spirit of wine is to re-distil the spirit over pearlsh or carbonate of potash, carefully avoiding carrying the process too far.

*Observer.*—There has not yet appeared a thorough manual treating comprehensively the methods of detecting adulteration of food and drugs in English. We reviewed in our September number an excellent work of this character in French, entitled "Falsifications," by Dr. Soubeiran. You could get this through Baillière & Co., King William Street, Strand. There is a small book by Dr. Acherley (published by Isbister & Co.) on "Adulteration of Food," but it is not up to the mark of modern science. Any optician will supply you with a good microscope for your purpose. We cannot recommend one in preference to another. We believe Messrs. Evans & Leseher supply a very useful instrument, which they call the Pharmacy Microscope. The appointment of "Chemist to the Queen" is not, we imagine, very easy to get. We believe the official who superintends such appointments holds the honourable title of Controller of the Board of Green Cloth, or something like that.

*Query.*—The operation of the Pharmacy Act does not extend to the Isle of Man.

*W. G. G.*—Can any reader recommend a work giving the commercial as well as chemical names of the chemicals used in a colour, manufactory and drysalters' business; their general properties and simple tests, suitable for a person who has no theoretical knowledge of chemistry. Also particulars of any work or official report on "The Yellowstone Region in North America."

*Fruit Syrups.*—A correspondent of the *Druggists' Circular* (New York) gives the following formula for fruit syrups "that will not ferment":—

Pure Fruit Juice	.. .. .	16 fl. ounces.
Diluted Acetic Acid	.. .. .	1 fl. ounce.
Water	.. .. .	7 fl. ounces.
Granulated Sugar	.. .. .	3 pounds.

Mix, and agitate frequently for several days, until the sugar is dissolved using no heat. Keep in air-tight vessels, and in a cool cellar.

#### Coloured Inks.

The *Boston Journal of Chemistry* gives the following recipes for producing the above, preferable to the solutions of aniline dyes which are now so extensively used as coloured inks:—

*Green.*—Two parts acetate of copper, one part carbonate of potash, and eight parts water. Boil till half is evaporated, and filter.

*Blue.*—Three parts Prussian blue, one part oxalic acid, and thirty parts of water. When dissolved add one part of gum arabic.

*Yellow.*—One part fine orpiment, well rubbed up with four parts thick gum-water.

*Red.*—With the aid of a gentle heat, dissolve four grains of carmine in one ounce of aqua ammonia, and add six grains of gum arabic.

*Gold.*—Rub gold-leaf, such as is used by book-binders, with honey, till it forms a uniform mixture. When the honey has been washed out with water, the gold powder will settle at the bottom, and must be mixed with gum water in sufficient quantity.

*Silver.*—Silver-leaf treated in precisely the same manner gives a silver ink. Both these inks may, when dry, be polished with ivory.

*Black.*—Three ounces crushed gall-nuts, two ounces crystallised sulphate of iron, two ounces gum arabic, and twenty-four ounces water.

*White.*—Blue French zinc-white, or white lead, rubbed up with gum-water to the proper consistency.

*G. H.*—*Imitation of Tortoise-Shell.*—The appearance of tortoise-shell may be given to horn by brushing it over with a paste made of two parts of lime, one part litharge, and a little soap-lye, which is allowed to dry. This is the same as the Indian hair-dye, and acts by forming sulphuret of lead with the sulphur contained in the albumen of the horn, producing dark spots, which contrast with the brighter colour of the horn.

