THE BRADFORD MEETING OF THE BRITISH PHARMACEUTICAL CONFERENCE.

THROUGH the kindness of the Secretary (Professor Attfield) we are enabled to present the programme of scientific papers expected to be read at the Bradford meeting which commences to-morrow. After the committee's report and other preliminary business the president, Mr. H. B. Brady, will deliver his address. Then will follow the following papers:—1. Unusually Large Doses in Prescriptions, should they be Distinguished by Signs, and by what Signs?—Mr. H. Hampson, Mr. H. Whitfield. 2. Urinary Examinations in General, and the Tests for Albumen and Sugar in Particular—Mr. L. Siebold. 3. Amount of Calcic Oxalate Excreted in Oxaluria—Professor Attfield. 4. Composition of the Air of Sewers and Drains—J. J. Nicholson, F.C.S. 5. Commercial Sulphate of Copper—W. W. Stoddart, F.C.S. 6. Ammoniacal Salts and their Usual Impurities—Alfred Payne, F.C.S. 7. Pharmaceutical Notes.—The Preliminary Examination.—The Medical Profession.—Pharmaceutical Titles—Mr. S. R. Atkins. 8. Absence of Morphia in the Petals of *Papaver rheas*—Professor Attfield. 9. Further Experiments on Nepaul Aconite and on the Characteristics of the Aconitines—Thomas B. Groves, F.C.S. 10. A New Test for Morphia—Mr. L. Siebold. 11. New Derivatives from Morphine and Codeine—Professor C. R. A. Wright, D.Sc. 12. On the Essential Oil of Orange—Professor C. R. A. Wright, D.Sc. 13. On the Essential Oil of Nutmegs—Professor C. R. A. Wright, D.Sc. 14. Report on the Purity of Commercial Specimens of Official Acids—Mr. L. Siebold. 15. The Bearings of Alchemy on Pharmacy—Mr. W. D. Savage. 16. Note on the Presence of Bromine, Iodine and Silver in Sea Water—Mr. G. A. Keyworth. 17. Detection of the Adulterations of Tea—Alfred H. Allen, F.C.S.

DISPENSERS, ARMY HOSPITAL CORPS.

"A DECEIVED ONE," having replied to an advertisement headed as above, thus relates his experience:—Thinking it a good opportunity for improving my position, I resolved to apply personally at Whitehall Yard, and find out what were the duties, etc. In the course of the following week, I carried out my intention, and, upon entering, was received by the sergeant, who, when informed of my business, told me that the staff officer was not at the office, but that he would give me all necessary information. I was told that I should be required to enlist for a term of twenty-one years, do the drilling, and perform all the duties of a common private, and also be required as well to attend in the hospital, and perform the duties of a kind of assistant-surgeon in the way of attending to any accident, not of a serious kind, that might be brought in; after having been in that way engaged for a time, I should have to undergo an examination on bandaging, strapping up wounds, etc., and if found competent would then be allowed to enter on the duty that, from the advertisements, anyone would think they had solely to perform, viz., "dispensing," and moreover I should then have to wait my chance of being promoted in the ranks by degrees before I attained the rank of sergeant, and then get the pay of £60 a year. This, I was given to understand, was the German mode of selecting dispensers, which was found of so much service in the late Franco-German war.

BETWEEN SCYLLA AND CHARYBDIS.

MR. BOORD, distiller, the recently elected M.P. for Greenwich, was reported to have expressed himself very heartily in opposition to the Civil Service Trading Stores. He said "he had a very strong opinion on this subject, and would support an inquiry by a Parliamentary Committee. That it is evident that Government *employés* are not sufficiently employed; or that they neglect their public duties to attend to gigantic trading operations, in either of which cases they should be paid less, or do more for their salaries." That was manly and straightforward. The *Civilian*, however, one of the organs of the Service, hurt by this simple language, interviewed the honourable gentleman, and is "pleased to state that he entirely repudiates everything that is offensive or objectionable in the above terms. He certainly thinks that a *primâ facie* case has been made out for inquiry into the Co-operative Societies, but he never insinuated that Civil servants neglected their duties, and he is far from considering that their salaries are excessive. In fact, we can assure our readers that the Service will have in Mr. Boord a friend, and not an enemy." Mr. Boord's amiable desire to please all parties is creditable to the sweetness of his disposition; but statesmen should be made of sterner stuff.

IMPRISONMENT FOR DEBT.

A SELECT Committee of the House of Commons was appointed last session to inquire into the subject of imprisonment for debt by County Court judges. The conclusion recommended by this Committee amounts to this, that upon the hearing of any judgment summons, the judge should inquire whether there are any other debts, and the debtor should be required to deliver a full and true account of all the debts due from him, and of his means of payment. The judge is then to make such an order as to execution as shall be fair to all the creditors. If this power be given, the Committee recommend the abolition of imprisonment for debt.

We sincerely trust the recommendation of the Committee will not be followed. The fear of imprisonment, quite as much as the imprisonment itself, is the one last deterrent influence which creditors have to trust to. It is the judge's place to see that only dishonest debtors receive this punishment. An order for imprisonment is now only made when it is shown that a debtor has means to pay and will not. Where is the injustice? The theory of those who advocate the total abolition of imprisonment for debt is, that with that power in their hands tradesmen give credit without sufficient caution or inquiry. Suppose this is so, what justification can that possibly be for a man who owes a debt, can pay it, and will not?

CHARLES MAW.

EARLY in the present century, one George Maw, then a farmer in Lincolnshire, cultivating his own land and prospering fairly, if not abundantly, took the extraordinary resolution of selling his property, leaving behind him the connections of his life, and removing with his family to the metropolis. He there embarked in a business of which he could have known next to nothing, and which had no sort of relation to his previous occupations. It would be sufficiently remarkable if a middle-aged Lincolnshire farmer were to take such a step in these days; but in 1807, when George Maw ventured out to seek his fortune, there were no railroads, and the journey to London even was a bold enterprise of itself. We cannot tell what special reasons may have caused this movement, nor what temptations may have been held out to him; but we find that on arriving in London, he joined his fortunes to those of a cousin named Hornby, and that for seven years these two carried on the business of wholesale druggists in Fenchurch-street under the style of Hornby and Maw. The partnership does not seem to have been satisfactory, and in 1814 Mr. Maw separated himself from Mr. Hornby, and purchased a business in Whitecross-street, which was then being carried on by a Mrs. Lowe, a widow. The departed Mr. Lowe had established himself as a maker of surgical plasters, and this was perhaps, the only manufactory of the kind in England. One of the most important specialities connected with this business was Sandwell's Issue Plasters, the labels of which still bear the name of Lowe.

This, then, was the first foundation of the druggists' sundries business. George Maw was evidently a man of considerable foresight, and soon after commencing the manufacture of surgical plasters, he seems to have conceived the scheme of developing it in the omniverous direction which druggists' sundries have since taken. He placed his eldest son, John Hornby Maw, born 1800, with a chemist at Croydon for about two years, in order to give him an insight into the trade requirements. Having made such observations as he needed, J. H. Maw came back to London and assisted his father. But soon after it was found expedient to add the manufacture of surgeons' instruments to the business, and the young pioneer again went forth to discover such technicalities as it was necessary to know. He entered at St. Bartholomew's Hospital, and studied under Abernethy and Stanley. In 1826 he was made a partner in the now prosperous business, and at the same time Messrs. George Maw and Son removed to larger premises in Aldermanbury. Two years later (1828), George Maw retired, and his second son Solomon, born 1805, joined his brother, the business being then carried on under the style of J. and S. Maw. This new change was signalised by another removal of the firm to their present position in Aldersgate-street.

Under the joint management of the brothers the business continued to grow considerably. In 1837, J. H. Maw retired. We may mention *en passant*, that this gentleman is still living. He resides at Broseley, Salop, near his two sons, the manufacturers of the well-known Maw's Encaustic Tiles.

J. H. Maw and Solomon Maw married sisters, the only daughters of John Johnson, assayer to the Mint, Bank of England, etc., of Maiden-lane, or as it is now called Gresham-street, City. One brother of these ladies, was the late Percival N. Johnson, F.R.S., founder of the firm of Johnson, Matthey, and Co., of Hatton Garden, and another was the late G. R. Johnson, who succeeded to the business established by his father, and now carried on as Johnson and Sons, in Basinghall-street.

Our brief sketch of the history of Maw's house has now arrived at the period when its title is familiar to all our readers. The reputation and position achieved by Solomon Maw were remarkable in the annals of our trade, and it will be admitted by everybody that this house not only established itself, but also originally founded the "druggists' sundries" business itself. The almost universal manner of designating that class of business in those days was to refer to it as "Maw's trade." This shows how old George Maw's idea, as indicated when he sent his son to the Croydon chemist, had developed and expanded.

It was during Mr. Solomon Maw's proprietorship that travellers were first sent out by this house. We believe the first thus employed was Mr. Robert Pegg, well-known in many parts of England as "Walking-Pegg," on account of his pedestrian tastes. Pegg walked the greater part of all his journies, sending his samples and luggage on by coach or rail. He travelled for the firm until his death a few years ago.

About the year 1844, Mr. S. Maw received into partnership a gentleman named Stevenson, who, however, died a few months afterwards. The next change was in 1860, when Mr. Charles Maw, who had previously assisted his father in the business, was made a partner, and the firm became known as S. Maw and Son. One year after this, in February, 1861, the senior partner (Mr. Solomon Maw) died, leaving two sons—viz., his partner, Charles Maw, and a younger brother, Mowbray Percival John Maw, who had been destined to join the firm, but who died, however, before entering the business, thus leaving Mr. Charles Maw the sole proprietor. This gentleman, whose portrait we have now the pleasure to present, was born in 1835, and was under twenty-six when he found himself at the head of this important concern. Just then was commencing a lively time in the druggists' sundries line. Morgan Brothers had lately entered the field and by bold and abundant advertising had stolen a march on their competitors, and were running their specialities merrily throughout the British Empire. Mather had "struck ile" in Manchester in the plaster line, and with true Northern vigour was pushing his advantage,—had advanced on the metropolis, and placed his standard in the heart of the city. Other and older firms, such as Tomlinson, and Bourne and Taylor, came up to join in the contest, and it remained for Maw's firm to choose between the maintenance of old-fashioned traditions of respectable solemnity or vigorous active participation in the "new movement."

Mr. Maw wisely preferred to join the side of energy; and, with the able assistance of his chief manager, Mr. Thompson, a spirit of enterprise was thrown into the business which had not been approached in all its past history. In every direction capital was invested profusely, good men were well paid, new departments were opened, the system of business was thoroughly re-organized, and the abundant resources of the firm were employed in extending its efficiency and its relations. The result has been remarkable. In twelve years the annual amount of business transacted has been more than quadrupled; the *employés* of the firm now number hundreds instead of scores; orders are executed in days instead of weeks; new designs are continually being introduced, and the wants of the whole pharmaceutical world are provided for in this establishment with the regularity and smoothness which is always the result of true business organization.

The last change in the firm was the admission of Mr. John Thompson into partnership in January, 1870. Mr. Thompson had been actively engaged in the house for the

The Chemist and Druggist Portrait Gallery.

Yours truly
Charles Adam

previous twenty years, and doubtless the prosperity we have spoken of is largely due to his able assistance. The resulting partnership association is honourable alike to both members of the firm.

A striking instance of Mr. Maw's characteristic promptitude and energy was shown on the occasion of the large fire which totally destroyed the premises in December, 1856. Mr. Solomon Maw was away in the North of England, and Mr. Charles Maw, then of the mature age of twenty-one, was in charge of the business. He happened to be sleeping on the premises that night, and only just escaped a similar fate to that of the building. The fire occurred on the night of December 16; by ten o'clock next morning large temporary premises had been engaged in Little Britain, and by the 1st of January, 1857, the whole business was in full working order, although lathes, tools, etc., had all been destroyed in the fire, and had to be replaced. The premises were re-built under Mr. Charles Maw's supervision, Mr. H. B. Garling being the architect.

In the vigorous prosecution of their business Messrs. S. Maw, Son, and Thompson may fairly lay claim to the motto of the Apothecaries' Company, "Opiferque per orbem dicor." From end to end of the world their catalogue and costly book of illustrations of surgical instruments and druggists' sundries have been presented to the trade, while of late years Mr. Thompson has made frequent voyages to the United States, and one to Australia and New Zealand, with commercial objects. People often complain that it is far harder to get on now than in former days; the facts we have narrated seem to indicate that there never was a time when intelligent enterprise was so good an investment.

After what we have said, we may give just a word or two to this new development of our age,—the druggists' sundries business. There has been, no doubt, more enterprise shown in this line than by any other class of purveyors to chemists and druggists. It would be difficult to convey to an entire outsider anything like an adequate idea of the attention required in the conduct of such a business. But a druggist can form a fair notion. First of all a continual succession of useful inventions is necessary. Again a very peculiar faculty of discrimination and sound judgment is required to select the valuable—or rather, the saleable—and reject the rubbish from the novelties which are daily being introduced. Then, in these days of strikes, there are a thousand difficulties to be expected from the numerous varieties of skilled workpeople which it is necessary to employ, and a thousand and one from the customer's reasonable and unreasonable complaints. Let any reader call to mind some of the circumstances which have plunged him into a correspondence with his sundries house at various times, and then let him multiply himself by a good many thousands, and he will have some idea of the daily difficulties which must concentrate in a large business of that kind.

The number of departments into which Messrs. Maw's business is necessarily divided is somewhat bewildering. Every inch of space is made available, and the establishment has the veritable air of a bee-hive.

From the basement to the highest floor are to be found crowds of assistants in all sorts of occupations. There are the show-rooms, the counting-houses, the packing departments, the bottle stores, the instrument stock rooms, the sponge rooms, truss and bandage-making rooms—rooms where girls are employed all day long in fitting together the various parts and boxing feeding bottles, and numbers of other rooms for other departments of the business. Besides this large establishment, Messrs. S. Maw, Son, and Thompson, have a large steam factory higher up Aldersgate-street, where nearly a hundred skilled workmen are regularly employed at lathe-work. Here are made those beautifully-finished enemas, magnetic apparatus, syringes, pill machines, etc., for which the house is famous; and the valves and tops of feeding-bottles are also turned here. Several of the men in this workshop have been in the service of the firm over a quarter of a century, and one has been with them for fifty-four years. In addition to all these there are large numbers of out-door workpeople who are exclusively employed by Messrs. Maw, and still others who work for them partially. This sketch will, perhaps, indicate to some extent how important a branch of business the druggists' sundries trade has become.

Mr. Charles Maw was married in 1860 to the eldest daughter of the late Rev. W. H. Trentham, head master of Retford Grammar School.

The cares of a large family and of a large business rest lightly on him, and young and full of vigour and business capacity, the chemists and druggists of Great Britain may look to Mr. Maw as an influential and able representative when one is wanted. Whenever occasion has offered, he has invariably shown hearty sympathy with the trade, and notably we may mention a few years ago, when his firm chivalrously refused to supply their goods to the co-operative stores, a course which entitles him to general gratitude.

The curious hieroglyphic which appears under the portrait, and which might fairly puzzle the most expert prescription reader in our ranks, is Mr. Maw's signature for his firm. Resembling in its zig-zag course a flash of forked lightning, it is difficult to trace the words "S. Maw, Son, and Thompson" in its tortuous windings; but no one will question its ornamental character at the foot of a large cheque.

SPECIAL EDUCATIONAL INFORMATION.

In accordance with our usual custom we devote a few pages this month to a summary of the requirements and means of such special medical, pharmaceutical, and technical education, as certain of our readers may desire to be acquainted with. The schools generally commence their sessions at the beginning of October. We direct attention to the announcements of these, which are grouped together in our advertising pages, but in addition we beg to offer a brief summary in this place. First of all, however, it may be desirable to present, as briefly as possible, the legal requirements of the bodies in whose hands are the registration of diplomas.

Medical Diplomas.

The General Medical Council fixes twenty-one as the earliest age at which a candidate for any professional licence shall be admitted to his final examination, the age in all instances to be duly certified. Previous to this final examination, he must have been registered as a medical student at least forty-eight months, and must have gone through a course of professional study, comprehending attendance during four winter sessions or three winter and two summer sessions at a recognised school. The Medical Council also makes certain claims with regard to the examinations themselves. With regard to the Preliminary, which must be passed before a medical student may be registered as such, it is required that it shall include English language (including Grammar and Composition), Arithmetic (including Vulgar and Decimal Fractions), Algebra (including Simple Equations), Geometry (first two books of Euclid), Latin (including Translation and Grammar); and one of the following optional subjects: Greek, French, German, Natural Philosophy (including Mechanics, Hydrostatics, and Pneumatics).

For the Professional Examination it requires, "That the

Professional Examination for a licence be divided into two parts ; the first embracing the primary or fundamental branches directly connected with the practice of medicine or surgery. That the former be not undergone till after the close of the winter session of the second year of professional study ; and the latter, or final examination, not until after the close of the prescribed period of professional study.

"That the examination in Physics, Botany, and Natural History, may be undergone at an earlier period than the first Professional Examination.

"That the Professional Examinations be conducted both in writing and orally, and that they be practical in all branches in which they admit of being so.

"That excellence in one or more subjects should not be allowed to compensate for failure in others ; and that if a candidate be rejected for failure in any one subject, he should be re-examined in all."

The foregoing are the requirements of the General Medical Council which holds, and can withhold, the right of registration. The reader will bear in mind that these stipulations have to be observed by all the examining bodies, and this will save us much repetition.

The examining bodies themselves are the following :—

The University of Oxford, which grants the degrees of **M.B.** and **M.D.** The medical student must pass the requisite examinations for the degree of B.A., and afterwards spend two years in study prior to the first or scientific examination for the degree of Bachelor of Medicine, and two years more prior to the final or practical examination for the same degree. Evidence must be brought to show that he has studied the practical parts of his profession in a first-class hospital. A dissertation has to be publicly read three years after the M.B., for the degree of M.D.

The University of Cambridge, besides **M.B.** and **M.D.**, grants the degree of **M.C.** (Master in Surgery). For M.B. five years of medical study are required, except in the case of medical students who have graduated with honours as Bachelors of Arts, four years being then sufficient. There are three examinations. The *first* in Mechanics and Hydrostatics, Chemistry (with heat and electricity), and Botany. The *second*, in Anatomy and Physiology (Human and Comparative), and Pharmacology. The *third* (at the conclusion of medical study), in Pathology and the Practice of Physic, Clinical Medicine, and Medical Jurisprudence. The examinations are partly in writing and partly oral, in the hospital, and take place twice annually. Previously to the first examination, lectures must have been attended on Chemistry (with manipulations) and Botany. Previously to the second examination, the student must have attended lectures on Anatomy and Physiology (Human and Comparative), Materia Medica, Pharmacy, and Pathology ; have dissected one season ; and attended hospital practice one year. Previously to the third examination, lectures must have been attended on the Principles and Practice of Physic, Clinical Medicine, and Medical Jurisprudence ; also Hospital Practice for three years.

The degree of M.D. may be taken three years after M.B. The regulations are similar to those at Oxford.

For the degree of M.C., the candidate must have passed the three examinations for M.B., and have attended lectures on Human Anatomy (a second course), on the Principles and Practice of Surgery, Clinical Surgery, Midwifery (with ten cases) ; also a second season of Dissections, three years' surgical practice at a recognised hospital, and a house-surgeoncy or dressership for six months. He is then required to pass an examination in Surgical Anatomy, Pathology, the Principles and Practice of Surgery, and Clinical Surgery.

The University of London stipulates for the **M.B.** degree. (1) The Matriculation Examination, or a degree of Arts, is accepted from the Universities of either Sydney, Melbourne, or Calcutta. (2) The Preliminary Scientific Examination and two examinations in medicines. The student must also have been engaged in professional studies at least four years subsequent to matriculation. The degree of **M.D.** may be competed for four years, or in some cases, five years after the M.B. degree has been taken. It includes logic and moral philosophy and medicine, including practical examination in clinical medicine. The University of London also grants the degrees of **B.S.** and **M.S.** (Bachelor and Master in Surgery). These comprehend the M.B.

The University of Durham grants a licence in medicine four years after matriculation, **M.B.** three years later, and **M.D.** one year later still, provided that the requisite courses are fulfilled and examinations passed. *Licentiates* and *Masters in Surgery* are also degrees granted by this University. These do not necessarily require that all the examinations for M.B. shall be passed.

The University of Edinburgh confers the degrees of **M.B.**, **C.M.**, and **M.D.** The first must be passed before either of the others are granted. For the M.B. and C.M. degrees a course of four years, at least, of medical and surgical study is required, and each candidate is examined both in writing and *viva voce*—1st, on Chemistry, Botany, and Natural History ; 2nd, on Anatomy, Institutes of Medicine, Materia Medica, including Practical Pharmacy and Pathology ; 3rd, on Surgery, Practice of Medicine, Midwifery, and Medical Jurisprudence ; 4th, clinically on Medicine and on Surgery in a hospital. For the M.D. degree two years of medical and surgical practice must elapse, the candidate must be a graduate in Arts, and must submit a thesis composed by himself on any branch of knowledge comprised in the professional examinations for the M.B. degree.

The University of Glasgow grants the same degrees, and provides curricula and examinations similar to those of the University of Edinburgh.

The same may be said of the **University of Aberdeen.**

Also of the **University of St. Andrew's** ; except that by the latter the degree of Doctor in Medicine may be conferred on any registered medical practitioner above the age of forty years whose professional position and experience are such as, in the estimation of the University, to entitle him to that degree, and who shall, on examination, satisfy the medical examiners of the sufficiency of his professional knowledge ; provided always, that degrees shall not be conferred, under this section, to a greater number than ten in any one year.

The University of Dublin (Trinity College) grants the degrees of **M.B.**, **M.D.**, and **M. Ch.**, and also licences in medicine (**L.M.**) and surgery (**L.S.**). To take the degree of M.B. it is required that the candidate shall also take that of B.A., and shall have attended hospital and lectures for four years. The M.D. degree is granted to an M.B. of three years' standing, who must perform exercises before the Regius Professor of Physic. The degree of M.Ch. demands a curriculum somewhat different from, though of the same length of time, as that required for the M.B. examination. A licentiate in medicine or surgery has passed the medical course and examinations required for M.B. or M.Ch. respectively, but the fees are somewhat lower. He can, however, afterwards take up his degree.

The Queen's University of Ireland comprises the Queen's Colleges of Belfast, Cork, and Galway, each of which possesses a Faculty of Medicine. The degrees of **M.D.** and **M.Ch.** are granted by this University. The curriculum for either extends over four years, and comprehends the usual subjects.

Besides the foregoing Universities, the following Corporations grant licences to practise :—

The Royal College of Physicians, London. There are Licentiates, Members, and Fellows of the Royal College of Physicians, London. The licentiates have passed a Preliminary Examination in Arts, and two other professional examinations, besides giving evidence of at least four years of professional education as a registered medical student. The fee is fifteen guineas. The course of study previous to the examination for membership is almost similar to that prescribed for the licentiates. Members may also be admitted, after a certain examination, who have taken the degree of M.B. at other universities. The fee is thirty guineas. The members of the College are eligible for Fellowship.

The Royal College of Surgeons of England. To become a member the following course is prescribed. Preliminary Examination. The following are the subjects for 1871 and 1872 :—

Part (1.)—Compulsory Subjects :—1. Reading aloud a passage from some English author. 2. Writing from dictation. 3. English Grammar. 4. Writing a short

English composition; such as a description of place, an account of some useful or natural product, or the like. 5. Arithmetic. No candidate will be passed who does not show a competent knowledge of the first four rules, simple and compound, of Vulgar Fractions, and of Decimals. 6. Questions on the Geography of Europe, and particularly of the British Isles. 7. Questions on the outlines of English History—that is, the succession of the Sovereigns and the leading events of each reign. 8. Mathematics:—Euclid, Books I. and II., or the subjects thereof; Algebra to Simple Equations inclusive. 9. Translation of a passage from the second book of Cæsar's Commentaries, "De Bello Gallico." Part (2.)—Optional Subjects:—Papers will also be set on the following six subjects, and each candidate will be required to offer himself for examination on one subject at least, at his option; but no candidate will be allowed to offer himself for examination on more than four subjects:—1. Translation of a passage from the First Book of the Anabasis of Xenophon. 2. Translation of a passage from X. B. Saintine's "Picciola." 3. Translation of a passage from Schiller's "Wilhelm Tell." Besides these translations into English, the candidate will be required to answer questions on the grammar of each subject, whether compulsory or optional. 4. Mechanics. The questions will be chiefly of an elementary character. 5. Chemistry. The questions will be on the elementary facts of Chemistry. 6. Botany and Zoology. The questions will be on the classification of Plants and Animals. The quality of the handwriting and the spelling will be taken into account. Certain certificates, as for instance, that of the Middle Class Examinations (Senior), are accepted in lieu of this examination, provided such include Latin and Mathematics. The Professional Education must comprise four years of study subsequent to the preliminary examination, and include certain attendances at Lectures and Hospital Practice. The fee is £22, besides £2 for the preliminary examination. For Fellowship the curriculum is longer, the examinations more severe, and the fees higher. Or a member of eight years' standing may offer himself for the final examination for the Fellowship. The Royal College of Surgeons also grants certificates of qualification in midwifery and in dental surgery.

The Royal College of Physicians, Edinburgh, grants licences in medicine. The fee here is ten guineas. The curriculum is very similar to that which has been described. Any licentiate of a College of Physicians, or graduate of a British or Irish University, with whose knowledge of medical and general science the College may be satisfied, may be admitted a member of the College, provided he shall have attained the age of twenty-four years. The fee to be paid by a member is £31 10s. When a licentiate is raised to the rank of member he pays £21. When a member is raised to the rank of fellow the fee is £31 10s., exclusive of stamp duty, which amounts to £25

The Royal College of Surgeons, Edinburgh, also grants diplomas of membership. The fee here for the professional examinations amounts to £10.

The Royal College of Physicians of Edinburgh, and the Royal College of Surgeons of Edinburgh, while they still continue to give their diplomas separately, under separate regulations, have made arrangements by which, after one series of examinations, the student may obtain the diplomas of both colleges. The general principle of this joint examination is, that it shall be conducted by a board in which each body is represented in those branches which are common to both medicine and surgery; but that the College of Physicians shall take exclusive charge of the examination in medicine, and the College of Surgeons of the examination in surgery. The object of the joint examination is, to give to students facilities for obtaining from two separate bodies, and at less expense, a qualification in medicine, and a qualification in surgery. Students passing that examination successfully will be enabled to register two qualifications under the Medical Act—Licentiate of the Royal College of Physicians of Edinburgh, and Licentiate of the Royal College of Surgeons of Edinburgh.

The Faculty of Physicians and Surgeons of Glasgow also grant a diploma. The candidates follow a curriculum, similar to that of the Edinburgh College of Surgeons. The fee for the preliminary examination is 10s., and for the professional examinations £10. In connection with the Royal College of Physicians of Edinburgh a double diploma is also granted. The fee for this, as for the similar double diploma in Edinburgh (professional examinations only), is £16.

The King and Queen's College of Physicians in Ireland grants a licence in medicine, and also a licence in midwifery. A four-year's course of medical study is required, and a special additional examination for the midwifery qualification. The fee for the licence in medicine, 15 guineas; for the midwifery diploma, 3 guineas; or if both are taken out together, £16.

The Royal College of Surgeons in Ireland grants *Letters Testimonial* and Fellowship. For the former a preliminary examination and the usual medical course is required, the total of the fees being £26 15s. For Fellowship the B.A. or an equivalent examination is demanded as preliminary, and a longer course of study. The fee is £47 5s., if the candidate intends to practise within ten miles of Dublin, or £36 15s. otherwise.

The Society of Apothecaries, London, grants a certificate of qualification to practise as an Apothecary, and requires that the candidate shall produce testimonials of having passed a Preliminary Examination in Arts, as a test of general education. Of having served an apprenticeship or pupilage of not less than five years to a practitioner qualified by the Act of 1815. This period may include the time spent in attending lectures and hospital practice. Of having attained the full age of twenty-one years. Of good moral conduct. And of having pursued a course of medical study in conformity with the regulations of the Court. The course of study includes three winter sessions and two summer sessions. The extent of the examinations is modified towards gentlemen holding the diplomas of other examining bodies. The Society also grants a certificate of qualification to act as an assistant, the examination comprising the following subjects:—In translating physicians' prescriptions in the British Pharmacopœia; in Pharmacy, Pharmaceutical Chemistry, and Materia Medica. *Fees.*—For a certificate of qualification to practise, six guineas, the half to be paid at the first examination; for an assistant's certificate, two guineas.

The Apothecaries' Hall of Ireland. *Professional Education and Examination.*—Every candidate for the licence to practise must produce certificates to the following effect:—1. Of having passed an examination in Arts, previously to entering on professional study. 2. Of being registered as a Student in Medicine. 3. Of being at least twenty-one years of age, and of good moral character. 4. Of apprenticeship to a qualified apothecary, or of having been engaged in Practical Pharmacy with an apothecary for three years subsequently to having passed the examination in Arts. 5. Of having spent four years in professional study. 6. Of having attended the following courses—viz., Chemistry, during one winter session; Anatomy and Physiology, during two winter sessions; Demonstrations and Dissections, during two winter sessions; Botany and Natural History, during one summer session; Practical Pharmacy and Practical Chemistry (in a recognised laboratory), each during three months; Principles and Practice of Medicine, and therapeutics during one winter session; Midwifery and Diseases of Women and Children, during six months; Practical Midwifery at a recognised hospital (attendance upon twenty cases); Surgery, during one winter session; Medical Jurisprudence, during one summer session; instruction in the practice of Vaccination. 7. Of having attended at a recognised hospital or hospitals the Practice of Medicine and Clinical Lectures on Medicine during two winter and two summer sessions; also the Practice of Surgery and Clinical Lectures on Surgery during one winter and one summer session. The examinations are divided into two parts. The first part comprehending Chemistry, Botany, Anatomy, Physiology, and Pharmacy; the second, Medicine, Therapeutics, Surgery, Pathology, Midwifery, Forensic Medicine, and Hygiene.

Candidates for the certificate of Assistant to an Apothecary in Ireland, in compounding and dispensing medicine, are examined in the British Pharmacopœia and in Pharmacy, scientific and practical, including the history, characters, and qualities of medicines, with their preparations and

doses, and in the translation of Latin prescriptions. Neither the Arts' certificate nor the certificate of Apprentice is required for the examination of Assistant.

Pharmaceutical Diplomas.

It is proper to explain here the legal requirements as to pharmaceutical education.

By the Pharmacy Act, 1868, it was enacted that, "from and after the 31st day of December, 1868, it shall be unlawful for any person to sell or keep open shop for retailing, dispensing, or compounding poisons, or to assume or use the title 'Chemist and Druggist,' or Chemist or Druggist, or Pharmacist, or Dispensing Chemist, or Druggist, in any part of Great Britain, unless such person shall be a Pharmaceutical Chemist, or a Chemist and Druggist within the meaning of this Act, and be registered under this Act, and conform to such regulations as to the keeping, dispensing, and selling of such poisons as may from time to time be prescribed by the Pharmaceutical Society with the consent of the Privy Council."

All chemists in business on July 31, 1868, were admitted to the register, and assistants of 21 years of age or upwards, who had been such for at least three years, were admitted to the register by passing a "modified" examination. But for all other persons, and for every person henceforth, it will be necessary to pass the following examinations before being registered, and consequently before being in possession of a legal right to commence business as a chemist and druggist:—

1st. The Preliminary Examination, in which candidates are examined in Latin, English Grammar and Composition, Arithmetic, first four rules, simple and compound, and vulgar and decimal fractions. Fee two guineas.

2nd. The Minor Examination Candidates are examined in the reading and translation of Prescriptions, Practical Dispensing, Pharmacy, Materia Medica, Botany, and Chemistry. Fee three guineas.

Having passed the above, the candidate is registered as a "chemist and druggist." It is then optional whether he will proceed to the

3rd, or Major Examination. In this the same subjects of examination are presented, but a more extensive and scientific acquaintance with them is required. An interval of three months must elapse between the passing of the Minor and Major Examinations. The fee for the latter is five guineas.

Having passed the Major Examination the candidate is registered as a pharmaceutical chemist. Pharmaceutical chemists and chemists and druggists are both eligible for election as "members of the Pharmaceutical Society."

Dental Diplomas.

The Royal College of Surgeons grants a diploma in dental surgery (L.D.S.), which may be taken apart from the Diploma of Member of the College of Surgeons. The preliminary examination is not stipulated for, but candidates must produce Certificates:—

1. Of being twenty-one years of age.
2. Of having been engaged during four years in the acquirement of professional knowledge.
3. Of having attended, at a School or Schools recognised by this College, not less than one of each of the following Courses of Lectures, delivered by Lecturers recognised by this College, namely:—Anatomy, Physiology, Surgery, Medicine, Chemistry, and Materia Medica.
4. Of having attended a second Winter Course of Lectures on Anatomy, or a course of not less than twenty Lectures on the anatomy of the Head and Neck, delivered by Lecturers recognised by this College.
5. Of having performed Dissections at a recognised School during not less than nine months.
6. Of having completed a course of Chemical Manipulation, under the superintendence of a Teacher or Lecturer recognised by this College.
7. Of having attended at a recognised Hospital or Hospitals in the United Kingdom the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.
8. Of having attended at a recognised School two Courses of Lectures upon each of the following subjects, viz.:—Dental Anatomy and Physiology (Human and Comparative), Dental Surgery, Dental Mechanics, and one Course of Lectures on Metallurgy, by Lecturers recognised by this College.
9. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner.
10. Of having attended at a recognised Dental Hospital, or in the Dental department of a recognised general Hospital, the practice of Dental Surgery during the period of two years.

N.B.—The Students of the London Schools are required to register the above Certificates at this College; and special Returns will be required from the Provincial Schools.

Examination.—The examination is partly written and partly oral.

The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with especial reference to the practice of the Dental profession.

The oral practical examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, etc.

Members of the College, in the written examination, will only have to answer those questions set by the Section of the Board, consisting of persons skilled in Dental Surgery; and in the oral examination will be examined only by that Section.

A candidate whose qualifications shall be found insufficient will be referred back to his studies, and will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in January and June.

The fee for the Diploma is ten guineas, over and above any stamp duty.

MEDICAL EDUCATION.

AFTER passing his Preliminary Examination at the College of Surgeons, or the Apothecaries Hall, or producing a certificate of having passed the Oxford, Cambridge or Durham middle-class examinations (senior) if Latin and mathematics have been included, or producing certificates of other examinations recognised by the Medical Council, the student is at liberty to register. He must then pass four years in professional study. Of these four years it is required by the College of Physicians, and College of Surgeons, that at least two and a-half years should have been passed at a hospital medical school. Of course the whole of the four years may have been so occupied, or the other eighteen months may be passed with a qualified medical practitioner who, holding one or more public appointments, can afford him "such opportunities of practical instruction as shall be satisfactory" to the various examining boards. Most of the hospital medical schools have also scholarships attached which are open for competition among students.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—The fee for attendance on lectures and hospital practice, 105 guineas, payable in the following instalments:—First winter, thirty-five guineas; first summer, thirty-five guineas; second winter, thirty-five guineas; or a single payment of 100 guineas. Payment in either of these ways entitles the student to a perpetual ticket.

The following are the lectures at this College:—

LECTURES.

Medicine—Dr. Black and Dr. Andrew. Clinical Medicine—Dr. Black, Dr. Harris, Dr. Andrew, and Dr. Southey. Surgery—Mr. Savory, F.R.S., and Mr. Callender, F.R.S. Clinical Surgery—Sir J. Paget, Bart., D.C.L., F.R.S.; Mr. Holden; Mr. Savory, F.R.S.; Mr. Callender, F.R.S.; Mr. Thomas Smith. Descriptive and Surgical Anatomy—Mr.

Thomas Smith and Mr. Langton. General Anatomy and Physiology—Mr. Morrant Baker. Histology—Dr. Klein. Chemistry and Practical Chemistry—Dr. Russell, F.R.S. Materia Medica—Dr. Farre and Dr. Brunton. Forensic Medicine and Hygiene—Dr. Southey. Midwifery and Diseases of Women and Children—Dr. Greenhalgh. Botany—Rev. George Henslow. Pathological Anatomy—Dr. Gee. Comparative Anatomy—Dr. Church. Ophthalmic Medicine and Surgery—Mr. Power. Dental Anatomy and Surgery—Mr. Coleman. Mental Diseases—Dr. Claye Shaw.

DEMONSTRATIONS.

Morbid Anatomy—Dr. Gee. Diseases of the Skin—Dr. Duckworth. Orthopædic Surgery—Mr. Willett. Diseases of the Ear—Mr. Langton. Diseases of the Eye—Mr. Vernon. Practical Surgery—Mr. Willett. Practical Anatomy and Operative Surgery—Mr. Marsh, Mr. Cumberbatch, and Mr. Furner. Assistant Demonstrators: Mr. Cripps and Mr. Walsham. Mechanical and Natural Philosophy—Dr Hensley. Practical Physiology—Mr. Symons. Medical Registrar—Dr. Hollis. Surgical Registrars—Mr. Symons and Mr. Butlin. Warden—Mr. Morrant Baker.

ST. THOMAS'S HOSPITAL.—Students have the option of paying £40 for the first year, a similar sum for the second, £20 for the third, and £10 for each succeeding year; or, by paying £105 at once, of becoming perpetual students.

Lecturers.—Medicine—Dr. Peacock and Dr. Murchison. Surgery—Mr. Sydney Jones and Dr. MacCormac. General Pathology—Dr. Bristowe. Physiology and Practical Physiology—Dr. Ord and Dr. John Harley. Descriptive Anatomy—Mr. Francis Mason and Mr. W. W. Wagstaffe. Anatomy in the Dissecting Room—Anatomical Lecturers—Mr. Rainey and Dr. R. W. Reid. Practical and Manipulative Surgery—Mr. Croft. Chemistry and Practical Chemistry—Dr. A. J. Bernays. Midwifery—Dr. Barnes. Physics and Natural Philosophy—Dr. Stone. Materia Medica—Dr. Clapton. Forensic Medicine and Hygiene—Dr. Stone and Dr. Gervis. Comparative Anatomy—Mr. C. Stewart. Ophthalmic Surgery—Mr. Liebreich. Botany—Mr. A. W. Bennett. Dental Surgery—Mr. J. W. Elliott. Demonstrations Morbid Anatomy—Dr. Payne. Mental Diseases—Dr. William Rhys Williams. T. B. PEACOCK, M.D., *Dean*; R. G. WHITFIELD, *Medical Secretary*.

THE MIDDLESEX HOSPITAL MEDICAL COLLEGE.—The General Fee for attendance on the Hospital Practice and Lectures required for candidates for the Licence of the College of Physicians, the Diploma of Member of the College of Surgeons, and the Licence of the Society of Apothecaries, amounts to £90 if paid in one sum on entrance. Students who pay this Fee in one sum on entrance may attend for an unlimited time. Principles and Practice of Medicine—Dr. Greenhow, F.R.S. Principles and Practice of Surgery—Mr. de Morgan, F.R.S. Practical Surgery—Mr. Hulke, F.R.S., Mr. Lawson, and Mr. Morris, M.A., M.B., Lond. Physiology and General Anatomy—Mr. Lowne, F.L.S. Descriptive and Surgical Anatomy—Mr. Morris, M.A., M.B. Chemistry—Mr. Heisch. Practical Anatomy—Dr. R. Liveing, M.A., Cantab. Pathological Anatomy—Dr. Cayley and Dr. Murray. Parasitic Diseases—Dr. Cobbold, F.R.S. Clinical Lectures on Medicine and Surgery—the Physicians and Surgeons. Ditto on Diseases of Women and Children—Dr. J. Hall Davis. Ditto on Diseases of the Eye—Mr. Hulke, F.R.S.

THE WESTMINSTER HOSPITAL MEDICAL SCHOOL.—The payment of seventy-eight pounds in one sum gives the student the privilege of *unlimited* attendance on the hospital practice and classes required for the above-mentioned examinations, one course only of practical chemistry. Numerous changes have been made in the School with a view to increase the efficiency of clinical and scientific teaching. Dr. Basham and Mr. Holthouse have been elected Special Lecturers on Clinical Medicine and Clinical Surgery respectively. Occasional Clinical Lectures will also be given by Dr. Radcliffe and Mr. Holt, members of the Consulting Staff. Dr. Anstie, now Physician to the Hospital, occupies the Chair of Medicine. Mr. Pearse and Mr. Cowell, both Surgeons to the Hospital, divide the Chairs of Surgery and Practical Surgery.

The study of Practical Physiology and Histology has been placed under the charge of Dr. Allchin. Mr. Davy has succeeded Mr. Pearse as Lecturer on Anatomy. Dr. Dupré, the Lecturer on Chemistry, has undertaken to teach Toxicology in the Forensic Medicine course, Dr. Potter giving the rest of the Lectures, as also those on Hygiene and Public Medicine. Dr. Allchin has been appointed to give the course on Pathology and Morbid Anatomy, and thus the same lecturer will teach Healthy and Pathological Histology. In addition to the present special courses, Mr. Bond will give a short summer course on Diseases of the Skin; and Dr. Anstie will hold a class for the study of Electrical Therapeutics.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—The following is the staff:—

Consulting Officers—Dr. Chambers, Sir James Alderson, M.D., F.R.S., Dr. Sibson, F.R.S., Mr. Coulson, Mr. Lane, Mr. White Cooper Physicians—Dr. H. Jones, F.R.S., Dr. Sieveking, Dr. Broadbent. Assist.-Physicians—Dr. Cheadle, Dr. Lawson, Dr. Shepherd. Surgeons—Mr. Spencer Smith, Mr. Haynes Walton, Mr. J. R. Lane. Assist.-Surgeons—Mr. Gascoyen, Mr. Norton, Mr. Edmund Owen. Physician-Accoucheur—Dr. Alfred Meadows. Assist.-Physician-Accoucheur—Dr. Wiltshire. Surgeon in charge of the Ophthalmic Department—Mr. Haynes Walton. Aural Surgeon—Mr. Allen. Surgeon-Deutist—Mr. Howard Hayward. Medical Tutor—Dr. J. Reginald Stocker. Other Lecturers Dr. Wright, Dr. Randall, Mr. Mivart, F.R.S., Dr. Trimen.

KING'S COLLEGE HOSPITAL AND MEDICAL SCHOOL.—The fees for the complete medical course may be paid in one sum of £100. Students may enter for any single course. The following are the lecturers:—Anatomy, Descriptive and Surgical—Professor John Curnow, M.D. Physiology—Practical Physiology—Professor William Rutherford, M.D. F.R.S.E.; Demonstrator, Urban Pritchard, M.D. Chemistry—Practical Chemistry—Professor C. L. Bloxam, F.C.S.; Demonstrator, W. N. Hartley, F.C.S.; Assistant Demonstrator, J. M. Thomson, F.C.S. Medicine, Principles and Practice of—Professor George Johnson, M.D., F.R.S. Surgery, Principles and Practice of—Professor John Wood, F.R.S. Clinical Surgery—Professor Sir William Fergusson, Bart., F.R.S. Hygiene—Professor A. W. Guy, M.B. F.R.S. Botany—Professor, Robert Bentley, F.L.S. Materia Medica and Therapeutics—Professor A. B. Garrod, M.D. F.R.S. Obstetric Medicine and the Diseases of Women and Children—Professor W. Playfair, M.D. Forensic Medicine—Professor D. Ferrier, M.A. M.D. Comparative Anatomy—Professor T. Rymer Jones, F.R.S Pathological Anatomy—Professor L. S. Beale, M.B. F.R.S. Dental Surgery—Professor Samuel Cartwright, F.R.C.S. Ophthalmology—Professor J. Soelberg Wells, M.D. F.R.C.S. Psychological Medicine—Professor Edgar Sheppard, M.D. Dean of the Faculty—Professor Bentley, F.L.S.

At the MANCHESTER ROYAL SCHOOL OF MEDICINE the total fee is eighty guineas. The educational staff consists of Principal—J. G. Greenwood, B.A. Director of Medical Studies—George Southam, F.R.C.S.

LECTURERS.

General Anatomy and Physiology—William Smith, F.R.C.S. Practical Physiology and Histology—Arthur Gamgee, M.D., F.R.S. Descriptive Anatomy—Samuel M. Bradley, F.R.C.S. Practical Anatomy—T. Beswick Perrin, M.R.C.S., F.L.S. Comparative Anatomy and Botany—W. C. Williamson, F.R.S. Chemistry—Henry E. Roscoe, B.A., Ph.D., F.R.S. Medicine—William Roberts, M.D., B.A., F.R.C.P. and J. E. Morgan, M.D., M.A., F.R.C.P. Surgery—George Southam, F.R.C.S. and Edward Lund, F.R.C.S. Physiology and Pathology of the Eye—Richard T. Hunt, M.R.C.S. General Pathology—Henry Simpson, M.D., M.R.C.S. Midwifery—John Thorburn, M.D., L.R.C.S. Materia Medica—Alex. Somers, M.R.C.S. Forensic Medicine—G. Morley Harrison, M.R.C.S. Hygiene and Public Health—Arthur Ransome, M.D., M.A., M.R.C.S. Clinical Medicine—The Physicans to the Royal Infirmary. Clinical Surgery—The Surgeons to ditto. Medical Tutor—T. Beswick Perrin, M.R.C.S., F.L.S.

THE BRISTOL MEDICAL SCHOOL provides the following courses of lectures for a perpetual fee of 55 guineas:—

Anatomy—Mr. Board and Mr. Dobson. Physiology—Mr. Atchley and Dr. Spencer. Chemistry—Mr. Coomber. Medicine—Dr. Martyn and Dr. Fox. Surgery—Mr. Coe and Mr. Tibbits.

Dissections are superintended by Messrs. Chute, Lawrence, and Elliott.

Medical and Surgical Hospital Practice and Clinical Lectures are attended at the Royal Infirmary or at the General Hospital.

The following are the lecturers in the **LEEDS SCHOOL OF MEDICINE**:—Anatomy—James Seaton, L.R.C.S., Robert T. Land, M.D., M.R.C.S., and John A. Nunneley, M.B., M.R.C.S. Physiology (including Practical Physiology) C. J. Wright, M.R.C.S., and James Walker, M.R.C.S. Medicine—John D. Heaton, M.D., F.R.C.P., and T. C. Allbutt, M.A., M.D., F.L.S. Pathology—John Edwin Eddison, M.D. Surgery (including the Practical Course)—Claudius G. Wheelhouse, F.R.C.S., T. Pridgin Teale, M.A., F.R.C.S., and T. R. Jessop, F.R.C.S. Mental Diseases—J. Crichton Browne, M.D., F.R.S.E., Chemistry — Thomas Fairley, F.C.S. Materia Medica—John Edwin Eddison, M.D. Midwifery—W. Hall, M.R.C.S. Forensic Medicine—Thomas Scattergood, M.R.C.S. Botany—Edward Atkinson, F.L.S. Comparative Anatomy—C. G. Wheelhouse, F.R.C.S., and T. C. Allbutt, M.A., M.D., F.L.S. Demonstrations of Anatomy—R. P. Oglesby, M.R.C.S., Edmund Robinson, M.R.C.S., and A. F. McGill, M.R.C.S. Honorary Members of Council—William Hey, F.R.C.S., and John Disney Thorp, M P.

The Introductory Addresses at the Medical Schools are to be delivered by Mr. Hinton, at Guy's; at the London Hospital Dr. Prosser James; at St. Thomas's Dr. John Harley; at Charing Cross Mr. Bellamy; at the Westminster Mr. Cowell; at King's College Dr. Sheppard; at University College Dr. Roberts; at St. Mary's Dr. Shepherd; at the Middlesex Mr. Morris.

In the Provinces the following are announced:—Leeds School of Medicine, Mr. Scattergood; Liverpool, Dr. Caton; Sheffield, Mr. Henry Jackson; Queen's College, Birmingham, Prof. Clay; Edinburgh School of Medicine, Dr. George W. Balfour; University of Durham, Dr. Charlton; Manchester, Prof. Gamgee.

THE SCHOOL OF PHARMACY, 17, Bloomsbury-square.

Our readers are familiar with the modifications which have recently been adopted by the Pharmaceutical Council in the management of this school. Still retaining a controlling influence over its arrangements, and appointing the professors annually, the Council cannot be said to have separated itself entirely from the institution, which the society has especially tended for thirty-one sessions. It is, however, now arranged that as a commercial enterprise the school shall be in the hands of the professors entirely, the Council subsidizing each professorship with £100 per annum. Another, and a very important modification is that the courses of lectures will henceforth be completed in half the time heretofore occupied by them. So that a session will now include two complete courses of lectures on Chemistry and Pharmacy, and two on Botany and Materia Medica. The complete laboratory course will occupy ten months as usual, but shorter periods can be taken. The session will commence on October 1, and on the evening of that day an address is to be delivered to students by Mr. G. W. Sandford. The following is a summary of the course of instruction provided:—

Lectures on Chemistry and Pharmacy, by Professor Redwood, Ph.D., F.C.S. These are delivered on Monday, Tuesday, and Wednesday mornings at nine o'clock. The course consists of sixty lectures, comprising an exposition of the leading principles and doctrines of the science of chemistry, and of those branches of allied physical science, the applications of which are involved in the qualifications required for the practice of pharmacy. There will be two of these courses during the session, the course which commences in October and ends in February being repeated in the following five months from the beginning of March to the end of July. The whole of the subjects will thus be expounded twice in ten months. Students who are unable to commence their attendance at the beginning of the session may enter at any time between October and March. Each course will be complete in itself, and will include a description of all the most important chemical and galenical preparations used in medicine, which will be fully illustrated with experiments, diagrams, and specimens; but some of the facts referred to in illustration of principles will not be the same in each of the courses. The professor will thus be enabled to vary the illustrative matter of his lectures, and students attending two courses will have the advantage of a wider range of facts being adduced in explanation of the subjects.

Examinations of the class, both written and *viva voce*, will be conducted by the Professor at frequent intervals, and at the end of each course there will be a competitive examination for the award of prizes which are given by the Council of the Pharmaceutical Society. Certificates will also be given by the Professor to those students who have manifested due diligence at the lectures, and have been regular and punctual in their attendance.

Fees.	£	s.	d.
One Course	2	2	0
An entire Session—Two Courses	3	3	0
Perpetual admission..	4	4	0

Lectures on Botany and Materia Medica. By Professor Bentley, M.R.C.S., Eng., F.L.S. These are delivered on Friday and Saturday mornings, at nine o'clock, during the months of October, November, December, January, and February; and on Thursday, Friday, and Saturday mornings, during March, April, May, June, and July.

During the session extending from the beginning of October to the end of July three courses of lectures will be delivered. Two on Botany and Materia Medica, and one on Systematic and Practical Botany. The first two courses will each consist of about forty lectures, and the latter course of twenty lectures. The two courses on Botany and Materia Medica will be essentially the same. The first course, which commences in October and ends in February, being repeated in the following five months; thus affording students who have but a limited time at their disposal an opportunity of attending at a period most convenient to themselves. It is highly desirable, however, that all students who are able to do so, should attend during the whole of the session; as the two courses, although essentially the same as to the subjects treated of, from being delivered at different periods of the year—the first in autumn and winter, and the latter in spring and summer—will vary much in the manner in which they are illustrated and described.

It is especially to be desired that students should also attend the third course on Systematic and Practical Botany, and to facilitate this, those who enter for the first course of lectures on Botany and Materia Medica will be admitted to the practical course at a reduced fee; but as this course is delivered at the latter part of the session, those who cannot arrange to devote the whole session to study will find it advisable to commence attendance at lectures in March; as between that month and the end of July, in order to allow time during this part of the session for the delivery of the second course on Materia Medica and Botany, as well as the course on Systematic and Practical Botany, the lectures will be delivered three times a week, instead of twice, as in the first part of the session.

Fees.

	1 Course. £	s.	d.	2 Courses £	s.	d.
Botany and Materia Medica . .	1	11	6	2	12	6
Systematic and Practical Botany.	1	1	0	each course.		

Session Fee for the Three Courses—Three Guineas.

A Student entering for either of the first-named courses on Botany and Materia Medica is also entitled to attend the lectures on Systematic and Practical Botany, on payment of two guineas at the time of entering his first course, or perpetual admission to all the courses may be obtained for four guineas.

Practical Chemistry. Professor Attfield, Ph.D.; F.C.S.; Demonstrator, Mr. John Moss, F.C.S.; Laboratories for Practical Instruction in Chemistry as applied to Pharmacy, Manufactures, Analysis, and Original Research.

These Laboratories are fitted up with every convenience for the study of the principles of Chemistry by personal experiment. They are specially designed for the student of Pharmacy, but are also well adapted for the acquirement of a knowledge of Chemistry in its applications to Manufactures, Analysis, and Original Research. There is no general

class for simultaneous instruction, each student following an independent course of study always determined by his previous knowledge; pupils can therefore enter for any period at any date.

The Laboratories are open from ten o'clock in the morning until five in the afternoon daily, except on Saturdays, when they are closed at two o'clock.

Students are guided in their work by the Professor and his Assistants.

Each student is provided with certain apparatus, chemicals, fuel, etc., and a working bench, with lock-up cupboards. Some articles, such as flasks, retorts, receivers, condensers, and apparatus for volumetric and gravimetric quantitative analyses, are specially provided for those operations in which they are required, but the pupil is held responsible for them while in his possession, and is expected to return them sound and properly cleansed.

Microscopes, spectroscopes, etc., are used under the supervision of the Professor or an Assistant.

The additional apparatus to be provided at the expense of the pupil can be obtained of any chemical-apparatus maker for about 25s.

The fee for the whole course of ten months daily is £26 5s. But proportionate terms are charged to students who wish to study for shorter periods, or for two or three days a week. (See Advt.)

A silver medal, two bronze medals, and certificates of honour and merit, are offered for competition to students of each of these departments.

The Council offer two scholarships (the Jacob Bell Memorial) to associates, apprentices, or students of the Society, each tenable for one year, of the value of £30, with free laboratory instruction and free attendance at the lectures.

THE NORTH LONDON SCHOOL OF CHEMISTRY AND PHARMACY, 54, Kentish Town Road, conducted by Mr. J. C. Braithwaite. The session commences on October 1st, and includes a laboratory with special instruction. Evening classes for Chemistry, Botany, Materia Medica, and Latin. Fee to either class 10s. 6d. per month, also a botanical garden.

THE SOUTH LONDON SCHOOL OF PHARMACY.—This institution under the direction of Dr. John Muter, M.A., F.C.S., commenced its winter session on September 9 It is now located in new and very commodious premises, at. 325, Kennington-road, S.E., which have been partially built and partly adapted for its requirements. The principle adopted in this establishment is to charge one fee, which admits the student until he is able to pass the Pharmaceutical Examinations. The school contains several lecture rooms, a chemical laboratory, museums, dispensing rooms, and smoking rooms for students off duty, which are also decorated with pharmaceutical and botanical specimens. During the session eight courses of lectures are delivered, each course comprising thirty on chemistry, thirty on botany, thirty on materia medica, with daily practice in Latin, dispensing and practical chemistry. In the summer months botanical excursions are organized. Medals are presented to students who pass in honours. The secretary is Mr. W. Baxter, 325, Kennington-road, S.E.

BRISTOL PHARMACEUTICAL ASSOCIATION.—Session 1873-4. The Council of the Bristol Pharmaceutical Association announce the following complete course of instruction in Chemistry, Botany, and Materia Medica.

Chemistry.—A course of thirty lectures, by Mr. Coomber, F.C.S., on *Inorganic Chemistry*, every Tuesday, at 8 p.m., commencing October 14th. A course of thirty lectures by Mr. Coomber, F.C.S., on *Organic Chemistry*, every Thursday, at 8 p.m., commencing October 16th.

Botany.—A course of sixty lectures, by Mr. Leipner, on *Botany: Elementary, Systematic, and Physiological*, every Monday, at 7.30 p.m., commencing September 8th.

At the conclusion of the session in May next, an examination will be held in each subject, at which every student is required to present himself. In connection with that examination the Council offer a series of prizes.

Tickets for either of the two subjects—Chemistry or Botany—will be five shillings for members and associates, provided the holder complies with the condition of presenting himself for examination, and shall have attended not less than twenty-five lectures in each course, in accordance with the regulations of the classes; otherwise the fee will be ten shillings. Students are earnestly advised to abstain from entering for more courses than they can reasonably expect to follow up.

The kindness of Mr. Stoddart enables the Council again to announce a course of lessons on the Materia Medica of the Pharmacopœia. Mr. Stoddart declines, as heretofore, to accept any payment for his labours, but concurs in the propriety of requiring a fee of £1 1s. for attendance, the proceeds to go to the augmentation of the museum and library fund. An examination will be held, and prizes awarded, at the conclusion of the course. The lessons will be on Friday evenings, at nine o'clock, commencing October 3rd. Tickets to be obtained only at Mr. Stoddart's, North-street.

A course of practical laboratory instruction will be conducted by Mr. Coomber on Friday evenings, at the Laboratory, in Nelson-street. The fee (inclusive of apparatus and chemicals) will be £1 1s. per quarter. Tickets to be obtained of Mr. Coomber only.

GLASGOW CHEMISTS' AND DRUGGISTS' ASSOCIATION.—Assistants' Section. The Committee announces that a sum of money has been placed at their disposal, to be offered as a prize, or prizes, among assistants and apprentices who are members of the Association, on certain conditions, for papers which have a bearing upon the practice of pharmacy. Each competitor is to read his own paper at a stated meeting of the Assistants' Section in the course of the ensuing session. At the close of the competition, it shall be the duty of the secretary to call a special meeting of the members of the Assistants' Section, to judge of the merits of the various papers read, and whether there shall be one prize for what may be considered the best paper, or several prizes, distributed according to the merits of the respective papers considered entitled to a prize.

MANCHESTER.—The Chemists' and Druggists' Association of this city have arranged with Mr. Louis Siebold to deliver the following courses of lectures during the winter session:—Chemistry: Twenty-five lectures on Tuesdays, from 8 to 9.30 p.m. Commencing October 7th, 1873. Fee, 25s. Materia Medica and Pharmacy: Twenty-five lectures on Fridays from 8 to 9 p.m. Commencing October 10th, 1873. Fee, 21s. Botany: Fifteen lectures on Fridays, from 9 to 10 p.m. Commencing October 10th, 1873. Fee, 12s. 6d. Students willing to attend all three courses may do so on payment of a reduced composition fee of £2 10s. Tickets and further information may be obtained of Mr. F. Baden Benger, 1, Market-place; or Mr. Louis Siebold, Oxford-street, Manchester. It is to be hoped that apprentices and students of that city will avail themselves of the excellent opportunity thus offered.

In the library, adjoining the lecture room, will be found all the leading works on pharmaceutical subjects, a collection of Materia Medica specimens, and a very beautiful series of indigenous medicinal plants. This room is open every evening from 7 till 10, but students may gain access to it at any other time by applying to Mr. F. B. Benger, 1, Market-place.

Technical and Special Education.

At the ROYAL SCHOOL OF MINES, Jermyn-street, the following courses of lectures are given:—Natural History—By T. H. Huxley, LL.D., F.R.S. Mineralogy, Mining—By Warington W. Smyth, M.A., F.R.S., Chairman. Geology—By A. C. Ramsay, LL.D., F.R.S. Applied Mechanics—By T. M. Goodeve, M.A. Physics—By Frederick Guthrie, Ph.D., F.R.S. Mechanical Drawing—By Rev. J. H. Edgar, M.A. Tickets for these courses are issued at £3 or £4 each. Pupils are also received in the Chemical Laboratory, under the direction of E. Frankland, Ph.D., F.R.S., and in the Metallurgical Laboratory, under the direction of John Percy, M.D., F.R.S.

At the ROYAL COLLEGE OF SCIENCE FOR IRELAND, Stephen's Green, Dublin, instruction is given in the following subjects:—

Applied Mathematics and Mechanics, Mechanism and Machinery, Descriptive Geometry, Geometrical and Mechanical Drawing, Experimental Physics, Chemistry (Theoretical and Practical), Botany, Zoology, Geology and Palæontology, Mining, Surveying, Agriculture.

The Fees are £2 for each Course, or £10 for all the Courses of each year, with the exception of Laboratory, the fee for which is £2 per month, or £12 for the entire Session.

The Session commences on Monday, October 6th.

At the ROYAL VETERINARY COLLEGE, Camden Town, London, the Educational Staff consists of:—Professor J. B. Simonds, Principal of the College and Lecturer on Pathology; Professor W. Pritchard, Lecturer on Anatomy, General and Comparative, of Domesticated Animals; Professor R. V. Tuson, F.C.S., Lecturer on Chemistry, Materia Medica, and Toxicology; Professor G. T. Brown, Lecturer on Physiology, Therapeutics, and Pharmacy; Professor T. S. Cobbold, M.D., F.R.S., Lecturer on Botany, Parasites, and Parasitic Diseases; Assistant-Professor J. W. Axe, Demonstrator of Anatomy.

To obtain the diploma of the Royal College of Veterinary Surgeons it is necessary first to pass the matriculation examination, which is conducted by the College of Preceptors, and to attend at least one summer and two winter sessions at the College. The fee for the whole course of College instruction, except practical chemistry, is 25 guineas.

THE HARTLEY INSTITUTION, SOUTHAMPTON, offers special advantages for medical students for the first eighteen months of their professional studies. The fee is £15 for sons of ratepayers residing within the borough, or £20 for others. First-class education in engineering, chemistry, and other branches of technical science is also provided in this institution.

THE HEREFORD PROPRIETARY SCHOOL is a boarding school, where the course of instruction is especially adapted for boys intended for the pharmaceutical profession. Concurrently with the ordinary school course, such pupils get gradual and practical instruction in laboratory work and in the recognition, collection, and preservation of botanical specimens. The advantage of laying such a foundation early is not a light one.

Chemical Education in Germany.

In a special article on another page we publish details of the education of a pharmacist in the German Empire which will be found of particular interest. But as it is not unusual for English students to spend a session or two in a German laboratory, and as we are often asked for such information, we have below compiled a list of the chief chemical laboratories, and have added a few details of one or two of them as an example. When it is practicable to spend a short time in a German laboratory, such a course is highly desirable, as the acquirement of the language in its technical and chemical words is of itself a key to the unlocking of great stores of scientific knowledge in the future.

Berlin University Laboratory—Professor Hoffman. Berlin Pharmaceutical—Professor Schneider. Berlin Private—Professor Michelaus. Halle—Professor Heintz. Breslau—Professor Löwig. Breslau Ph. Laboratory—Professor Polak Greiswald—Professor Limprist. Bonn—Professor Kekulé. Bonn Ph. Laboratory—Professor Mohr Leipsic—Professor Kolbe. Heidelberg—Professor Bunsen. Marburg—Professor Cairns. Göttingen—Professor Wohler. Giessen—Professor Will. Freiburg—Professor Babs. Tubingen—Professor Fittig. Rostock—Professor Schultz. Kiel—Professor Ledenburg. Jena—Professor Geisther. Konigsberg———. Erlangen———. Carlsruhe—Polytechnic School. Wiesbaden Private Laboratory—Dr. Fresenius.

To give an idea of the cost and course of work we may first instance the Government Laboratory at Leipsic, which is in connection with the University there. There is no special course for pharmaceutical students here. The year is divided into two sessions, or *semesters* as they are called. The winter *semester* commences at the end of October and ends in the middle of March; the summer *semester* lasts from the end of April until the 10th of August. For either *semester* the fee charged is £2 if the student works half days, or £3 15s. if he works the whole day. The chief professor and director of the laboratory is Dr. H. Kolbe. The number of students here averages about 170.

At Dr. Fresenius' chemical laboratory at Wiesbaden there are similarly two *semesters* a year, the winter *semester* commencing on October 15th and ending on March 15th; that of the summer commences on April 24th and ends August 24th. Students can enter for two, three, four, or six days weekly and for half or full days. The full charge for a *semester* (whole days and six days a week) is about £8 10s.; for less time proportionately less charges. Dr. Fresenius also provides complete courses of lectures especially for pharmaceutical students by himself, Dr. Henry Fresenius, Dr. Neubauer, Dr. Kirschbaum, etc. He also undertakes to arrange for board and residence in the town with respectable families.

We may direct the attention of students and others to the announcements of several of the first-class scientific instrument makers which appear in this issue.

Medical Gleanings.

THE great medical event of the year, the meeting of the British Medical Association in London under the presidency of Sir William Fergusson, is too big an affair to be more than touched upon in this place. More than two thousand country practitioners visited London for the occasion, hospitality was provided for on a large scale, a free luncheon every day, a magnificent reception and concert at the Mansion House, and private attentions in abundance. The public dinner was honoured with the company of the Prime Minister and the Bishop of London, while the scientific side of the Association was ably maintained by some excellent addresses. It was generally recognised that the President's opening address was the worst of all, and his intimation that absolute purity of drinking water was not of such very great importance, certainly came most unfortunately just now that cholera is invading nearly all the countries of Europe, and that the evidence of its connection with an impure supply of water is overwhelmingly strong. The meeting has done much to strengthen the British Medical Association, and not that only, it has, we believe, considerably advanced the science of medicine itself. Mr. Gladstone, in his speech at the dinner, complimented the profession on having advanced their science during the past fifty years, more remarkably than any other profession. This assertion we trust the profession will accept as merely rhetorical. It was very nice of Mr. Gladstone to say it, but it will not bear examination. The *Lancet* with the grace and modesty which are its distinguishing characteristics, has an article on Mr. Gladstone's speech, pointing out what he ought to have said, and which his "great rival Mr. Disraeli" would not have omitted. It seems Mr. Gladstone made no allusion to sewage. The entertainments have cost the London members of the Association over a thousand pounds. Norwich is to be honoured with the Association's company next year; but what can they do who come after the king?

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The lady students are now in worse straits than ever. They have been finally defeated at Edinburgh, and no other British school seems willing to receive them. Miss Jex Blake is still hopeful however. Mrs. Garrett-Anderson suggests Zurich, but Miss Blake thinks she will find an opening at home yet. She and her friends are now trying St. Andrew's. The *Times* argues out the whole case in oracular fashion, and "would be sincerely glad if medical practice (for women) were found to realize all that Mrs. Anderson and Miss Jex Blake anticipate from it. But looking at the question from a practical point," the *Times* decides that there are special gifts and qualities—we are not told what—which women do not possess, and which are absolutely necessary for the success of a physician. All this is nonsense; it simply ignores the strong point on the other side, that there are special medical duties, such as midwifery, diseases of women, etc., which it would be far more fit and proper should be discharged by qualified women, than as now universally by men.

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In the *Lancet* lately have been accounts of invalids being removed from place to place under the influence of anæsthetics. Dr. Squarey, of Soho Hospital, anæsthetised

a lady on her bed in George-street, Hanover-square, placed her in an invalid carriage, and conveyed her to her home at Norwood, when she was carried to bed, all the time under the influence of chloroform. Dr. Heyward Smith, of St. Andrew's, describes a longer journey of a lady patient, which included the passage from Folkestone to Boulogne, accomplished by several administrations of tetrachloride of carbon, which he thinks less depressing and more convenient, as it requires less quantity to accomplish its purpose.

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A strike of doctors is reported. The medical practitioners of the Canton Aargau, in Switzerland, have refused parish work because the remuneration given them for visiting the poor is so wretchedly meagre. It seems that the tariff has not been changed since 1804, and according to it a practitioner, for a visit paid to a pauper at a distance of three-quarters of a league, receives the incredible sum of seventy centimes, or 7d.! For the same distance a *commissionaire* receives a franc.

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In the Vienna Exhibition there are several specimens of the embalming of parts of the human body. Dr. Marini, of Naples, especially exhibits a quantity of specimens. One is a large round table made of muscles, sinews, etc., of a dark brown colour, and a handsome polish. This practitioner is reported to have been specially successful. Among his other exploits he petrified Thalberg, and the widow is said to keep the corpse in her drawing-room. He also embalmed Mazzini, and so well that some of the more economical of the admirers of that statesman urged that it should be set up in Rome as a statue, and thus save expense. A collection of petrified specimens of kings, queens, philanthropists, murderers, poets, etc., would be a capital speculation to start in London, and would leave Madame Tussaud's wax work hopelessly behind.

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The *Medical Press and Circular* has the following *jeu d'esprit, à propos* of the approach of cholera:—

Translation.

Monsieur l'Editeur,—It would be truly ungracious on my part were I not forward to acknowledge the condescending homage, and altogether the handsome way in which as a foreigner my interests have been attended to at the recent meeting by the accomplished President of the British Medical Association, and no less by the approbation of the talented Professor presiding over the Physiological Section, who may be said to have given a death-blow to the sacrilegious and loathsome monster, quarantine.

As to the inconvenient crowding complained of on your shores, as commented on by the professor, you shall not wait long, since I shall relieve you, and as I come so shortly to visit my dear friends, there is need of few words, especially as my wishes go with theirs in every respect. The crowding of itself shall do no harm. The firmness, allow me to say, M. l'Editeur, the soundness of principles derived from good stock are calculated to last till I arrive. My express intention to be with you earlier, frustrated by the impertinence of a few individuals, will not have the effect of keeping me long away from those who are entirely wedded to my views, being wholly one with me, whom I embrace with all my heart. It is therefore that I come incessantly invited by Nature's aristocracy, the scientific illustrations of the land. Some outgoing vessels were at my convenience in this respect to drop me in their course, who had no other function than this. You see then I duly come. Let so much serve to assure you; meanwhile apply yourselves severely to your studies, dear friends. The microscope, the battery, the scalpel, the test tube, there you shall find profitable employment. The rest shall be my paternal duty. Your garden I shall entirely attend to, removing sickly plants, also some strong ones when they appear to embarrass. In all respects I shall follow the exigence of the Cambridge professors. I burn to deserve the title of friend of man imposed on me by the Physiological Section. It is decidedly by water I shall come. My English representatives, members of my family, speak ever well of you. Indulgent to me and mine, your peoples when I arrive shall not fail to taste of the best.

Quid pro quo was ever the way with me. I embrace the distinguished President. He will not forget how a few years since I removed the truly remarkable Aston Key. I shall endeavour to leave much room.

Agréez, M. l'Editeur, &c.,

Pestis.

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The *Daily Telegraph* published an eloquent article recently, on the death of Otto Obermeier, a young German surgeon, who in the ardent pursuit of scientific truth had heroically sacrificed his life. He had for a long time investigated the mystery of contagious disease, and had won especial reputation for his researches in regard to typhus fever. When cholera visited Berlin this summer, Obermeier was eager to grapple with the ghastly foe; "night and day he was 'in the trenches,' observing, experimentalising, conjecturing, learning, unlearning." He aimed to find a means whereby humanity should be rendered proof against this terrible disease; and he thought he had won the day. He wanted a crucial experiment, however, and he offered himself. "With quiet courage he opened his veins, and injected that which must communicate cholera to his own frame, or else prove that the cholera germ was henceforth neutralized and conquered. If he should not die, he would be able perchance to help thousands and tens of thousands to live. In the divine encouragement of that thought he pricked the vein, and mingled with his own healthy blood the seed of death which he believed to be neutralized. Then he lay down and slept, they say; leaving Nature and the will of God to decide whether he should rise victor or vanquished."

He was wrong, and the penalty of his error was his life. But to the last his grand calm courage never forsook him. Face to face with certain death, he made notes of the progress of the disease so long as he could write. His grand dream was shattered, but he was no mere dreamer; and he knew that he was cutting out a step which should aid a more fortunate successor to scale the deadly rampart. Obermeier was only thirty years of age when he thus fell in the cause of humanity; and though we cannot at once trace the results of his brave labours, it is nevertheless right to pay such honour to his memory as only the noblest can attain.

In a private letter from Berlin, our correspondent writes that some people have expressed their astonishment that Obermeier should not have made his experiments on animals; but it would appear that animals are not disposed to the disease. It is expected that Obermeier's results and observations will soon be published.

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For those who enjoy medico-metaphysical questions, we may bring forward one which is sometimes agitated in medical circles. A patient is in fearful agony; suppose it to be a case of hydrophobia, for example, death is certain, and the friends surrounding the bedside watch and pray for its merciful approach with anxious hearts; might the physician in such a case, with the full consent of friends and relatives, administer such a dose of a narcotic medicine as should more quickly loosen the silver cord whose tension has become so painful? In plain words, would killing in such a manner in any moral degree approach to murder? It would be an awful responsibility for the physician to be burdened with; but surely the spirit of the moral law would not be broken. We should not be sorry to see that a conclave of the best of our medical professors were to debate this really solemn and not trivial point.

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While we are on the horrible, let us for a moment stir up another question, which really demands the attention of the medical world. The idea of being buried alive is too ghastly for the most ferocious sensationalists, though we believe Edgar Poe made one or two endeavours to employ it for the purpose of awakening a thrill. We have no such object, and therefore shall touch the subject as lightly as possible. For all that, however, we believe it to be beyond doubt that such cases have occurred, and certainly may have happened more frequently than is recorded, especially in times of great epidemics. Lord Lytton left instructions in his will that he was to be opened before burial, and such a request is not unprecedented, and certainly not unreasonable. Is there any one who reads these lines

who would not be glad to know that some means would be taken before his burial to make his death a matter of absolute certainty? It may seem an outrageous subject to raise, but we believe the medical world would only be doing a service and a duty to the world at large if they were to decide among themselves on some simple and non-repulsive method of placing the barest chance of such an extremity of agony altogether beyond the reach of possibility.

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A French doctor (M. Blanc) in a paper read before the Medical Section of the French Association for the Advancement of Science on the "Etiology of Asiatic Cholera," traced the epidemic which has this summer visited Europe to the following circumstance:—On the 1st of April, 1867, an immense crowd of pilgrims, estimated at three millions, visited the town of Tarward, a few miles from the source of the Ganges, and 1,000 feet above the level of the sea. The first two days they encamped by the sacred river under torrents of rain which had the effect of draining the excrements of this vast population into the channel of the Ganges. On the third day, according to their religious rites, they bathed in and drank of its holy waters; and the next day there were eight cases of cholera in the camp. On the 10th of April they dispersed, and by the 15th there were cases of cholera in every company. The epidemic had never been known previously in that district, a strong proof of the influence which contaminated water has in generating it.

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

Toxicological Exercise.

WE have to announce another exercise on the detection of poisons. The substance to be examined shall consist of a mixture of flour and linseed-meal, and may contain a small quantity of a well-known metallic poison. The mixture is to be subjected to such an examination as is required to detect the constituents of the suspected poison.

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

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

ANSWERS.

The last organic powder contained 2·5 per cent. of corrosive sublimate. It may be interesting to those who succeeded in detecting this poison to know that for everyone that succeeded three failed in the attempt. There were thirty-three samples distributed, in return we received sixteen analyses; four state that the poison present was white precipitate, one that it was mercuric sulphate, two are intended to prove the presence of aluminium oxide and potassium chromate respectively, one states that no mineral poison was present, while eight show that the poison was mercuric chloride. If the analysis was found to be difficult it should also have proved instructive. The chief difficulty that it presented was due to the fact that the mixture contained both "bane and antidote." The linseed-meal and wheaten flour, which formed the basis of the mixture, contained small quantities of albumen, as a normal ingredient. Now albumen forms insoluble compounds with many metallic salts, such as those of mercury, silver, lead, copper, iron, antimony, aluminium, etc., on which account it is a valuable antidote in many cases of poisoning. And it has the advantage of being easily obtained in the form of white of egg. Mercuric chloride, the salt contained in the mixture in question, yields a precipitate in highly dilute solutions of albumen. A solution containing so small a quantity as one part in two thousand exhibits this reaction. This circumstance at once explains the difficulty that was experienced in finding out the state of combination of the mercury detected in the mixture. As soon as water was added the greater part of the mercuric chloride combined with the albumen to form the insoluble compound, and such a small quantity of the mercuric salt was left in solution that it was not unlikely to be overlooked. On warming the solution the precipitation was rendered more complete. It was therefore supposed that a compound insoluble in water was present. The fact that traces of ammonia could be detected led some of our correspondents to conclude that the poison present was white precipitate. The ammonia was due, in all probability, to the decomposition of some of the protein compounds in the mixture by the alkaline hydrates employed in the test. The indications of ammonia, however, were not at all sufficient to warrant the conclusion that a mercurammonium compound was present. Taking into consideration the behaviour of salts of mercury with albumen, it was not difficult to devise a method of analysis which would yield the required information. If cold water was employed as a solvent, it removed a quantity of mercuric chloride, quite sufficient for recognition, provided the solution was examined with the care which the circumstances of the case showed to be necessary. Rectified spirit, which does not dissolve either calomel or white precipitate, might also be employed as a solvent, as mercuric chloride is readily soluble in it. Dilute hydrochloric acid was not trustworthy in this case, as it converts mercurous into mercuric chloride. In the cold this conversion takes place slowly, but an elevation of temperature greatly assists it.

It is evident from the foregoing that in examining a mixture consisting principally of organic matter, it is often a matter of considerable importance that the nature of this organic matter should be taken into consideration. It is impossible to lay down a rule to be followed in all cases, as general knowledge and judgment must be called upon to dictate the course of operations according to circumstances. More information, however, should be gained by practical work with such mixtures as have been examined than by any other system of study that can be pursued.

PRIZES.

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

C. W. Halliday, North-terrace, Birstall.

The Second Prize has been awarded to

W. B. Bishop (W. B. B.), 17, Specks Fields, London, E.

Marks Awarded for Analysis.

C. W. Halliday (*1st prize*)	90
W. B. B. (*2nd prize*)	87
C. J. Bennett	83
A. Moss	83
F. A. C.	82
W. A. B.	80
Enitar	80
Gradatim Excelsior	80
J. O. G. T.	55
C. F. Passmore	53
T. Williams	53
England	52
Non Nullus	10
S. F.	0
G. H. N.	0
T. M.	0

TO CORRESPONDENTS.

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

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

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

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

C. J. Bennett.—The destruction of the organic matter is generally a tedious operation; it should, if possible, be avoided. In this case it was quite unnecessary, as your own analysis shows.

A. Moss.—The method which you employed for the detection of the acidulous radical is defective, on account of the liability of prolonged boiling, to convert mercurous chloride into mercuric chloride. The time required is proportional to the strength of the sulphuric acid employed.

F. A. C.—The first step in your analysis was to boil a portion of the powder in dilute hydrochloric acid. (In a case of this sort it is very important to observe the behaviour of the substance with solvents. For this purpose water should always be employed first. The present example shows that it is sometimes an advantage in employing cold water.

W. A. B.—Your report of the previous analysis did not appear to us to require special comment. We hope you read all our remarks to correspondents, for frequently an observation addressed to one student is applicable to several, and we think it unnecessary to repeat it in every case. The main defect of your analysis is that you employ a single test instead of proceeding systematically. The wet examination should be preceded by preliminary observations, such as examination with a good lense or a microscope, behaviour with solvents, etc.

Exitar.—Your analysis was satisfactory so far as it went; others have been awarded higher marks, on account of their being more systematic and more logically conclusive.

Gradatim Excelsior.—Some of the papers received contain a weight of evidence in comparison with which your two tests are very insignificant.

C. F. Passmore.—It is some consolation to find somebody who acknowledges a difficulty in arriving at a conclusion; for as a general rule we find conclusions grasped with the greatest avidity. It would appear that the most inexperienced analysts are least disposed to doubt the accuracy of their work.

England.—It was rather unfortunate that you failed to obtain indications of ammonia when you warmed your mixture of flour and linseed meal with potassium hydrate; for you had then a good reason for concluding that the ammonia detected in the analysis of the poison mixture was not due to the organic matter, as it undoubtedly was. If you repeat your experiment you will probably obtain different results. The extent to which the mixture is heated has a good deal to do with the quantity of ammonia evolved.

Non Nullus.—The precipitate produced by barium nitrate in the aqueous solution was readily soluble in hydrochloric acid instead of being insoluble, as you stated.

G. H. N.—There can be little doubt that the solution which you examined was almost entirely free from mercuric chloride, for reason mentioned above.

T. M.—You must have examined another mixture altogether.

FRANCE.

PARIS, *Sept.* 8, 1873.

SOME liveliness has been imported into pharmaceutical circles here by a smart attack made upon us in a quarter where it was least expected. You are aware that among us there are supposed to be none of the vulgar quarrels between physician and pharmacien which so frequently distinguish British practice. Here the two professions are believed to walk arm in arm, each appreciating the other's virtues, in honour preferring one another, and commercially playing into one another's hands. This idea of the universally pleasant relations between the *medicins* and the *pharmaciens* may, perhaps, be slightly tinged with *couleur de rose*, but it is none the less true in the main; and when the exceptions occur, which go to prove the rule, they do not attain much journalistic notoriety; for it may be admitted that neither class has yet arrived at that point of freedom upon which England always so prides itself, namely, the freedom of washing its dirty linen in public. Therefore the extra bitterness of an insult from our own familiar friends, with whom we have so often taken sweet counsel together, will be duly appreciated.

The immediate occasion of the disturbance was a letter addressed by the Minister of War to the Academy of Medicine, asking for their opinion on certain points relative to the re-organization of military medical service. Hitherto the medical and the pharmaceutical services have been independent of each other as regards rank; but the authorities wish to place the whole on a system more conformable to military discipline, in the hope of obtaining a more efficient service. The Academy appointed a commission to consider the subject, and on the commission were placed six physicians and three pharmaciens, MM. Bussy, Poggiale, and Gotley. The pharmaceutical view of the case was that both services should retain their independence by the appointment of a special authority on the staff of the commander. The medical side insisted that a medical chief should be appointed, and that the pharmaciens should be "subordinate." It was very reasonably argued that such an organization would ruin the *esprit de corps* among the pharmaciens, and necessarily debase that branch of the service. The medicals being the majority, bowled over the pharmaciens, and brought up an enormously long report, which concluded with these three propositions.—

1. The system of fusion of medicine and pharmacy must be rejected as prejudicial to the interests of the army.

2. The present organization of the "service de santé militaire" does not fulfil the needs nor answer the interests of the army. It is necessary that this service should be placed under the direction of a chief, taken from its midst.

3. The autonomy of the service de santé imports (entraine), as a logical consequence, the subordination of pharmacy to medicine in the army.

Naturally these conclusions roused up the pharmaceutical ire, and they were formally condemned in the Société de Pharmacie. Then came the discussion on them in the Academy of Medicine, which was long and interesting. The "suseeptibility" of the pharmaciens was referred to in a not quite complimentary manner, and many of the speakers insisted that the term "subordination" ought to be taken in a military and not in a civil sense. Very fine distinction of terms and phrases were attempted, and not a few urged war to the knife by the retention of the three propositions in their naked ugliness. But ultimately it was agreed that the propositions should be condensed into two only, the third, which included the offending word "subordination," being rejected. The second, however, was made to carry all the sting by a slight addition to its wording. Its last sentence was made to run as follows:—"It is necessary that this service should be placed under the direction of a chief taken from its midst, *belonging to the medical profession, and having under his control all that concerns the 'service de sénat.'*"

A malicious paragraph lately went the round of a good many French newspapers announcing that the prefect of police had addressed a circular to the Paris pharmaciens reminding them that they exposed themselves to severe penalties when they refused to open their doors at night to persons requiring their services. M. Ferrand, the President of the "Société de prévoyance des pharmaciens de la Seine," has sent a long letter to those journals, in which he not only contradicts (on the authority of M. le Préfet) the report of such a circular having been issued, but takes the opportunity of explaining what a pharmacien's duties really are in this regard. He says "pharmaciens, like the rest of the world, have a perfect right to open and close their doors just when it suits them. There is no law or police regulation which compels them to remain continually behind their counters or in the neighbourhood of their shops. Such an aggravation of their duties could only be a consequence of a favorable monopoly which does not exist. Out of goodwill, humanity, interest if you will, they always have done, and always will do, that which the prefect of police has never dreamed of imposing upon them."

The druggists of Versailles have combined and prosecuted a certain tradesman named Quétand, who, not being a qualified pharmacien, had for three years past been preparing and selling certain medicaments. They proceeded under the sixth section of a law passed in 1777, which "forbids grocers or any other persons (except pharmaciens) to manu-

facture, sell, or expose for sale any salts, compounds, or preparations entering into the human body in the form of medicines, or to make any mixture of simple drugs to be administered in the form of medicine, under a penalty of five hundred *pounds*." The Tribunal Correctionnel of Versailles having heard both sides condemned poor Quétand to pay 500 francs penalty, and a small bill extra for expenses. In addition he was instructed to disgorge some of his illegal earnings to the prosecutors in the following manner:—To Mr. Vacher 300 francs. to Mr. Berlin 200 francs, to Mr. Leclerc 40 francs. to Mr. Duval 50 francs, to Mr. Debains 20 francs, to Mr. Louvard 20 francs, to Mr. Cizos 20 francs, to Mr. Braley 100 francs. Further, he was required to pay for the printing and posting of twenty copies of the judgment about Versailles, and for one insertion of it in a Versailles newspaper. In you, sir, he will find one generous friend who will insert it for him free.

Another *procès* of pharmaceutical interest has just been finally decided. M. Rigollot, whose mustard paper you know very well, was formerly a pharmacien at St. Etienne (Loire). About 1836 he sold his business to a Mr. Borelli; Mr. Borelli afterwards sold it to a Mr. Chauveau; Mr. Chauveau was succeeded by M. Jaussand *père*, who abdicated in favour of Jaussand *fils*. All this time the words *Pharmacie Rigollot* have been retained on the front of the shop, and on the labels and circulars of the establishment. Not content with this, M. Jaussand *fils* had commenced the manufacture of mustard leaves, and on the wrappers again made use of the words *Pharmacie Rigollot*, or *ancienne pharmacie Rigollot*. This induced M. Rigollot to claim a copyright in his name, and he has lately obtained a judgment which orders the suppression of the words on the door, on the labels, wrappers, prospectus, and everywhere. In its judgment, however, the Court expressly states that this order is made because it considers that Mr. Jaussand has made an unfair use of the name. This, of course, infers that, under ordinary circumstances, a purchaser has a perpetual right to the original title of a pharmacy.

THE EDUCATION OF PHARMACISTS IN GERMANY.

By our Berlin Correspondent.

On the 18th of July of this year, the following official regulations affecting the education of German pharmacists were proclaimed, and will come into force on the 1st of January, 1874. A young man who wishes to become an apprentice to an apothecary must, first of all, produce his certificate of having studied for one year in the second-class of a "Gymnasium," or the first-class of a "Realschule," and of having satisfactorily passed the usual examination. This is the same certificate which entitles all the German youth to serve one year in lieu of the regulation three years in the army.

The apprenticeship is to last three years, and during that time the pupil's earliest duty is to work in the shop, and thus make himself familiar with the usual drugs and chemicals which are to be his future companions. Then he goes to the laboratory, and learns to make the various chemical and pharmaceutical preparations; and besides, is expected to study works relating to the science of his profession. An apprentice in Germany very seldom now pays a premium; he is provided with board and lodging, and has every other Sunday free. But, especially in the summer, he is expected to employ some portion of this holiday in a botanical excursion.

He must have so employed these three years as to understand the preparation of chemical and pharmaceutic compounds, and the nature and properties, both chemical and physical, of the *Materia Medica*. In this he is tested by a district commission, which is composed of one physician (the *Kreisphysicus*, a State-appointed medical chief of the district), one apotheker, and the apotheker with whom the pupil has been apprenticed. Besides his scientific examination, he is required to translate the Pharmacopœia readily and accurately from Latin into German, to prepare a prescription, and to price it according to the Government tax.

In the large towns the apprentices enjoy more freedom, and better opportunities for study. In Berlin there are lectures provided two evenings a week, as it is generally the case that the pupils are too busy during the day to have time to acquire the necessary theoretical education. In Berlin too, as the distance from the rural districts prohibits the opportunity of botanical excursions, most of them visit the small botanical gardens behind the university, once or twice a week, where for a nominal payment, they can find an excellently arranged and very complete set of specimens of medicinal plants.

The apprenticeship completed and the examination passed, the tyro must now spend three years as an assistant. He generally employs this period in several situations. It is required, however, that at least half the time should be spent in his own country. He takes partly *receptur stelle* (situations in the dispensing department), or *defectur stelle* (in the preparation department), that is to say he works alternately in the apotheke and the laboratory, as except in quite small businesses the same assistant very seldom fulfils both functions. For this he receives about £30 a year with board and lodging. In the large towns the board is sometimes compounded for at the rate of about 50s. per month. Every assistant has every other Sunday free, and also one afternoon each week, leaving business, too, every alternate evening at six or seven p.m. The night service is of course divided among the assistants, and neither the assistants, nor the proprietors get any extra payment for night dispensing.

The proprietor of the apotheke is required to see that during his time of service, the assistant continues to study, makes botanic excursions, and especially that the "laborant" keeps a journal and duly enters short memoranda of all his work.

This second stage over, the university career commences. The pharmaceutical candidate must attend lectures during two semestres on organic and inorganic chemistry, systematic and practical botany, and physic, and also practice qualitative and quantitative analysis in the university laboratory. He has also to attend lectures on the history of chemistry, microscopy, and pharmacy. Also sometimes on mineralogy and chemical technology. Each of these courses of lectures costs about £1 per semestre, and attendance in the laboratory from £2 to £3 for the like period. Generally the pharmaceutical students form an association amongst themselves, at each of the universities, partly for recreation and society, and partly for reading papers, discussions, etc. Each of the twenty German universities possesses a chemical laboratory, in most cases well furnished with all requisites, apparatus, etc., separate stands for each student, each provided with a gas and water supply, etc.; furnaces, a special room for operations with stinking gas, a balance room,* a library, and several other departments. Each student is visited and instructed once or twice a day, by the professor or in the larger laboratories by his assistants.

After two semestres of study, the candidate may present himself for examination. The examination is in three parts. The first is a written one, "unter clausur," under lock and key as we may say, and comprises a theme on analytical and one on organic or inorganic chemistry to be finished in a certain time, a few hours. Next the candidate is required to make a qualitative and quantitative analysis in the laboratory of the university also "unter clausur;" then in an apothcke of the town, he must make up two prescriptions, and one pharmaceutical preparation. Finally, he is examined for a quarter of an hour each by the professor of chemistry, the professor of botany, and the professor of physics, then by an apothecary in the laws governing the profession, and in his general knowledge of shop duties. The examination passed, he receives a diploma endorsed "extremely good," "very good," or "good" as the case may be, and he must next serve his year in the army, after which he is qualified to become the proprietor of an apotheke if he can get one.

I shall give details of German military pharmacy in my next letter.

* In the balance room of the chemical laboratory of the Berlin University, we have counted eighteen valuable balances provided for the students.—[Ed. C. & D.]

THE EUCALYPTUS GLOBULUS.

MR. BOSISTO, of Richmond, Victoria, who undoubtedly deserves a large share of the credit of introducing the eucalypti into medical use, has written thus to the *Melbourne Argus;* and as his complaint is more especially directed against Europeans than his fellow-colonists, we transfer his letter to our columns:—

"Sir,—One would imagine, when reading the opinions expressed by the various professors who have written on the eucalyptus of Australia, that their examination and products had taken rise in Europe and not in Australia.

"When the Great Exhibition of 1851 in England was suggested, and her colonies invited to forward their native products, it was represented that the volunteer exhibitors would receive due consideration and honour; the subsequent Exhibitions were based upon the same representation. How far this has been carried out in the eucalypti products is answered by the silence of all, both in England and the tontinent of Europe, of the first Exhibition, and writers on these new chemical bodies.

"Were it not that your own journal and others of Victoria—the 'Transactions of the Royal Society of Victoria,' the notes given to the commissioners of the several Exhibitions, here and in Europe, the *Medical Journal of Victoria*, and many private medical and scientific gentlemen residing in different parts of the world—were standing testimonies of my labour, I should shrink from asking for a share of honour due for having done a part towards revealing the many and valuable constituents hitherto locked up in the 'everlasting gum-trees.'

"Therapeutics, that branch of medicine which has for its object the treatment of disease, demands from the followers of true pharmacy an examination of all vegetation, and when bodies are separated, and their behaviour with re-agents supply characteristics of probable physiological action, to report accordingly. This done, the pharmaceutical chemist ends his work, and then commences that of the medical faculty.

"When therefore the professors of the science of medicine take up the consideration of these new therapeutic agents, the least that should be expected from them is to acknowledge their producer.

"The quiet worker in Australian pharmacy is entitled to some consideration, especially when his labours call up the notice and attention of *savans* of science and medicine in England and the Continent; but when he finds that after experimenting, producing, and forwarding through exhibitions and numerous private sources to England, Germany, America, France, India, China, and the Mauritius, specimens of these new products without fee or reward, he is quietly ignored, it is time, in the name of justice, to protest at such a wrong.

"Mr. Trollope has thought fit to say that Australians 'blow.' If my case is a sample of the reason for so doing, it answers for most of others—they will receive the result of our labour, and then ignore our right to a share of the reward, if any.

"One house in England (the advertisement of which I herewith enclose), finding that the globulus species has attracted more attention than others of our eucalypti for medicine, has the assurance to 'N.B.' the advertisement thus—'As several kinds of eucalyptus are now introduced, such as amygdulince, odorata, etc.'

"'Now introduced'! the truth being that these were first exhibited by myself at the International Exhibition of London, 1862, and in 1866 obtained the silver medal of the Society of Arts, London, 'for the introduction into commerce' of these very products which this respectable firm advertises 'now' introduced.

"If this is to be the reward for exhibits from Australian colonies, it is a poor reward for voluntary work and labour done.

"There need be no wonder why the medical profession of Victoria did not first promulgate the antiperiodic properties of our eucalypti, no dengue or ague fever existing here; hence the medicinal value of the eucalypti preparations had to be revealed elsewhere. But pharmaceutical chemistry can work where medical science cannot, and in this instance has not failed in its duty here.

"Much more could be said, but I will for the present be content with this protest of wrong done to myself, and, as I think, to Victoria also.

"I am, etc.,

"JOSEPH BOSISTO,

"Richmond, July 8." "Pharmaceutical Chemist.

Chemistry and Pharmacy.

EXPLOSION OF CHLORINE YDROGEN.

A CORRESPONDENT of *Nature* (W.) writes as follows:—"Some time ago, being desirous of showing a class the explosion of the chlorine and hydrogen by artificial light, I devised a simple method which was perfectly successful. Equal volumes of the two gases, prepared separately by the usual methods, were mixed in a stout test tube and confined by a greased cork. This was placed upright on a little wooden stand, and kept in its place by a brass clip. About an inch of magnesium ribbon was suspended in a small tin shade by means of a wire clip. The magnesium being placed near the tube and lighted, the gases united with a report, jerking the cork to the ceiling, but in no case breaking the tube."

ADMINISTRATION OF TURPENTINE IN PILLS.

In order to avoid some of the inconveniences attending the administration of turpentine, M. Lachambre recommends the following formula (*Journal des Connaissances Médicales*):

Oil of turpentine (well rectified)	8 grammes
White wax	20 ,,
Essence of lemon	2 drops
Powdered sugar	9 grammes

Melt the wax in the oil of turpentine, pour it into a mortar, and when cool add the sugar, and work into a mass. Divide into pills of twenty-five centigrammes each, which should be covered with starch powder, and kept in a well-stoppered bottle. Each pill will contain twenty-five contigrammes of the oil. Thus prepared, the pills are said not to distress the stomach, to be easily digested, and not to cause disagreeable eructations.—*Medical Record.*

CITRATE OF IRON AND QUININE.

Mr. C. Umney has experimented on citrate of iron and quinine, and finds that the Pharmacopœia test that "fifty grains, dissolved in a fluid ounce of water, and treated with a slight excess of ammonia, give a white precipitate which, when collected on a filter and dried, weighs eight grains," is not quite practicable. The eight grains are of course supposed to indicate the anhydrous quinine contained in the fifty grains of the scale preparation. Mr. Murray's experiments show that by the Pharmacopœia process from 100 parts of sulphate of quinine 445 of scaled salt can be produced, and, doubtless, if it were possible to work without the accidental loss of some scales, 450 parts could be obtained. Then he maintains that only 70 to 71 per cent. of anhydrous quinine can be found by analysis in pure sulphate of quinine, though according to the official formula it should yield 74·31 per cent. Lastly, he finds that ammonia does not precipitate the whole of the anhydrous quinine in a given sample.

α. 100 grains dissolved in two fluid ounces of water gave with excess of ammonia a precipitate which when dried at 240° (until it ceased to lose weight) weighed 14·4 grains.

β. The filtrate washed with two fluid ounces of chloroform, in successive portions, the solution decanted, evaporated to dryness and treated with dilute sulpuric acid, the acid solution precipitated by slight excess of ammonia, precipitate dried at 240° weighed ·8 grains.

The total quinine separated was therefore 15·2 per cent.

These facts show that instead of the iron and quinine salt containing an equivalent of 25 per cent. of sulphate of quinine, as is generally stated, it will really contain but the equivalent of 22·2 per cent., and that as commercial quinine contains,

on the average, but 70 per cent. anhydrous quinine, the perfected scales will contain therefore 15·54 per cent. of quinine as a maximum, only a portion of which is removed as a precipitate by slight excess of ammonia.

Mr. Umney therefore suggests that the Pharmacopœia test should be modified by requiring a precipitate from excess of ammonia of at least seven grains from fifty grains of the salt.

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

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

1975. S. and T. Kay, of Stockport, Chester, chemists. A new and improved utilization of linseed and other ingredients for the manufacture of certain medical compounds. Dated 31st May, 1873.
2318. J. Haithwaite, of Brookfield-place, Belfast, Antrim, Ireland. Improvements in means or apparatus for extracting chlorine from chloride of lime. Dated 4th July, 1873.
2371. J. Mayer, of Great Portland-street, surgical instrument maker. Improvements in thermometrical apparatus for clinical and other uses. Dated 9th July, 1873.
2448. R. U. Etzensberger, of St. Pancras. Improvements in apparatus and arrangements for making infusions or extracts from substances. Dated 16th July, 1873.
2449. W. Weldon, of Abbey Lodge, Merton, Surrey. Improvements in absorbing dilute chlorine, and in apparatus for that purpose. Dated 16th July, 1873.
2454. F. Jacobsen, of India-buildings, Victoria-street, Edinburgh. The clarification and purification of sewage, and the discharges of polluted waters from paper mills, printing works, dye works, and factories, by means of precipitation. Dated 16th July, 1873.
2455. F. Jacobsen, of India-buildings, Victoria-street, Edinburgh. The clarification and purification of the polluted discharges from paper mills, printing works, dye works, and factories, by means of precipitation. Dated 16th July, 1873.
2458. T. F. Lynch, of Aldersgate-street. Improvements in infants' feeding bottles, and in caps or covers for the same. Dated 16th July, 1873.
2463. J. Hickisson, of Southgate-road, Hackney. Improvements in teats, rings, and other articles sucked by infants. Dated 16th July, 1873.
2472. A. Gow, of Ladbroke-grove-road, Kensington. Improvements in the manufacture of bichromate of potash, or salts of similar commercial properties. Dated 18th July, 1873.
2480. W. H. Thomas, of New Cross, Kent. Improved refrigerating apparatus applicable for preserving food and other purposes. Dated 18th July, 1873.
2532. W. White, of Thurlow-road, Hampstead. Improvements in the treatment of sewage and cesspool water. Dated 24th July, 1873.
2567. W. Leech, of Moorgate-street. An improved method of preserving wood from the ravages of white ants and other insects by the application of certain chemical solutions. Dated 29th July, 1873.

Letters Patent have been issued for the following:—

316. A. Kolk, of Circus-place, Finshury, and C. Allsop, of Old Broad-street. Improved means of rendering closets and other places inodorous, and in the arrangements of appliances for the purpose. Dated 27th January, 1873.
327. W. Wharldale, of Pontefract, York. Improvements in stoppers for bottles. Dated 28th January, 1873.
528. C. W. Harrison, of High Holborn. Improvements in obtaining oxygen. Dated 12th February, 1873.
539. J. Noad, of Bower-road, Hackney Wick. Improvements in the manufacture of sulphurated lead, in apparatus therefor, and in its application to various useful purposes. Dated 13th February, 1873.
570. H. Y. D. Scott, of Ealing. Improvements in the deodorization of excreta, and in the manufacture of manures therefrom. Dated 15th February, 1873.
680. J. Hargreaves, chemist, and T. Robinson, ironfounder, both of Widnes, Lancaster. Improvements in the manufacture of sulphate of soda and sulphate of potassa. Dated 22nd February, 1873.
682. A. M. Clark, of London. Improvements in the purification of syrups and sugar. Dated 22nd February, 1873.
702. A. R. Stocker, of Liverpool-road. Improvements in caps and stoppers and certain other articles to be employed with bottles and other vessels, and in the manufacture thereof, and in the apparatus connected therewith, part of which improvements are applicable to other purposes. Dated 25th February, 1873.
777. J. Arnold, of West Smithfield. Improvements in or connected with clinical and other thermometers. Dated 4th March, 1873.
799. B. Hunt, of Lincoln's Inn. Improved processes for the extraction of iodine. Dated 5th March, 1873.
847. F. Kuhlmann, of Paris. New utilizations of the acid residues resulting from the manufacture of chlorine. Dated 8th March, 1873.
868. W. Weldon, of the Cedars, Putney. Improvements relating to the manufacture of chlorine by means of compounds of manganese regenerated in the wet way. Dated 11th March, 1873.
925. D. C. Miller, of Larkhall, Lanark, North Britain. Improvements in distilling, evaporating, concentrating, agitating, and otherwise treating liquids, part or parts of which improvements are also applicable for granulating or crystallizing materials in solution or mixed with liquids. Dated 13th March, 1873.
1205. A. M. Clark, of London. Improvements in apparatus for raising and measuring acids and other liquids. Dated 1st April, 1873.
1557. A. M. Clark, of London. Improvements in the preparation and employment of indigo blue dye. Dated 29th April, 1873.
1630. H. G. Haddan, of London. Improvements in the treatment of saltpetre and in machinery therefor. Dated 6th May, 1873.

Specifications published during the month:—

Postage 1d. each extra.

1872.

3473. C. W. and A. H. Harrison. Charging atmospheric air with vapour. 8d.
3584. E. Kaulbach. Preventing sea-sickness. 1s.
3631. W. Bruce and another. Bottles for aerated beverages. 6d.
3777. B. G. George. Stop-valve capsule for bottles, &c. 6d.
3803. C. B. De Malorti and another. Preserving fresh meats, &c. 4d.
3828. L. Vallet. Bottles and stoppers. 4d.
3829. J. F. Lackerstein. Manufacture of hydrogen gas. 4d.
3887. A. Kreiger and another. Stopper for bottles. 4d.
3926. D. C. Miller. Distilling. 4d.
3930 B. White and another. Treating hydrocarbon oils. 4d.
3946. W. B. Patrick. Apparatus for filtering syrup. 4d.
3949. J. Higgin and another. Treating waste liquors. 6d.

1873.

1. C. W. Harrison. Carburetting hydrogen gas.
11. F. Phillipi. Smelling bottles. 4d.

Homœopathy.

LADY PATRONESSES.

SOME idea of the aristocratic position which homœopathy has attained in this country may be gathered from a recently issued prospectus of a bazaar to be held next spring in aid of the funds of the London Homœopathic Hospital.

The promoters of the bazaar, with a worldly wisdom which does them infinite credit, tell us nothing of the special claims of the hospital, nor do they trouble us with any homilies on the excellence of charity. They simply announce the list of lady patronesses. H.R.H. the Duchess of Cambridge leads off, supported by five other duchesses. Five marchionesses follow, among whom are especially notable the Marchioness of Westminster, and the Marquise de Caux (Madame Adelina Patti). Next we have ten countesses and nine viscountesses, the Countess Granville leading this division. Then we find about fifty "ladies" or "baronesses," including such names as Ebury, Elcho, Lawrence, Rothschild, Seymour, Havelock, Erskine, etc. The mere honourable and untitled ladies who bring up the rear are grand enough to shed lustre on any ordinary cause, including as they do such names as Mrs. Milner Gibson, Mrs. Knatchbull-Hugessen, and others whose husbands' names are linked with wealth, talent, or fashion. Our respected and philosophical readers in Southwark who intend to vote for Mr. Odger at the next general election will readily and perhaps cynically respond that all this proves nothing whatever as to the truth of homœopathy as a system of medicine, which we as philosophers also are bound to concede. But in presence of the overwhelming power displayed we are disposed to sink questions of truth or falsehood, and declare ourselves, as Mr. Disraeli once did, "on the side of the angels."

HOMŒOPATHIC PILULES.

Some recent numbers of the *Practitioner* contained accounts of certain analyses of homœopathic pilules, which investigations were more creditable to the allopathic orthodoxy of the analyst than to his trustworthiness or impartiality. There could have been no difficulty in ascertaining, first of all, what the homœopaths professed that their pilules contained. The writer in the *Practitioner*, however, preferred to evolve this item out of his own consciousness. Thus he describes them:—

Pilules are different from globules; they are about as large as No 5 shot, and obviously might contain a powerful dose of any energetic substance. The dilution chosen was that known as the second. Each pilule, the average weight of which was 0·6 grain, should accordingly contain 0·00006 grain of the drug. This quantity, in the drugs chosen, is fairly within the reach of analysis.

He tested pilules of *sulphate of copper, corrosive sublimate, nux vomica, aconitum napellus,* and *belladonna.*

In the corrosive sublimate pilules a trace of mercury could be detected, but no others gave the reactions of their active principles. The following letter, addressed by Mr. Ross (Leath and Ross) to the *Practitioner*, but not published there in full, gives a fair answer to the insinuations, and certainly should be read by any whose minds may have been biassed by the reported experiments.

"*To the Editor of the Practitioner.*

"Sir,—In the July number of the *Practitioner*, page 55, you give the analysis of homœopathic pilules obtained from several sources, some of which were obtained from our firm; and as that analysis is calculated to throw discredit upon homœopathic preparations in general, and those firms in particular whose names are mentioned as the source from whence these pilules were obtained, you will, I feel sure, readily admit the following rejoinder. Permit me to say that, in conducting this analysis there appears to have been great ignorance of the homœopathic formulæ; and also the assumption that the pilules contained what in the very nature of things was impossible.

"It is there stated—'we failed to detect either atropine or strychnine in pilules of the second dilution of *strychnos nux vomica* and *belladonna* respectively, although both alkaloids should have been fairly within the reach of analysis.' Should they? I will just state what they ought and did contain, and then leave it to yourself and readers to judge for themselves. The strongest tinctures of the two medicines, *nux vomica* and *belladonna* according to the Homœopathic Pharmacopœia, are made in the proportion of one part of the drug to ten parts of the solvent; in other words, ten drops contain all that can be extracted by the solvent from one grain of the substance; and to make this matter perfectly clear, I will give you the scale up to the second attenuation:—

Strong Tincture.	1st Dilution.	2nd Dilution.
$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{10000}$

The second attenuation pilules therefore would be medicated with a solution, each drop of which would contain ten-thousandth part of a drop of the strong or matrix tincture, or the one hundred thousandth part of a grain of *nux vomica* or *belladonna*. And I ask was it likely that any analyst would find the alkaloids, strychnine or atropine, in such minute quantities as these?

"You then state further: 'Since then we have examined some pilules of *aconite* and *belladonna* of the first dilution, which contain professedly one part by weight of the drug in one hundred parts by weight of the pilules. The results also are entirely negative.'

"They professedly contain nothing of the kind. These pilules would be medicated, as will at once be seen by a glance at the foregoing scale, with a solution each drop of which would contain one one-hundredth part of a drop of strong or matrix tincture, or a thousandth part of a grain of *aconite* or *belladonna;* and who in his senses would expect to find the alkaloids, *aconitine* or *atropine*, even there?

"If 1,000 grains of *belladonna* root yield only three grains of atropine, how much would a thousandth part of a grain yield?

"If 800 grains of *strychnos nux vomica* yield only *one* grain of strychnine, how much would one-hundred-thousandth part of a grain yield? If the analyst who has taken such pains to give us the result of his experiments with homœopathic pilules will attempt to answer these two questions, he will know why he failed to discover atropine or strychnine in either the second or the first attenuations of *belladonna* and *nux vomica*. Had the analyst operated upon strychnine or aconitine pilules, the results might have been very different. It is true, according to the Homœopathic Pharmacopœia, there are no officinal pilules of atropine stronger than the third decimal, or the fifth centesimal of strychnine; and I doubt if the majority of homœopathic chemists have pilules stronger of these alkaloids than the officinal preparations—yet pilules of strychnine containing only the one one-thousandth part of a grain in solution would need no elaborate analysis to detect its presence, as the well-known characteristic bitter taste is evident to the palate on sucking one away in the mouth; and I have no doubt that the presence of strychnine would readily have been detected in the second attenuation by careful testing. But to expect to find the alkaloids in pilules saturated with either the first or second attenuation from the mother-tinctures of *aconite, belladonna,* or *nux vomica,* is about as wise an operation as that of the goose who sat upon addled eggs, expecting to raise therefrom a brood of young goslings.

"I am yours truly,

"Frederick Ross."

CORK PRODUCTION AND MANUFACTURE IN SPAIN.

THE cork tree is found in its wild state in the south of Portugal, Africa, and Spain. In the latter country the preparation of the bark for foreign markets is one of the staple industries, furnishing labour and subsistence to a large proportion of the population.

The tree is a peculiar kind of oak, and the cork is the soft cellular interior bark, lying just inside the exterior woody covering. It is removed by making several longitudinal clefts up and down the trunk, and then girdling the latter with horizontal incisions. The operation is not performed, however, until the tree has attained a certain age, generally fifteen years, and the first crop is employed only for inferior purposes. Seven years afterwards the tree will have another coating of bark, which is stripped and used for making corks, and so on every five to seven years, according to the quality of the ground. The tree does not suffer from the process of scraping, and it is said generally lives from one to two hundred years.

Between the cork and the tree there is another bark that is used for tanning; but this is only removed when the tree is cut down. It is a curious fact that if any portion of this inner coating be destroyed, further formation of the cork on the injured spot ceases. After the layers of the cork are stripped, they are inspected and assorted, according to their sizes and quality, those of the finest texture being of the greatest value. The inferior portions are generally sorted out, their crust burnt off and sold mostly for floats, thus receiving the name of fishing cork. The better qualities are first boiled and scraped, and then blackened over a coal fire, the object being to make the surface smooth, and at the same time to conceal flaws. Some varieties, generally the best, are faced in order to exhibit the fineness of their texture. After being forwarded to the warehouses, the largest slabs are cut into pieces of about three and a-half feet in length, eighteen inches in width, and ranging from one half-inch to three inches in thickness. Drying and packing in bales weighing one hundred and fifty pounds each follows, and the cork is ready for exportation.

From five to twenty-five cents per pound are the usual prices paid by the cork cutter in America for the rough material as it arrives in the bale. It then undergoes another assorting, and a thorough steaming, in a chest designed for the purpose, the latter process softening the cork, and rendering it easy to cut. To divide the substance special machinery is employed. Rapidly revolving circular knives are used, which cut by a drawing motion, as crushing strokes simply break the cork or cause it to crumble. The workman sitting in front of the machine places a piece of cork of suitable size in a revolving spindle, by which it is firmly held. The spindle is raised a measured distance, and the edges of the cork come in contact with the rotating knife, which smooths them off and leaves its work in a perfectly cylindical form. Another method is to place the rough bits of cork in grooves on the circumference of a wheel which, working automatically, carries each piece to a point where its ends are received by a small lathe. The cork is then revolved slowly while a large circular knife removes a thin shaving, thus giving it the necessary taper, and a surface as true and smooth as if sand-papered. As fast as a cork is finished by the automatic lathe it is released and another substituted in its place.

Every portion of the material is utilized, either as stuffing for cushions or life-preservers, or as a non-conducting substance for placing between walls or floors of buildings to deaden sound.

THE CHEMIST AND DRUGGIST

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WE beg to inform our foreign subscribers that the partially unstitched condition in which they receive this journal is in accordance with a regulation of the English Post-office. In common with our contemporaries, to all of whom the same law applies, we are totally ignorant of the purpose of this vexatious rule. We have in vain protested privately against a regulation which compels us to appear before our readers somewhat untidily; and now we feel it due to ourselves to make this public explanation.

COMMERCIAL QUESTIONS.

THE Association of Chambers of Commerce is to hold its autumnal meeting at Cardiff on Tuesday and Wednesday, the 23rd and 24th of this month. If this Association has ever done anything to justify the high-sounding title which it assumes, it has surely been content to take but little credit. We hear of it but very seldom, and on those rare occasions it always seems to be the ghost of some ancient and half-forgotten institution, or the shadow of one which is just about to make an effort. None the less, however, we find that it has sketched out a good programme for discussion at Cardiff, and if it only ventilates a few of the subjects put down, it will not spend its strength altogether in vain.

First of all, in regard to bankruptcy, the Association proposes that the minimum dividend or composition, whether in bankruptcy or liquidation, shall be 10s. in the pound; and that every trader who fails to keep sufficient and proper books, shall, as in France, suffer severe punishment. If the minimum dividend of debtors could be settled by a simple resolution, we should be inclined to substitute 20s. for 10s. in the above proposal. But, at any rate,

we are heartily in accord with the Association in the desire to see a much more rigid system of laws in relation to the payment of debts than we have at present. Certain proposals are to be submitted in favour of the Bank Charter Act, the establishment of Tribunals of Commerce, and of the bill brought in by Mr. Norwood to establish a Register of Partnerships. As to the desirability of this last bill, at any rate, the whole commercial world is agreed.

Another point in the programme is in respect to postage. The Association proposes to petition Her Majesty's Government to open nogotiations with other countries with a view to the adoption of an International Postage Rate of one penny per half ounce; and also that the late reduction in circulars and post cards from one penny to a halfpenny, be extended to all letters, sealed or unsealed. The world will progress much more slowly than we anticipate if these reforms do not become accomplished facts before many years have passed. It is generally reported that Mr. Ayrton is soon to have the management of the post-office system of this country. He could not have a more splendid chance of retrieving his reputation. The concessions made by the present administration, considerable though they are, have been so marred by a few senseless regulations and restrictions as to damage the whole. For one example we may mention a case in which we ourselves are particularly interested. We are permitted to enjoy the privileges of a newspaper as far as our foreign circulation is concerned. But with that permission we are prohibited from stitching the whole of our issue into one neat book. In England newspapers are not allowed to insert any stitches at all. Can any one outside a Government office fathom the mystery of such a requirement as this? It would be an immense boon to the literary world of England, and to the reading public of the whole of the English-speaking nations, if the Government would place on one tariff, and that the lowest practicable, the carrying of all printed matter, regardless of its character. At present the Secretary of the Post Office holds the right of deciding finally what is and what is not "news," and the thin line which marks the boundary winds about in a remarkably tortuous manner.

These are a few of the chief questions which the Association of Chambers of Commerce proposes to discuss at its forthcoming session. We may add a few words in reference to another programme which lies before us.

The National Chamber of Trade has published its plan of work for the ensuing autumn and winter. The committee proposes to call conferences of the various trades interested to consider several subjects of moment. One is of course the general trading of Civil Servants. Our friends in Parliament seem to have been but lukewarm in this matter, but there is therefore so much the more reason for us to bestir ourselves. A general election is approaching, and with parties so evenly balanced as they are now, tradesmen will have an unprecedented opportunity of exercising their rightful influence if they will only *combine*, and regard their means of living as a matter of sufficient importance to be counted among the questions of the day. The Chamber proposes to encourage and urge these local combinations. The Adulteration Act is another subject on which tradesmen have a right to be heard; and its unfair and far from equitable pressure on retailers ought to be soon remedied. The varying decisions and frequently unjustifiable convictions which have resulted from this Act have sufficiently proved that it urgently requires some remodelling. We shall probably return to this subject before long. The Limited Liability Act, as we have before shown, is likely to become an unlimited nuisance. It affords just the opportunity required by unscrupulous and penniless adventurers to carry out their vast and often ridiculous schemes, at the expense of trusting shareholders and creditors. This subject the Chamber proposes to consider. The laws relating to Bankruptcy also come into its programme, a hopeful sign that the subject is in many minds.

The tradesmen of Britain have done much to make our country what it is, and it is time they were fully and fairly represented in the Legislature, and their interests duly consulted. This will never be the case, however, until as a united class they themselves make their power and influence felt. Respect will follow.

DISPENSERS AND PRESCRIBERS.

THE death at Ramsgate from *delirium tremens*, the inquest on which we reported last month, has raised a point of considerable importance to physicians as well as to pharmacists, and a point on which, if we may judge from published utterances, there seems to be a distinct and diametric difference of opinion between the two professions. All the medical journals have joined in a chorus of approval of the jury's verdict, which censured the druggist for declining to dispense a prescription which seemed to him dangerous. The *British Medical Journal* says "the chemist was justly censured, and ought to feel that he deserved it." The *Lancet* remarks that "things are come to a fine pass if the public are to have no medicines but such as commend themselves to the approval of druggists." The *Medical Times* makes a more careful abstract of the evidence than either of the other two journals, but concludes that "the jury had no other alternative than to censure the conduct of Mr. Fisher." The *Medical Press* avoids the expression of an opinion adverse to the chemist, but the heading of its article, "Dispensing Facetiousness," is a sufficient indication of the animus even there. This last-named journal, however, it should be mentioned, has taken both views of the verdict. The case demands our especial attention, and we therefore propose to say a few words first, relative to the particular circumstances which have occasioned this censure, and secondly, to consider the general points which have been thereby raised.

We presume the details of the case are familiar to all our readers. A prescription for a draught was brought to Mr. Fisher, a chemist of Ramsgate, late one night, which contained as its active ingredient half an ounce of tincture of digitalis. According to the most usually followed authorities the maximum dose of this medicine would be about half a drachm. The chemist noticed the extraordinary dose, and probably his first thought was that a not unprecedented error had been made by the writer of the prescription in the substitution of the sign ℥ for ʒ. He commenced to make some inquiries of the messenger, which, it is stated, were very impertinently replied to; the prescription was in a handwriting unknown to him, and the chemist therefore naturally declined the responsibility of being concerned in such a doubtful and dangerous treatment. The patient died, and it is that circumstance which has originated the dispute, though evidently it in no way affects the question at issue. Now for the other side. The surgeon who wrote the prescription was a Mr. Leake, who had but recently come to Ramsgate. By a sort of accident he was called into a serious case of *delirium tremens*, and among other remedies prescribed this draught, which was to be taken at 10 p.m. According to his own evidence he saw the patient about 10.30, and ascertained that the draught had not been taken, and the reason. We want to know what is to be thought of a medical man who next day professed himself confident that had that half ounce of tincture of digitalis

been administered, the patient's life would have been saved, yet made no effort to get it. He says he knew the medicine could not be procured, and therefore he gave some morphia. A town like Ramsgate, with some dozen or more chemists' shops in it, and yet a medical man could not procure some tincture of digitalis at 11 p.m.! But this was not all. Sent for again at one o'clock, Mr. Leake refused to take any further care of the case, because some one in the sick-room had made some remark about having lost confidence in him, which had irritated him. The chemist piqued at the messenger's impertinence had no means of knowing that a life was hanging in the balance; the surgeon knew perfectly how matters stood, but seems to have considered a hasty remark from the invalid's mother quite sufficient justification of his refusal to give further attention to the case. We confess ourself astounded at his cool self-confidence in refusing his certificate, "in order to give Mr. Fishor an opportunity of explaining his conduct."

The medical critics in this case seem to have lost their logic in their desperate resolve to follow the Yankee principle satirized by Mr. Lowell, "The side of our country must ollers be took." The *Lancet*, for instance, pretends to be astonished that anybody should be unaware of the practice of Mr. Jones of Jersey, in prescribing large doses of digitalis, and yet sneeringly animadverts on a druggist exercising his judgment at all. One might wonder what would be the use of a druggist studying Mr. Jones of Jersey at all, unless it were for the purpose of using his new information somehow. According to the *Lancet* theory, a druggist has only a right to exercise his intelligence when an error has really been committed, and then it is his plain duty to put himself in quiet and courteous communication with the prescriber. Happily the profession generally is not guided by such snobbish notions as seem to possess the *Lancet* writer, as is evidenced by the fact that nine medical practitioners of Ramsgate, as well as six chemists, signed a paper expressing their agreement with Mr. Fisher's conduct in this particular case. It would be pure waste of time to argue against the assumption of the *Lancet*, that the chemist and druggist is a mere serf to the physician. Physicians themselves do not so regard him, and it is not worth while to vex ourselves over the acrimonious diatribes of writers whose first aim is smartness. Of course there is an unwritten code of social duty which both sides should respect, and we would be the first to condemn a chemist who, out of any personal animosity, or for any reason except a sense of duty toward the patient or himself, should wantonly refuse to dispense a prescription. Among the millions of prescriptions dispensed every year, we doubt if such a case has been heard of. Probably no chemist has ever even thought of adopting such a silly revenge, though it would be only the same coin which some doctors use when they scatter broadcast insinuations against the whole trade with the exception of one or two favourite firms. In the case before us we cannot but think that, if either, it was the prescriber and not the dispenser who overstepped the ethical law. But with the chance of a verdict of manslaughter hanging over his head, it surely behoves the chemist to be cautious, and gives him a right to decline accepting any risk. Out of this dispute, however, one good result may probably arise. One can readily perceive how easily this difficulty would have been avoided if it had been the custom for prescribers to employ a special sign when they order an unusual dose. In Germany it is imperative upon those who write the prescription to add a note of exclamation (!) if they wish to exceed the certain limits of dose of dangerous medicines, as these are defined in the Pharmacopœia. The one objection to this, that it might alarm the patient, is easily got over, as some correspondents of a contemporary have suggested, by employing instead the word *sic* after the dose, or better still, by the writer initialling such an order, to show that he really means what he writes. We are glad to see that the Pharmaceutical Council has taken this suggestion into consideration, and that it is likely to be brought before the Pharmaceutical Conference also. If the medical press would only urge this practical point, instead of expending their influence in trying to arouse a bad feeling between the sister professions, they would be serving their generation much more worthily. Another remark which has been made is, that it could be no injury, and would in some cases be of practical advantage, if physicians would make a rule of signing their prescriptions with their names in full. We trust the wise among the medical profession will recognise the desirability of making these slight concessions, and thus help to benefit all parties concerned—prescribers, dispensers, and patients.

CHINESE CHEMISTRY.

DR. PORTER SMITH recently read an interesting paper on "Chinese Chemical Manufactures," before the North China Branch of the Royal Asiatic Society. We are told that alchemy was studied among the Chinese two centuries before the Christian era, and it therefore seems probable that the Arabian or Mohammedan traders, who were the reputed discoverers of this art, and had frequent and early intercourse with China by land and by sea, borrowed this interesting branch of knowledge from the Chinese as the first professors of the true science. In the pursuit of some flux by which the dross of animalism was to be purged away, and the higher part of man's nature to be crystallized out and sublimed into some stable and eternal form, these Taouists practised fasting, discipline, worship the use of charms, and the search for a sovereign remedy for all the ills of life.

In mercurials, enamels, porcelain, fire-works, gunpowder, alum, and various metallic salts, the Chinese have attained considerable proficiency. Metals have received much attention at their hands, as they revel in alloys, and love the cheap thunder of gong-metal, and the musical ring of pieces of silver. Copper is regarded as more friendly to the human constitution than iron, and hence they prefer the former metal for the making of cooking and washing vessels. Steel needles dipped in a solution of sulphate of copper have been sometimes sold to foreigners as curiosities in the way of well-tempered metallic copper. Although aware of this decomposition of one metal by another, the Chinese have misunderstood it, and they have been led into the assertion that one metal undergoes conversion into the other. Verdigris, a base acetate of copper, is easily procured by the action of vinegar on plates of copper. Vinegar is the only pure acid substance known to the Chinese. Iron—a metal abundantly bestowed upon China—yields oxides and the sulphate of iron in various forms. A preparation of great beauty, called *Tieh-haw-fen*, is made by acting upon sheets of iron with vinegar. It resembles the citrate of iron in its appearance. The Chinese seem to be aware of some sort of identity of the colouring matter of the blood with these iron preparations which they recommend in diseases of the blood.

Lead is scarce in China, comparatively. It is spoken of as the "black metal," and is regarded as masculine, and the progenitor of the five principal metals.

The most interesting and important substances of all are the mercurial preparations made for ages by the Chinese. Mercury, called "water silver," the exact equivalent of the Latin and Greek names for quicksilver, has had a mysterious attraction for the Chinese alchemists. Its liquid and volatile character, the beautiful colours of its compounds, and the powerful effect of its preparations, have all tended to render it the hope of the chemist in search of omnipotent gold or immortal drug.

PROCTOR'S PRACTICAL PHARMACY.*

(Second Notice.)

PHARMACY is the study of remedial agents—their manufacture, and their best modes of combination. The work before us emanates from an essentially practical man; he describes what his own eyes have seen and his own hands have made. The results enumerated, some of which are in an unfinished state, are not so much an arranged recapitulation of the researches of previous investigators, as the records of the author's personal experience. This is the key to the whole book, which is not a didactic essay, but a thoughtful explanation of facts, phenomena, and suggestions which, in the daily practice of a druggist's business, have crossed the writer's mind. "The aim," says the preface, "most constantly and most prominently before my mind, was to educate, rather than to instruct my class; to expand and develope their ideas of the nature of our calling, and give vitality to its scientific character, rather than to store their minds with an accumulation of facts, cut, dried, and classified in natural orders like a herbarium." Much is it to be regretted that this choice seed seemed at Newcastle to be scattered on most thankless soil; and we congratulate Mr. Proctor on having ventured on a wider field, from which he may hope with confidence to reap the harvest which is his due.

Twenty-nine lectures are included in the volume. The first set relates to various pharmaceutical operations, such as Comminution, Precipitation, Distillation, and Percolation. The second series is devoted to Official Pharmacy, a knowledge of which in all its bearings, is of the utmost importance to the pharmacist.

Under this heading we get liquors, infusions, decoctions, extracts, spirits, tinctures, wines, vinegars, and liniments, together with numerous official products and preparations sanctioned by the British Pharmacopœia. Two chapters, which will excite more attention than any other portion of the manual, enter at large and minutely into the details of dispensing and the art of reading autograph prescriptions. The system of qualitative and quantitative testing receives a notice. Pills, powders, ointments, and suppositories are not forgotten; and even elaborate instruction is afforded in the mystery of spreading plasters, with respect to which it is with us an article of faith, that one week behind the counter would teach better than the hugest folio, and we rejoice that machinery has to some extent taken this branch of inelegant pharmacy out of the hands of the apprentice.

The last distinguishing feature in these lectures consists in the addition of four special treatises under the heading of the Pharmacy of Special Drugs. They are each an illustration of original research—precisely such papers as might be expected at the annual British Conference. They are not founded on stereotyped methods of inquiry, but are home-made, self-prosecuted studies, reaching as yet no definite goal, but describing the incidents of the route travelled—maps, useful both as mental training and for reference—to be filled in and made complete hereafter. Cinchona, opium, aloes, and iron are the respective titles of these dissertations.

The first thing that arrests the attention of the reader is the mass of original matter contained in these pages: they ripple over with instructive hints, and are invaluable to the practical experimenter; they exalt the teachings of the shop, and invest mechanical occupations with the dignity of a trade science. We dismiss at once the opening pages, drawing, however, the notice of the pharmacist to a figure of the drying closet, which seems economically adapted to its purpose. We stop at the directions for keeping vegetable substances in a state of thorough desiccation:—"The substance is introduced into a wide-mouthed bottle, such as is popularly known as a soda bottle, with a hollow stopper; the cavity of the stopper is filled up with quick lime, or other very hygroscopic substance. The material while in use is, of course, exposed a little each time the stopper is removed, to enable a portion of the material to be taken out, but the moisture it thus absorbs is again abstracted by the absorption of the lime before it is likely that another portion of the drug may be required." Cutting, grinding, and levigation are tolerably familiar themes, while the theories of solution and crystallization are found elsewhere explained at length in text-books of chemistry. To these preliminary and succeeding chapters, questions for examination and a re-capitulation are appended.

A far more difficult task in pharmacy is an exposition of the general laws of evaporation and boiling—the first is the cause of constant perplexity to one operating with liquids, easily affected both by air and heat. Various appliances to facilitate its action, or rather to increase its rapidity, have been proposed. One of the best contrivances is here described and figured—the Mechanical Stirrer, invented by Mr. Reynolds.

Distillation is a crucial operation; we fear greatly that except when conducted on a tolerably large scale, the obtained results will lead to disappointment. It requires for its successful use much practice, more thought, skill—mechanical and scientific—and a personal superintendence, which it is well when pressing engagements do not prevent. Therefore, but for no other reason, those paragraphs which relate more immediately to processes of every day occurrence, will prove most acceptable in treatises of this kind, and we strongly recommend the perusal of the tenth lecture on Filtration and Percolation. The balance of experience is in favour of the percolator usually called the York Glass. Opinions on the subject are diverse in the extreme, and Mr. Proctor must be ranked amongst those who are not enthusiastic upholders of percolation. He states:—"Thus, in theory we might expect every portion of the liquid would become saturated before it passed through, and that exhaustion of the solid would be completely effected soon after the liquid ceased to pass through in a state of saturation. This theoretical result is most nearly obtained when the comminution of the solid is carried to its utmost limit, and the column is of considerable depth in proportion to its width. But, even under the most favourable circumstances, these results are far from attainable."

Again—"It is, therefore, rarely practicable to use very fine powders, and the imperfectness and slowness of solution increase in proportion as the comminution is less perfect, so that the theoretical results are *never* obtained and *rarely* approached." The italics are taken from the book. We have but to say that in face of published statements of other operators in America and England and the private experience of humbler pharmacists, this passage is open to re-consideration. The most recent practice is to percolate ingredients in the highest state of comminution, using of course, attendant precautions. We have seen samples of every variety of tincture, including the chief of sinners, Tinctura Cardamomi Comp., prepared by percolation in such a state of efficacy as would satisfy any tests derived from smell, appearance, brightness, or medical activity, and which would come out victorious from the trial by the tasting test recommended in the case of the Cinchona liquors. We should hesitate to deter the retail pharmacist from the careful application of a method that sets him thoroughly independent of the wholesale manufacturer.

Official pharmacy is a chapter that cannot be too highly recommended, nor the spirit in which its study and pursuit are both enjoined; obviously for many preparations the retail pharmacist must trust to the supplyer, but he should at all times know enough of the subject to be able to judge of the supply. We may add that the nature of his occupation is

* "Lectures on Practical Pharmacy." By Barnard S. Proctor. London: Churchill.

such that many hours of incidental leisure may most profitably be employed in experiment bearing directly on his trade interest. There is no safer plan of gaining the confidence of the physician as well as that of the public, than by the exhibition of certain home-made articles. Daily experience is in evidence that several pharmacists have become eminent and widely extended their business relations by devoting attention to the production of any definite series of remedial agents; surely, a method of gaining an existence more lucrative and wiser than the exclusive worship of bazaar nic-naos, and Lowther arcadian contrivances. Here Mr. Barnard Proctor shines; his notes will bear inspection; and to the question *does it pay?* may be confidently answered, Yes.

Probably there is no pharmacist who does not consider his brother a well meaning but uninformed person who ventures on a statement as to the best excipient for pills. The British Pharmacopœia orders castor oil in Pil. Hydrarg. Subchlor. Co., because the authorities were engaged in writing books, and not dispensing behind the counter. The following is proposed:—

"Powdered gum tragacanth, 3 drs.
Glycerine, 9 fl. drs.
Water, 4 fl. drs.

Mix the gum and glycerine till smooth before adding the water. Four ounces of the dry materials require exactly one ounce of this mucilage to form a convenient mass, which retains its plastic condition, its solubility, its retentiveness of shape, and a ready miscibility with other aqueous masses, if that were necessary." (P. 141.)

Of the official liquors we say nothing, but only express the hope that after reading these pages not one bought specimen will enter a druggist's shop.

Next we approach the official infusions and decoctions. The first are now made with regard to scientific rules, the time occupied, the heat employed, and the degree of comminution being regulated so as to produce the highest remedial efficacy; too short maceration might fail to extract the active matters; too long maceration might dissolve out an excess of mucilage. We suggest a tabulated form of maceration in large type for more convenient reference, and we would extend the remark to other oprations whose employment is of daily occurrence. With regard to the compound decoction of aloes, it may be said that it is best prepared on a somewhat large scale. There is no objection to this plan, as it improves by keeping, and may thus be dispensed and sold in a perfectly bright condition. Considerable reputation has been gained by using this precaution by well-known firms; the decoction is never allowed to become a trade article until it has enjoyed at least one month's repose; the remainder that refuses to become clear is bagged through a flannel filter, and the compound loses altogether its nauseous character, much resembling in taste, rich, aromatic port wine. It may interest some writers who describe the decoction as only a tolerated formula, and stimulate the industry of manufacturing pharmacists, to know that in certain houses this preparation commands a sale which makes it form a desirable item in the annual returns.

We omit the commentary on the spirits, tinctures, wines, and liniments, with two exceptions. The remark on Tinct. Zingiberis Fortior we imagine to be an inadvertance. It is said "to be used principally for making syrup of ginger." Apart from the essence of ginger, which is often a proprietary article or made from a private formula, there is hardly a tincture more popular amongst the public than the Pharmacopœial concentration. Few medicine chests sail or rail without it, and it is given medicinally for exactly what it is described, a chance of taking ginger in sufficient dose in smallest possible bulk. No pick-me-up should be without it.

Vinum Ipecacuanhæ is too frequently an unsightly preparation. We have seen it prepared with sherry of fine character, and there was the invariable deposit. We noticed that when by accident the wine had been prepared with an inferior—indeed, a very much inferior—sherry, the appearance was improved. The vinegary taste of the solution was patent, and, acting on this idea, but not guided by the light of science, acetic acid was in future added, with excellent result. Let it be confessed the proportion was by rule of thumb. Mr. Proctor says:—"Free acid is considered advantageous for the preparation of ipecacuanha wine. Mr. Johnson, at the Pharmaceutical Conference at Birmingham, showed that the deposit which takes place in long kept ipecacuanha wine contains ipecacuanhate of emetina, which is precipitated from ipecacuanha wine of any alcoholic strength, if there is no free acid; but samples prepared with inferior acid wines were comparatively free from change with keeping. The addition of three or four grains of tartaric acid per ounce is an advantage in preventing this deposit. Tartaric acid itself is not exempt from decomposition when kept in solution in water, and it is not unlikely that acetic or hydrochloric acids would be more advantageous. No doubt the spirit in the wine would retard the decomposition of tartaric acid, but acetic acid is not only more stable in itself, but also has an antiseptic action upon most organic substances."

The official products of distillation land us into higher considerations: hydrocyanic acid, ether, and chloroform, which, we are afraid, we must transfer to the man with a well-appointed laboratory; and the aromatic waters, an aqueous region on which we all may enter. In spite of the silence on this matter we omit no opportunity of stating our conviction that the ancient practice of the sixteenth century which enjoins definite maceration previous to distillation is worthy of attention. Whatever may be the scientific points involved, experience seems to justify this method. Aromatic distillation was with our ancestors, the distillation of a preliminary infusion. This the Germans call nychthemeron, a night and a day; antique pharmacy ordained a longer time; and in the case of aromatic perfumed spirits, two or three months' maceration of the ingredients was not considered too long a period. Thus aqua mellis and aqua odorata were produced; and thus only, those cordials whose names have become historic; such were the elixirs that left the cloister for the world, and extended the spiritual fame of religious orders in more than one sense. The rule is, set the still over-night, and commence work with one intervening day. Aqua Cinnamomi, the herb-mint waters and all trade perfumery spirits are in illustration. We must not forget to mention a good piece of laboratory apparatus called Mitscherlich's condenser, figured page 103. It is very convenient because the chamber is made in two pieces fitted together by flanged rims. It can be opened and thoroughly cleaned of essential oil. Eau de Cologne is the simple mixture of previous distillates, a fact, of which, extreme advantage is taken in some pharmacentical laboratories.

With Mr. Proctor's remarks on extemporaneous waters we cordially agree, though with a twofold difference. He remarks, "The presence of spirit in the waters is quite objectionable. I have repeatedly seen waters prepared by the aid of spirit, turn sour by keeping, the spirit no doubt being converted into acetic acid. The use of magnesia has been objected to on account of its power of forming salts with the oils, part of the magnesia itself remaining in solution, and retaining more than the legitimate quantity of oil. As far as my experience goes, when it is necessary to extemporize a water, nothing is gained by the use of magnesia or sand over simply adding the oil to the water, hot in preference, using violent agitation, and filtering through paper. A further objection to the use of magnesia is the chance of interfering with any salt which may be prescribed with the aromatic water; the chance of this is the greater in consequence of its solubility being increased by some at least of the essential oils." (p. 195). Our first difference consists in thinking that a small quantity of powdered starch and cold water is a better process than any of the above. The second is, that as far as our experience goes, the best method to pursue with regard to extemporaneous waters is to consign them to the nearest receptable for waste products.

We regret that in the notice on filters and filtration, as well as in the experiments on the complete exhaustion of Cinchona Bark, the author has ignored the admirable contrivance invented and practically tested by Mr. R. W. Giles, of Clifton. This arrangement was specially designed for this particular class of filtrates.

Official products of fusion relate chiefly to the ointments of which Unguentum Cetacei is the type; and to such plasters as Emplastra Resinæ, Saponis and Calefaciens. Difficulty has been experienced in preserving Ung. Belladonnæ and others made from vegetable extracts. Water should as much as possible be avoided, and no more added than is

actually required. If too much be added, not only is the mixiug less perfect, but there is greater tendency to mould. In Ung. Belladonnæ Mr. Proctor is of opinion that "The addition of a little oil of cloves would tend to its preservation, but as the formula stands, it is better prepared fresh when required. Probably the use of spirit or glycerine for softening the extract would diminish its tendency to mouldiness." Possibly this would be the case; but we think there is no equal remedy to filtration by a steam funnel. We have known ointments of belladonna, hyoscyamus, and conium so treated, to retain their original appearance for years.

The needless difficulty in prepariug spermaceti cerate, is the use of a small basin, in which it is stirred till cold—the mechanical assistance of a good large vessel and big wooden spatula cannot be over-estimated. This in lesser degree is true of all ointments where whiteness and smoothness are desirable.

We shall continue our remarks on this work in our next.

TECHNICAL TERMS.*

A work of such a character as the one before us deserves the most respectful attention and criticism that a reviewer can give. The author has set himself the enormous task of collecting a dictionary of technical terms, and presenting them in the three great languages of the world—English, French, and German. Such a service to the practical and to the student divisions of the scientific world gives the author a strong claim on the gratitude of both. His work contains over eight hundred closely printed pages, three columns each, and comprises, he informs us, about 65,000 technical terms, for which he gives us equivalents in French, German, and English.

The author is a Frenchman, whose position in the London Patent Office has given him specially good opportunities to become acquainted with technical English. In order to improve the German department, we are informed that the work has been revised by M. Louis Tolhausen, French Consul at Leipzig. The volume just published is French-German-Englisb, but another is in course of preparation, English-German-French—which, of course, will be most generally useful to our readers.

Of course chemical terms occupy a good portion of the work, and although we cannot pretend to have done more than test the dictionary in certain instances, it seems to us that the author has acquitted himself most ably of this difficult labour. The only weak point we came to was the interpretation of *flacon tubule* as "a two or three-necked bottle." Correct enough, no doubt, but not so readily recognisable as would have been "Wolf's bottle."

We have to remark, however, that the author seems to have almost entirely ignored the technical terms of pharmacy and medicine. Neither *pharmacien*, *pharmacie*, nor *pharmaceutique* are to be found; *médecin* and *chirurgien* are absent likewise. We have sought out, too, the names of drugs and diseases which happened to occur to us, and generally without success. For example, there is a page full of *huiles*, but "huile de foie de morue" is wanting. Then we perversely selected *rachitisme* as our first disease, and curiously found the word there; but its medical employment was ignored, and an agricultural interpretation only—"white blight"—was vouchsafed. Testing for the names of a few other trades, we noticed that for "*quincaillier*" the equivalent English word is given as "hardwareman;" ironmonger would have been a better translation.

It would be strange, indeed, if errors and omissions were not to be found, and the author asks for such criticism as will aid him in perfecting his work. We are quite sure he will accept our few remarks in the spirit in which they are offered.

* "Dictionnaire Technologique dans les langues Francaise, Anglaise, et Allemande." Redigé par M. Alexandre Tolhausen. Leipzig: Bernhard Tauchnitz. London: Sampson Low and Co.

Mr. John Stuart Mill has bequeathed £3,000 to any one University in Great Britain or Ireland that shall be the first to open its degrees to women; and to the same University a further sum of £3,000 to endow scholarships for female students exclusively.

Literary Notes.

The third edition of Professor Bentley's "Manual of Botany" is in course of preparation, and is expected to appear on October 1st.

Messrs. John J. Griffin and Son, of Garrick-street, have published a very valuable book entitled "Scientific Handicraft." It is written by Mr. John J. Griffin, F.C.S., author of the well-known "Chemical Recreations," etc.; and though to some extent a trade catalogue, it is none the less a most useful addition to the scientific library. The present volume describes and illustrates nearly a thousand apparatus requisites in Mechanics, Hydrostatics, Hydrodynamics, and Pneumatics. It is intended to follow this up with companion volumes on Acoustics, Heat, Light, Electricity, Magnetism, and Galvanism. The apparatus is invariably well described; and not only so, but experiments to be made with each, and the conclusions to be drawn from each, are usually indicated. We need hardly add, that by clearly attaching to each instrument its price, the usefulness of the work is considerably increased.

We have just received a copy of the fifth (American) edition of Professor Attfield's "Chemistry." It is similar to the fourth edition (English) only adapted to the United States Pharmacopœia. "The author's ideal of a manual of chemistry for medical and pharmaceutical students (we quote from the preface) is one in which the chemistry of every substance having interest for the followers of medicine and pharmacy is noticed at more or less length according to its importance, and at least its position in relation to the leading principles of chemistry set forth with all attainable exactness." This paragraph well defines the distinctive character of this over other chemical works. In America, Dr. Attfield's work has met with considerable favour, and we believe it has been adopted as the text-book in many of the leading colleges of pharmacy.

We have several times had occasion to refer to Messrs. Longman's series of Text-Books of Science, edited by F. M. Goodeve, M.A., and C. W. Merrifield, F.R.S. The treatises in this series are written by the best authors in the departments of science treated upon, are well illustrated, and are sold at a remarkably low price. The latest published is by Dr. Thorpe, Professor of Chemistry in the Andersonian Institution, Glasgow. We shall make a careful examination of this work, and report more full upon it in our next. The preceding volume, though not so closely coincident with our interests, is worthy of mention for its practical and somewhat novel character and for its general usefulness. It is entitled "Workshop Appliances," and is written by Mr. C. P. B. Shelley, C.E., professor of manufacturing art and machinery in King's College. Carlyle has remarked that the epic of this age should be "Tools and the man," and Mr. Shelley has taken considerable pains towards the execution of the philosopher's idea. He describes and illustrates a large number of engineers' appliances, from the simple axe up to the most complex lathe, sufficiently showing, as he himself points out at the commencement of his treatise, how largely our commercial prosperity and engineering reputation have resulted from the continuous flow of ingenuity in the invention of these workshop appliances.

The *Printers' Register* says "of late we have had to announce several new ventures in trade journalism, and enterprise in this direction seems indeed to have been very active. It is astonishing too how many of these journals manage to keep on their legs, and pay printer's and other bills. Some of them, however, go to the wall: and we observe that during the past month the *Grocery News*, a weekly paper recently established, has been obliged to succumb to the adverse influences of fate, its publication having just been discontinued.

The same journal makes the following complimentary reference to our series of portraits just commenced. "The proprietors of the Chemist and Druggist have commenced a sort of trade portrait-gallery, giving an excellently-executed likeness of some prominent man in the trade, accompanied by a short biography. This is by no means a bad idea."

PRIZE MEDALS AT THE VIENNA EXHIBITION.

WE give below a list of the British exhibitors at the Vienna Exhibition of manufactures, etc. connected with our business, to whom prize medals and honourable mention have been awarded. First of all, however, we may quote the principles laid down upon which the distribution of awards was based.

1. The *Diploma of Honour of the Universal Exhibition of 1873 in Vienna* is to be considered as a particular distinction for eminent merits in the domain of science, its application to the education of the people, and its conducement to the advancement of the intellectual, moral, and material welfare of man. This distinction can only be awarded by the Presidents' Council on the proposition of one of the Group Juries.

2. The *Medal for Progress* is for exhibitors in Groups I. to XXIII., and in Group XXVI., who, compared with the productions exhibited at various exhibitions, can prove noticeable progress in new inventions, in the introduction of new materials and contrivances, etc.

3. The *Medal for Merit* will be awarded to exhibitors who can lay claim to excellence and perfection in material and workmanship, large extent of production, the opening of new markets, the employment of improved tools and machinery, and cheapness of produce.

4. The *Medal for Fine Arts* is for distinguished art productions exhibited in Group XXV.

5. The *Medal for Good Taste* is for exhibitors of articles of industry, the form and colour of which constitute the characteristic features for adjudication.

6. The *Medal for Co-operators* is for such persons who, as managers of manufactories, foremen, designers of patterns, modellers, or as general assistants, are nominated on the part of the exhibitors on account of the leading part they have taken in the features of excellence of the productions, or in the increase of their sale.

7. The *Diploma of Merit*, or *Honourable Mention*, will be awarded to exhibitors who have given proof of meritorious accomplishments, but not in such a degree as to justify their title to either the Medal for Progress or for Merit.

At a meeting of Presidents held on the 2nd July, 1873, it was resolved, "That the Medals for Progress, Medals for Merit, Medals for Fine Arts, and Medals for Good Taste, are perfectly equal in rank and value."

Twenty-seven Diplomas of Honour have been awarded to British exhibitors, but we cannot claim any of these as belonging to the trades which we report.

The distinctions to which we may direct attention were the following:—

MEDALS OF PROGRESS.

	Group
Ash, C., and Sons, Broad-street, Golden-square	14
Atkinson, J. and E., 24, Old Bond-street	3
Berger, S., and Co., Bromley-by-Bow	3
Clark and Co., Rathbone-place, Oxford-street	7
Codd, H. (per Dows, Clark, and Co.), Grove-lane, Camberwell	13
Colman, J. and J., 108, Cannon-street	4
Crosse and Blackwell, 21, Soho-square	4
Doulton and Watts, 28, High-street, Lambeth	9
Dows, Clark, & Co., 6, 7, 8, & 9, Bedford-street, Strand	13
English Condensed Milk Company (Limited), 95, Leadenhall-street	4
Field, J. C. and J., Upper Marsh, Lambeth	3
Fry, J. S., and Sons, 12, Union-street, Bristol	4
Gillott, Joseph, and Sons, Victoria Works, Birmingham	7
Huntley and Palmer, 9, Rood-lane, London, and Reading, Berks	4
Johnson, Matthey, and Co., Hatton-garden Works	3
Jones, Orlando, and Co., York-road, Battersea	3
Mackay, John, 119, George-street, Edinburgh	4
Peek, Frean, and Co., Dockhead, Bermondsey	4
Price's Patent Candle Company (Limited), Belmont Works, Battersea	3
Rimmel, Eugene, 96, Strand	3
Smith, T. and H., and Co., 21, Duke-street, Edinburgh, and 12, Worship-street, London	3
Tyler (Hayward), and Co., Upper Whitecross-street	13
Young's Paraffin Light and Mineral Oil Company, 69, St. George's Place, Glasgow	3

MEDALS OF MERIT.

Aire and Calder Glass Bottle Company, Castleford, Yorkshire	9
Batty and Co., 15 and 16, Pavement, Finsbury	4
British Seaweed Company (Limited), Whitecrook Chemical Works, Dalmuir, Glasgow	3
Bryant and May, Fairfield Works, Bow	3
Bush, W. J., and Co., 21 and 22, Artillery lane, Bishopsgate	3
Colman, J. and J., 108, Cannon street	3
"Crown" Perfumery Company, 40, Strand	3
Denton and Jubsum, 8, New Bond-street	3
Doulton and Watts, 28, High-street, Lambeth	13
Farrow and Jackson, 18, Great Tower-street	4 & 7
Field, J. C. and J., Upper Marsh, Lambeth	3
Hynam, John, 7, Princes-sq., Wilson-street, Finsbury	7
Johnson, Matthey, and Co., Hatton Garden Works	7
Keiller, James, and Son, Dundee	4
Kent, G. B., and Co., 11, Great Marlborough-street	10
London Stereoscopic and Photographic Company, Regent-street	22
Mander Brothers, Varnish Works, Wolverhampton	3
McCall, John, and Co., 137, Houndsditch	4
Milner, Thomas, and Sons, Phœnix Works, Liverpool	7
Moir, John, and Son, 56, Virginia-street, Aberdeen, and 14, Commercial-street, London	4
Piesse and Lubin, 2, New Bond-street	3
Price's Patent Candle Company (Limited), Belmont Works, Battersea	3
Runcorn Soap and Alkali Works Company, Runcorn	3
Silicated Carbon Filter Company, Church-road, Battersea	13
Yuille, Andrew, 132, Irongate, Glasgow	4

HONOURABLE MENTION.

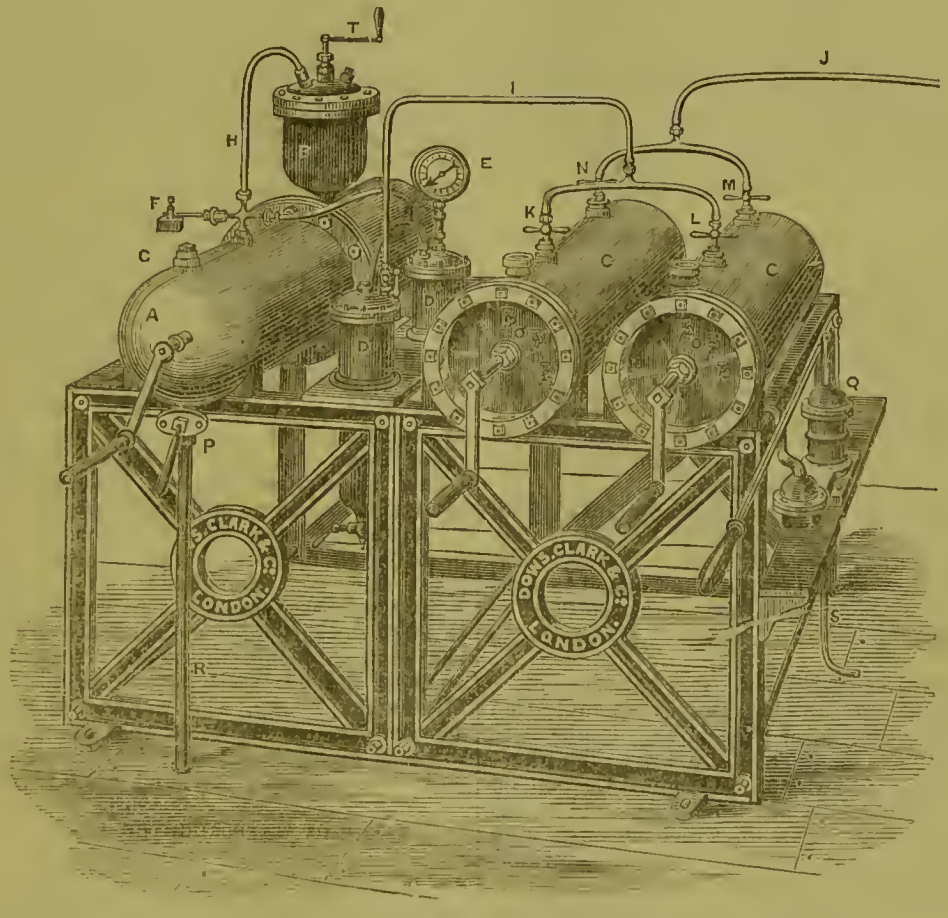
Adams, John, Victoria-park, Sheffield	3
Banner, Samuel, 4, Fazakerley-street, Liverpool	3
Bell, J. and Co., 338, Oxford-street	3
Bewlay and Draper, 238, May's-street, Dublin	3 & 4
Borwick, G. and Sons, 24, Chiswell-street	3 & 4
Clarke, G. B., Park-street, Woburn	4
Corbiere and Son, 30, Cannon-street	5
Dinneford and Co., 172, New Bond-street	3 & 5
Down and Co., Woburn, Bedfordshire	2
Duncan, Flockhart, and Co., 52, North Bridge, Edinburgh	3
Gabriel, Messrs., 64, Ludgate-hill	14
Gezelin and Co., Belgrave-house, Argyle-square	4
Goodall, Backhouse, and Co., Boar-lane, Leeds, Yorkshire	4
Hynam, John, 7, Princes-square, Wilson-street, Finsbury	9
Rowland, A., and Sons, 20, Hatton-garden	3
Sage, F., 80, to 84, Gray's-Inn-road	8 & 10
Stanford, E., Glasgow	3

The GROUPS referred to above are thus officially described:—

2. Agriculture, Horticulture, and Forestry.
3. Chemical Industry (including Pharmacy and Perfumery).
4. Substances of Food as Products of Industry.
5. Textile Industry and Clothing.
7. Metal Industry.
8. Wood Industry.
9. Stone, Earthenware, and Glass Industry.
10. Small Ware and Fancy Goods.
11. Paper Industry and Stationery.
12. Graphic Arts and Industrial Drawing.
13. General Machinery.
14. Philosophical, Surgical Instruments.

DOWS, CLARK, AND CO.'S PRIZES.

WE mentioned last month the extremely prominent position taken at the Vienna Exhibition by Messrs. Dows, Clark, and Co. Their five pavilions are in a constant state of siege. The Americans and Western Europeans take their ice-cream beverages with the calm indifference of *habitués*, but the Easterns, in spite of their national tendency to reserve, find it impossible to conceal their delight at the novel experience of "sucking paradise through a straw." The firm has been honoured with a Medal of Progress for their ice-cream soda-water machines, and also with another similar medal for their soda-water machine, and bottling cylinder combined, which we illustrate and describe below.



A is machine for generating the carbonic acid gas; B the vitriol pot; G, opening for the whiting or marble dust; D D, washers for purifying the gas; E, pressure gauge; F, safety valve; H, pipe to equalize the pressure; I, pipe to carry the gas into the cylinder; C C are the stationary cylinders for holding the aërated water; Q is pump for supplying the water to either cylinder as desired. In the first instance, the two cylinders are filled nearly full of pure water, and then charged up to a sufficient pressure, when the cocks K and L are closed. The pipe J leads to the bottling machine, and when desired the aërated water is let on by turning either the cock N or M. When either cylinder is empty the cock is closed, and a further supply of water pumped in with pump Q. The water is gauged in the cylinders by the small taps o o. After filling with water the carbonic acid gas is let on by turning cock as before, and by agitating with the handles another charge of aërated water is made in a very few minutes, and with little trouble. The gas in all cases passes through the two washers, D D, and is thoroughly purified. The generator and cylinders are made of heavy copper, the former lined with lead, and the latter heavily tinned with pure metal. The portable cylinders can be charged with this machine by simply having a charging pipe to attach to purifier or washer D.

Under the fierce sunshine of Vienna Messrs. Dows, Clark, and Co. are investing their energy in a fruitful soil, and we have no doubt they will reap substantial results, as well as secure these trophies of honour.

PHARMACEUTICAL COUNCIL.

AT the monthly meeting on September 3rd, Mr. John Williams, treasurer, in the chair, the first business of general interest reported was the election of Mr. Octavius Corder, of Norwich, as an examiner, to fill the place vacated by Mr. Haselden, the late president, whose election had not been approved by the Privy Council, from the fact that he had not retired from the Council a sufficient time.

A discussion followed, originating from the recent inquest at Ramsgate, in which a chemist had been censured for declining to dispense a physician's prescription containing an unusual dose of tincture of digitalis. The official report of the discussion is as follows:—

The CHAIRMAN said all the members were doubtless aware of the circumstances which had recently taken place at Ramsgate with reference to the refusal of a chemist to dispense a prescription containing an unusual dose of digitalis. He did not know whether the Council would take any steps to correct the erroneous impression which seemed to be entertained by the coroner and jury. He had no doubt in his own mind that Mr. Fisher, of Ramsgate, was perfectly justified in declining to dispense the prescription.

Mr. SAVAGE hoped the Council would not move in the matter, being convinced if they once began to interfere in local matters there would be no end to it.

Mr. HAMPSON said he had thought a good deal upon this matter, and it was his intention to bring it before the Pharmaceutical Conference, so that, if possible, they might agree upon some sign to be recommended for the adoption of medical men when excessive or unusual doses were ordered. When this was done, as he had no doubt it would be, by a unanimous resolution of the Conference, it would probably be well if the Council also recommended its adoption. He did not think it wise to enter into personal matters, but the general question was of great importance.

Mr. OWEN said there were hundreds, if not thousands, of chemists throughout the kingdom who never saw the *Journal*, or any periodical of the kind, and therefore it would be useless to take any action of this kind unless they

were prepared to send out a circular to every one in the trade. Two years ago, when in the west of England, he was astonished to find a chemist, doing a large business in a large town, who was totally ignorant that there had been any agitation with regard to the Poison Regulations.

Mr. Stoddart mentioned a case which had recently happened in his own experience, where a young lady desired to have a prescription made up containing a large dose of strychnine, to be taken every four hours. She stated that her father was a physician, and desired the prescription to be made up as written, but as she would give no further details, he declined to dispense it, and never heard anything more of it.

Mr. Greenish was glad to hear that this matter was to be brought forward at the Conference by Mr. Hampson, and thought that any action taken by the Council should come afterwards. He thought dispensing chemists had a right to call upon medical men, for their own protection, to attach some sign to unusual doses. It was not the province of the chemist and druggist to determine whether any given dose was proper in any particular case, but where it was an unusually large dose, it was the bounden duty of the medical man to attach some sign to it. That sign he thought should be his own initials, and then the chemist would be justified in dispensing it.

Mr. Betty had no doubt the matter would be fully discussed at Bradford.

Mr. Greenish added that in the New Pharmacopœia for Germany there is a table containing 86 articles, and in the Austrian Pharmacopœia there is a similar table containing 60 articles, to each of which the maximum dose is attached, and any prescription containing a dose beyond the maximum in those tables cannot be dispensed without the prescriber's sign, thus (!) opposite to it, nor is the chemist permitted to dispense the same prescription a second time without an additional guarantee of a similar character.

Mr. Robbins agreed that this was a very important subject, and one which ought to be taken up by the Council if they could do so effectively. It appeared to him, however, that the best course of action would be for the Council to communicate with the College of Physicians, and ask them to recommend some regular course of action in the matter to their brethren.

Mr. Savage thought this suggestion a very valuable one.

Mr. Betty agreed with Mr. Robbins that a communication should be sent to the College of Physicians. Confined to pharmacists, their labours would be futile, but as the Pharmacopœia was issued by authority of the Medical Council, on which the College of Physicians was represented, and as this Pharmacopœia contained the doses in which chemists were examined, they might fairly call upon the College of Physicians for support and assistance in this matter.

Mr. Hampson said it was his intention, if the Conference came to any decision upon this subject, to bring it before the Council, and afterwards it would be very advisable to send copies of the resolution—if it should be carried—to the Medical Council and the medical colleges, and ask them to move in the matter themselves. Strictly speaking it was the duty of medical men to take the initiative, but he hoped the ventilation of the subject at the Conference and a resolution of the Council would produce the desired effect.

The Chairman said he was sure even the present discussion would be serviceable, particularly after the remarkable letter of Dr. Collis Browne, which they had no doubt seen, stating in effect that chemists ought to be mere automatons, having no right to think for themselves, or do anything but blindly follow the prescriptions which were brought them. Such a notion could not be too strongly repudiated.

Mr. Betty felt sure there was not a man at the table who would not have poisoned two or three persons in the course of his life if he had followed the principle laid down in this remarkable letter. He himself could recall two or three instances in which he should have killed the patient as dead as a nail if he had followed literally the prescription sent him.

A Welsh Rare-bit.—A traveller in Wales, near Forryside, seeing a sign over the door with this one word, "Agoserqurdore," asked the woman what she sold, when she said that she did not sell anything, but that "Agnes are cured here."

PROSECUTION OF A CHEMIST AND DRUGGIST UNDER THE MEDICAL ACT.

At the Ipswich Police-court, on Thursday, August 7, Mr. James John Young, registered chemist and druggist, of Carr-street, was charged by Dr. B. Chevallier with "unlawfully, wilfully, and falsely taking and assuming the name of surgeon contrary to law." On behalf of the prosecution it was stated that Dr. Chevallier,—who on the passing of the Medical Registration Act in 1858 was requested to act as secretary in Suffolk,—had in December last called upon Mr. Young and asked him if he was qualified to assume the name of Dr. Young and to practise as he was doing, and whether his name was registered. Mr. Young admitted that he was not registered, but said he was trying to be. On the following day he saw Dr. Chevallier and promised not to circulate any more handbills stating that he was a registered surgeon. About two months after that Mr. Young exhibited in his window a paper on which he styled himself a practitioner, and gave the public to understand that he was fully qualified to act. A few days after that he took that paper down and put another up, which stated that he was not only a surgeon and practitioner, but that he was a registered practitioner. Under those circumstances Dr. Chevallier felt that, as secretary, he had no other course open to him than to issue a complaint against defendant, who was liable to a penalty of £20. In defence it was acknowledged that an irregularity had been committed, but it was urged that Mr. Young was studying for the medical profession, and that through the loss of some documents at sea he had been prevented from being registered. It was also stated that the business did not really belong to the defendant but to a Mr. James Young, who was then in Scotland on business. The magistrates suggested that the solicitors should come to some arrangement, and, after a short consultation, the defendant pleaded guilty, and was fined 40s., and 20s. costs.

CHARGE OF MANSLAUGHTER AGAINST A CHEMIST AND DRUGGIST.

An inquest several times adjourned, was concluded at Barnstaple on August 30th, on the body of a Mrs. Yeo, of that town, the wife of an innkeeper. Deceased had suffered from umbilical hernia, and had an ulcer in the breast. For the latter, she had obtained some lotion from Mr. Goss, a chemist at Braunton. The surgeon (Mr. Fernie) who attended her, believed that the lotion contained arsenic, and he believed that absorption of that poison had occasioned the considerable inflammation of the stomach which he had found on making a post-mortem examination. Afterwards, the lotion, and also the stomach and breast were examined by Mr. W. W. Stoddart, of Bristol, who found zinc in considerable quantity, but no arsenic either in the lotion or in the body. Dr. Thompson, of Bideford, gave evidence that he did not know of any recorded instance of the absorption of zinc into the stomach, but that if taken it would cause vomiting and irritation.

The jury gave it as their opinion that there was no positive evidence as to the immediate cause of death, but they believed it to have been accelerated by the unskilful treatment of Mr. Goss, of Braunton. The Coroner said this would entail upon him the necessity of recording a verdict which, in effect, would be that of manslaughter.—One of the jurymen remarked that a censure was all that they had intended their verdict to convey.

Mr. Goss at once came forward and voluntarily surrendered, and the Coroner intimated his willingness to accept bail, Mr. Goss in £50, and two sureties in £50 each. Bail was immediately offered.

SELLING SPIRITS WITHOUT A LICENCE.

At the Bakewell Petty Sessions, September 5th, Alfred Coates, druggist and grocer, was charged with selling spirits without a licence. Defendant pleaded guilty, and expressed sorrow for his conduct. He was fined the mitigated penalty of £12 10s.

TRADE MARK IN SODA WATER BOTTLES.

At the Longton Police Court, on the 9th inst., Frederick Hall and Thomas Hallerton, soda-water manufacturers, of Longton, were summoned for having employed for the purposes of trade certain bottles, bearing the trade marks of Messrs. Enoch Tams, Thomas Turner, and Henry Copestick. The solicitor for the prosecution stated that Hall was perfectly cognisant of the offence, as he had himself assisted in forming an association for the protection of the trade. The portion of the Act of Parliament bearing upon the trade marks question was stated by the legal gentleman, who pressed for the minimum penalty. Hall was fined 10s. and costs, or fourteen days' imprisonment, with a request that he should return all the bottles in his possession bearing the names of prosecutors. Hallerton was also fined in the same penalty.

A CHEMIST TRIED FOR THEFT.

At the Birmingham Police Court on the 9th inst., George Pope Garlick, chemist and druggist, and his son George Henry Garlick and Benjamin Garlick, were brought up on remand, charged with receiving and stealing linen and other articles, the property of Messrs. Courts, drapers. George Pope Garlick was discharged; George Henry Garlick was sentenced to six months' imprisonment, and Benjamin Garlick was further remanded.

POISONINGS.

SAD SUICIDE.

A VERY respectable apothecary of the City of Cork, Mr. H. Haines, committed suicide on the 4th instant by drinking nearly an ounce of tincture of aconite. The evidence at the inquest clearly showed that his mind had been affected for some time past. He had lately lost his wife and two grown-up daughters, and this brought on a state of despondency which resulted as we have described. At the inquest, the jury brought in a verdict that the deceased committed suicide while in a state of unsound mind.

STRANGE CASE OF POISONING.

An extraordinary case of poisoning is now occupying the attention of the West Gloucestershire coroner. At Horfield, near Bristol, lives a single woman, named Mary Jeuliens. She had a child a year old, whose father lives in Bristol. Jeuliens recently received a letter containing a shilling's worth of postage stamps and three powders, marked in writing "Steadman's powders." The letter was signed, "Jane Isabella Smith, lady visitor of the Dorcas Society," and was dated "Hope-cottage, Cotham." Jeuliens gave one of the powders to her child when it was restless. Five minutes afterwards the little creature died in great agony. A doctor tested one of the powders, and found it to contain corrosive sublimate and strychnine. An inquest has been opened, at which the mother of Jeuliens stated that no Miss Smith was known at Hope-cottage, and witness knew of no one who had any ill-will against the child, unless it was the father, who paid for its maintenance. The inquiry has been adjourned.

THIRTY CHILDREN POISONED.

An inquest was held on August 23rd, at Blackburn, before Mr. Hargreaves, District Coroner, relative to the death of an infant three years old, named E. C. Harrison, son of John Harrison, boatman, Addison-street. It was proved that on the previous Wednesday a quantity of ashes had been carted from the extensive manufactory of Messrs. Jackson Brothers, George-street West. With these ashes there had been intermingled a quantity of arsenical soda, which in 1866 had been supplied to the Messrs. Jackson for manufacturing purposes. The deceased and twenty-nine others had picked up the soda in question under the impression, from its crystallized appearance, that it was alum, and had sucked it. The deceased died from its effects, and all the others had been attacked with sudden illness. The jury returned a verdict that the deceased had been accidentally poisoned. Another child died on the 24th of August.

POISONED BY SYRUP OF POPPIES.

Mr. Clarke Aspinall, the Liverpool coroner, held an inquest on August 26th on the body of David Peter Clare, aged ten months, son of Thomas Clare, a sailor, who lived in Rydall-street. On Saturday night the child was very cross, and the mother purchased a pennyworth of syrup of poppies at the shop of Mr. Chellew, chemist, Breck-road. The chemist's assistant told Mrs. Clare to give the child half a teaspoonful for a dose, which she did. The child then fell asleep, and about eight o'clock in the morning, when Mrs. Clare awoke, she found it dead. The chemist's assistant said he did not remember telling the mother of the child how much she should give for a dose; and Dr. Bollard gave it as his opinion that death was caused by the syrup of poppies administered by the mother. The jury returned a verdict to the effect that the deceased had been accidentally poisoned.

LAUDANUM SOLD INSTEAD OF TINCTURE OF RHUBARB.

On August 16th Thomas Titterton, formerly a manufacturer, in a very extensive way of business, in the rule trade, at Birmingham, called at a shop of Mr. Robinson Parkinson, King-street, Blackburn, and asked for half an ounce of the tincture of rhubarb. In mistake Mr. Parkinson supplied his customer with half an ounce of the tincture of opium, which Titterton drank. Mr. Parkinson at once perceived his mistake, and called in Mr. Wearing, surgeon, who applied the stomach-pump. Titterton, however, never rallied from the effects of the poison, and died on Tuesday night. The deceased was fifty-nine years of age.

THE BRISTOL PHARMACEUTICAL ASSOCIATION.

THE annual meeting of this association was held on August 1st. A satisfactory report was first presented, from which it seemed that the society was in a flourishing condition. The treasurer reported sixty-one members' subscriptions at 10s. 6d., and thirty-nine Associates' subscriptions at 5s. Courses of Lectures on Chemistry, Botany, and Materia Medica had been delivered by Mr. Coomber, Mr. Leipner, and Mr. Stoddart, respectively. The latter gentleman had handed his fees over to the Museum and Library Fund. The report expressed the Association's acknowledgment of this generosity, also their obligations to the gentlemen who had aided them in the monthly evening meetings, namely: Mr. Coomber, Mr. Thomas Wills, Dr. Tilden, Dr. Armstrong, and Mr. Carteighe.

The president (Mr. Townsend), in moving the adoption of the report and accounts said, the Association had now been in existence for four years, a time sufficiently long to test its strength, and to form an opinion as to whether it had really taken root and become firmly established, and he thought they might fairly consider that it had done so; the number of members had not fallen off, and they had as many students as they could reasonably expect. He was happy to feel that the position of those engaged in the study of pharmacy in the city was better and higher than when the Society was established; and he believed that many who at first gave attention to the requisite studies only from a sense of the absolute necessity for doing so, were now seeking knowledge for its own sake. The proportion of the students who went up for the South Kensington Examinations was very gratifying, and the proportion of those who passed equally so. Mr. Keevill seconded this motion, which was carried. The following gentlemen form the Council for the ensuing year.—President, Mr. Schacht; Vice-President and Treasurer, Mr. Boorne; Honorary Secretary, Mr. Pitman; Council—Messrs. Boucher, Cuff, Giles, Isaac, Martin, Stoddart, Stroud, Taplin, and Townsend. Mr. Collings was reappointed auditor.

WHEN a patient begins to feed more, his doctor is always feed less.

LEICESTER CHEMISTS' ASSISTANTS AND APPRENTICES' ASSOCIATION.

At the half-yearly meeting of the above Association, held at the rooms, Halford-street, on Tuesday, August 5th, Mr. W. Thirlby, President, in the chair, the report was read, and unanimously adopted. It stated that the meetings of the classes marked out by the programme had been held with nearly unbroken regularity. The average number of members attending each class had been—Chemistry, 10·1; Botany, 11·3; Materia Medica, 11·8; and Dispensing, 7·1. In addition to the evenings devoted to the classes, the rooms have been opened every night for the purposes of study and practical work, and a good number have availed themselves of the advantages offered by this arrangement. One evening a week has been set apart for members who are specially preparing for the Minor examination. The committee desired to express their thanks to the Council of the Pharmaceutical Society for their donation of £10 towards erecting a case for specimens, a well-made and in every way suitable cabinet having been put up at a cost of £12. This was being filled with specimens and articles of materia medica presented by many wholesale houses. One of the leading trade journals had spoken of the Association in terms of high approbation, terming it a "Model Association," and the committee hoped this would be a sufficient inducement to the honorary members to continue that support which they had always so liberally afforded.

The President announced that valuable presents of drugs, chemicals, etc., had been received from the following houses:—Messrs. Hodgkinson, Stead, and Treacher; Davy, Yates, and Routledge; Barron, Harvey, and Co.; Langtons, Scott, and Edden; Dunn and Co.; and Harker and Co., of London; Messrs. Wyleys and Co., Coventry; Messrs. Clarke and Co., Portsmouth; Messrs. Matthews Bros., Bristol; Messrs. Beatson and Co., Rotherham; Messrs. Robinson and Sons, Chesterfield; and a cordial vote of thanks was accorded to these firms for their kindness and liberality.

It was also announced that several other donations had been promised, but had not yet been received.

A vote by ballot for the election of a new committee was then taken, and the officers were chosen as follows:—Mr. T. Wright, P.C., President; Mr. S. H. Cadoux, A.P.S., Vice-President; Mr. E. H. Butler, A.P.S., Treasurer; Mr. C. B. Lomas, A.P.S., Hon. Secretary; Mr. E. J. Bishop, Mr. A. Shakespeare, Mr. A. Chamberlain.

The statement of accounts showed a small balance in the hands of the treasurer.

If you should swallow a tooth, it would be merely an inside—dental affair.

A few weeks ago, on the Drug Exchange, of Philadelphia was collected 600 dols., which was handed over to the "Children's Excursion Committee" of that city to defray the expenses of a free excursion to the children of the poor, that amount, according to the Philadelphia *Public Ledger* (one of the editors of which, W. V. McKean, Esq., is over head and ears in this labour of love), being amply sufficient to provide for 1,500 children.

American Drinks.—The following is a verbatim copy of the liquor card hung up in one of the largest hotels at Long-branch, United States:—

"Time Card of Drinks.

Eye Opener	5 A.M.	Delayed, No. 1	3 P.M.
Refresher	6 ,,	Social Drink	4 ,,
Double Header, No. 1	6.30 ,,	Invigorator	5 ,,
Appetiser	7 ,,	Double Header, No. 2	5.30 ,,
Digestor	8 ,,	Solid Straight	6 ,,
Big Reposer	9 ,,	Accommodation	7 ,,
Stimulator and Lunch	10 to 3 ,,	Fancy Smile	8 ,,
Talker	12 N.	Pleasant Talk	9 ,,
Mixed Special	12.30 P.M.	Dick	9.30 ,,
Settler	1 ,,	Sparkler	10 ,,
Lightning Express, No. 1	2 ,,	Rouser	11 ,,
		Nightcap	12 ,,

Floaters Free.

"*N.B.*—Wild or irregular drinkers will keep out of the way and off the time of the regular customers.

"Passengers by late 'bus carefully forwarded home by Wheelbarrow Express."

CORRESPONDENCE.

THE PATENT MEDICINE LICENCE.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—You were good enough to insert a letter from me last year, calling attention to the injustice of the present unequal charge for the privilege of vending patent medicines.

The chief grievance is felt by those who, like me, live in the metropolitan suburbs, and have to pay the highest rate; (£2 per annum) with a small population, and patent medicines not used as much as in the rural districts, while larger buyers supply themselves and their friends from the Civil Service Stores.

One year my profits on Patents was not equal to the amount paid for a licence to sell them. I am quite certain that the Act was never intended to extend to small villages like this, more than twelve miles from the City; yet because one lives just within the old 2d. post district, one has to pay the same as in Oxford-street, or the Boro'; and four times as much as in Liverpool or the largest city or town in England. Villages, however populous, outside of this circle, only pay 5s. per annum, and yet it is well-known that in the rural districts these remedies are much more used than in London.

A uniform charge of 10s. or 20s. per annum would meet the difficulty. It would be to the advantage of country druggists to pay 10s. instead of 5s., for the advance would cause stationers and others who now sell a few, to discontinue entirely, chemists always having the preference.

The subject should be at once agitated, so that with the help of your valuable journal, we may obtain a decision of the Council of the Pharmaceutical Society, and an equitable arrangement of the tax before September, 1874.

I am, Sir, respectfully, your old subscriber,

T. M.

NITROUS OXIDE GAS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—In your last issue I see a quotation on the above subject which is likely to mislead and prejudice the public against what has been proved to be a safe and useful anæsthetic. It is true, as Messrs. Joylet and Blanche state, that nitrous oxide will not support respiration, but this was discovered many years ago, when experiments were being tried on the lower animals; it was then found, that even after the inhalation of the gas had been pushed so far as to cause apparent death, animation, was again restored by resorting to artificial respiration. To say that the gas does not support life, therefore it should not be used as an anæsthetic, is simply absurd; we might just as well argue that a person should never use smelling salts, as the gas evolved is poisonous, and if inhaled pure would rapidly cause death. It is quite possible to kill a person with nitrous oxide, but it is quite improbable that any surgeon or dentist will persevere in administering it till such a result is brought about. Messrs. Joylet and Blanche assume that nitrous oxide is an asphyxiating agent similar to hydrogen or nitrogen, and state that the anæsthesia produced is due to want of oxygen in the blood; now if this were true, both hydrogen and nitrogen should act in a similar way, and produce anæsthesia, but they do not. After the immense success which has attended the administration of the gas, and what has been said and written upon the subject by the highest authorities, and after the report of the Nitrous Oxide Committee of Investigation, it seems almost childish on the part of Messrs. Joylet and Blanche to come forward and tell us what we have known all along, and then conclude with an opinion, which is at variance with that of almost the entire medical and dental professions. Those who wish to have the highest

opinions upon the subject should refer to the *British Journal of Dental Science* of February last, the *Medical Times and Gazette*, the *British Medical Journal*, and other medical papers of about that date. Trusting you will find space for this in your columns,

I am, &c.,

Portland-place, Clapton. E. EDWARDS.

Notes and Queries

Spes might at least conform to the usual rule of giving in his name and address. We believe both works named are out of print. Copies might be obtained by advertising in our Exchange Column. A new edition of the British Pharmacopœia is not likely to appear until next year.

R.S.—Oxalic acid or chloride of lime are the generally employed chemicals for removing ink spots. But where these are not practicable, as in the case of delicate colours, you would find a concentrated solution of sodium pyrophosphate an excellent substitute.

J. A. M.—Ext. Millefolii Fluid. Digest one pound of Milfoil (Yarrow) in seven pints of water for six hours, and decant the liquor. Digest the residue in another seven pints of water. Express and strain the mixed liquors, and evaporate to seven fluid ounces. Add one fluid ounce of rectified spirit.

Unguent.—In the case you refer to, the widow, as administratrix or trustee of the estate, can continue the business, but she must employ a qualified assistant. She can only retain the business so long as she retains, and in virtue of, the trusteeship. She will therefore doubtless recognise the expediency of qualifying one or both of her boys for the business.

Pantheon.—Albumenized Paper.—The paper is first floated on a bath of albumen, in which is dissolved a quantity of chloride of sodium or ammonium. The paper is dried spontaneously, or by artificial heat. It is sensitized by being floated for a few minutes on a 60-grain solution of nitrate of silver, and dried. That is a copy of the recipe you ask for; we will try and find a more definite one.

Ustus.—The following is a favourite lotion for burns in the Charity Hospital, New York:—

R Zinci sulph.	gr. xv.
Tinct. lavand co.	℥j.
Aquæ ad	Oj.

Mix.

J. K. L.—Essence of moss-rose may be prepared as follows:—

R to de rose	℥iss.
Ess. ambergris	℥iiss.
Ess. moschi	℥j.
Alcohol	℥xv.
Aq. rosæ conc.	℥x.

Mix, and shake frequently for a week.

A SUPERIOR MARKING INK.—The following recipe affords a marking ink which flows freely from the pen, without running or blotting, becomes perfectly black upon application of a moderate heat, and will not destroy the texture of the finest cambric:—

Nitrate of silver	℥j.
Carbonate of soda, crystallized	℥iss.
Tartaric acid	℥ij. ʒij.
Strong liquor ammoniæ	f℥ij. or q.s.
Archil	f℥ss.
White sugar	℥iv.
Powdered gum arabic	℥xij.
Distilled water	q.s.

Dissolve the nitrate of silver and carbonate of soda separately in distilled water; mix the solutions; collect and wash the precipitate on a filter; introduce the precipitate, still moist, into a Wedgwood mortar, and add to it the tartaric acid, rubbing them together until effervescence has ceased; add liquor ammoniæ in sufficient quantity to dissolve the tartrate of silver; then mix in the archil, white sugar, and powdered gum arabic, and add as much distilled water, if required, as will make f℥vj. of the mixture.

Answers to inquiries received after the 10th are postponed until next month.

THE *Melbourne Age* recently had the following:—"Is Portland to be condoled with or congratulated? It has only one doctor, and its one lunatic cannot be sent to Yarra Bend without the certificate of two medical practitioners. He is accordingly passed on to Melbourne, where the fraternity muster in strength. The announcement should lead to one of three events. Portland should be rushed either by the sick, by the profession, or by the demented."

Trade Memoranda.

Messrs. Fry and Sons, of Bristol, have added the Vienna medal to their long list of Exhibition trophies.

Messrs. Hibberd and Son, of Neath, introduce their "Health-giving Saline," a pleasant effervescing medicine.

Mr. Stainthorpe, chemist, of Corbridge-on-Tyne, has retired from the business, and gone to Glasgow University to study for the medical profession.

Mr. Bennett, chemist, of King-street, Sheffield, has disposed of his business to his brother, who is in business in Edward-street, Sheffield.

Mr. T. W. Mills, of Handsworth, Birmingham, has succeeded to the business at Dartford, in Kent, lately carried on by Mr. Bisson.

Chemists and druggists should look over their stock of respirators, chest protectors, and such like seasonable articles at this time. Our advertisement pages will help them to fill up vacancies.

Mr. Hiekisson wishes us to mention that the marking inks we reported as exhibited at the Vienna Exhibition under his name, are those more generally known as the manufacture of "the daughter of the late John Bond."

Mr. W. W. Stoddart, pharmaceutical chemist, of Bristol, has been appointed, under the Adulteration Act, public analyst to the city and county of Bristol, at a salary of £100 per annum, and £50 per annum for laboratory expenses.

Prof. George F. Barker has gone to Europe to purchase physical apparatus for the University of Pennsylvania, for which purpose an appropriation of 10,000 dols. was recently made.—*American Chemist.* The instrument trade should be on the look-out for Prof. Barker.

Mr. John Wiggin, pharmaceutical chemist, has been appointed, under the provisions of the Adulteration of Food, Drugs, &c., Act, public analyst to the Corporation of Ipswich. The salary is to be £25 per annum, and a payment of 10s. for each analysis.

VIENNA EXHIBITION.—A medal for progress has been awarded to Messrs. Hayward Tyler and Co., the hydraulic engineers, for their patent "Universal" Steam Pump. This is, we are informed, the only medal awarded to direct-acting steam pumping machinery.

OZOKERIT HONOURED.—Messrs. J. C. and J. Field, of Lambeth, who not long since effected such a great advertising *coup* in introducing their Ozokerit Candles, have received two medals at Vienna. One for the general excellence of their manufactures, and the other as a special recognition of the success of their now famous candles.

Messrs. T. Ordish and Co., of 90, Newgate-street, have lately introduced a novelty in court-plaster. They send out half-a-dozen sixpenny cases mounted on a card, each case ornamented with a pretty photographic scrap, and the card itself also headed with an excellent and appropriate photograph of Wilkie's painting, "The Cut Finger." The whole is very attractive. The same firm has also sent us some samples of very good albumenized paper, white and tinted. They have also caught the apparently universal mania for manufacturing marking ink. Their "Raven Black" looks like a very complete and saleable shilling's worth.

The Liebig Company has been awarded a "Diploma of Honour" at the Vienna Exhibition, the highest testimonial conferred by the juries.

Mr. Smeeton, of Leeds, whom we need not introduce, has joined in the marking ink competition. We notice a specially tasteful style in the manner in which his preparation is got up, while the wrappers and the cards on which the bottles are mounted are adorned with the very appropriate emblem of a lighthouse, with the motto, "Steche Fest," as a trade-mark. Mr. Smeeton has also sent us a sample of his orange quinine wine, which deserves commendation. We may mention once more that quinine wine may be sold without any licence.

A "Special" of the *Daily Telegraph* thus compliments the chemists and druggists of Hastings:—"How came I to make such a mistake about Hastings, the place where chemists' shops abound and good taste is so universal? Don't be afraid: Hastings does not encourage a dozen chemists' shops in a street, chemists' shops next door to one another, chemists' shops in the new town and old, because Hastings is ill and requires prescriptions. Quite the contrary, the idea is to increase the colour and artistic effect of the shop windows; and I verily believe that the Hastings shopfronts would make Paris envious, and drive Brussels out of the field. I believe the chemists of Hastings are paid by the town for decorative purposes. With their bottles, and patent medicines, and white powder and blue glass, and variegated drops, and polished mahogany, and glittering dodges of all kinds, they decidedly add to the dazzling effect of Hastings. The chemists of Hastings run a hard race with the greengrocers, who have all been to Paris, and taken a lesson in shopdressing from Chevet."

BANKRUPTS DISCHARGED.

BAIRD, JAMES, George-street, Glasgow, (one of the partners of Ogilvie and Co.), Croy, manufacturing chemist and oil merchant. Sequestrated Dec. 9, 1872, discharged Aug. 25, without composition.

PARTNERSHIPS DISSOLVED.

CANTRELL and HARVEY, Wirksworth and Cromford, Derbyshire, surgeons. Aug. 7.

CAPEL, CARLES, AND LEONARD, Hope Chemical Works, Hackney-wick, manufacturing chemists and oil and petroleum importers. Sept. 1.

HODGSON AND HANSON, Savile-town, near Dewsbury, chemists. Aug. 27. Debts by John Hanson.

JAAP AND PURDIE, Hamilton-place, Hillhead and Ashton-place, Dowanhill, Glasgow, pharmaceutical chemists and druggists. Sept. 1.

LEMMON and FULLER, King's Lynn and Downham Market, chemists. July 1.

LOVE and POCKLINGTON, Wimbledon, surgeons. Aug. 18.

MOCKETT AND TIMS, Wantage, Berks, surgeons. Sept. 1. Debts by George T. Mockett.

PARSON, T. C., SONS, and BAYSTON, Great George-street, Bristol, surgeon-dentists. July 10.

POTHS, HAAS, and SEMPLE, Bevis Marks, chemical apparatus dealers. Aug. 2.

SPENCE BROTHERS and Co., Ashton-road, Manchester, chemical manufacturers. May 9.

STEWART and BROOKSBANK, Leeds, manufacturing chemists. Aug. 19. Debts by James Stewart.

TAYLOR and BULMER, Wakefield, manufacturing chemists, and cake and seed merchants. July 22. Debts by Charles E. Taylor.

WEST and TOTHILL, Launceston, Cornwall, surgeons. Aug. 1.

WOOD, BENJAMIN and WILLIAM, Halifax, druggists. Aug. 11. Debts by Benjamin Wood.

LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the petitions:—

EDWARDS, WILLIAM, High-street, Shrewsbury, chemist. Aug. 16.

GARSED, JOSEPH, Elland, Yorks, chemist. Sept. 1.

HEDLEY, ROBERT, York, late publican, prev. chemist and soda-water manufacturer. Aug. 16.

HORDEN, THOMAS REAR, Saint Augustine's, Norwich, chemist. Aug.

JESSOP, JOSIAH BENJAMIN, Dudley Port, late Wolverhampton, chemi Aug. 7.

JONES, JOSEPH FROWD, Pershore-street, Birmingham, surgeon. Aug.

MACHON, ROBERT, Ripley, Derbyshire, chemist. Aug. 19.

PAIN, JOHN HOPPER, Hadleigh, Suffolk, chemist. Aug. 18.

VENABLES, GEORGE, Spon-lane, West Bromwich, chemist. Aug. 8.

WELLS, ARTHUR, Sansome-walk, Worcester, dentist. Sept. 4.

TRUSTEES APPOINTED.

CARR, WALTER P. (Liq.), 19, Elgin-road, Maida-vale, chemist. Trust James Boyes, 2, Carey-lane, General Post Office, accountant.

FERGUSON, WILLIAM E. L. (Bkt.), 43, Claremont-square, Clerkenwell, M Trustee, Charles Bowen, 74, Basinghall-street, accountant.

HIGGS, FREDERICK S. (Liq.), Heighington, Lincolnshire, surgeon. Truste Joseph Malthy, chemist, and George Jay, accountant, both Lincol

LANCASHIRE, JAMES (Liq.), Whitefield, Pilkington, Pr stwich and R cliffe, surgeon. Trustee, Adam Murray, 104, King-street, Manchest accountant.

MEDLAND, JANE, trading as WILLIAM MEDLAND (Bkt.), Brick Hill-la Upper Thames-street, and Bramley, near Guildford, manufactur chemist. Trustee, John C. Collier, Bankhouse, Godalming, accounta

MOUNTAIN, ROBERT (Liq.), Harrogate, chemist. Trustee, John Thompse Harrogate, draper.

WILLIAMS, EDWIN L. (Liq.), High-street, Stroud, chemist. Trustee, Hen Matthews, 7, Old King-street, Bristol, druggist.

DIVIDENDS DECLARED.

BUZZARD, THOMAS H. (Bkt.), Leicester and Blaby, chemist, 2nd and fi div., 9d.; H. Tarratt, 10, Market-street, Leicester

HUTTON, W., Ross, and Co., Burghead, manufacturing-chemists. 1st, 7 W. Grant's, Caledonian Bank-buildings, Elgin, Aug. 25.

OBITUARY.

On the 26th June, Mr. James Collins, chemist and dru gist, of Tewkesbury.

On the 28th June, Mr. William George Tryon, pharmace tical chemist, of Landport.

On the 8th July, Mr. Enos Andrews, chemist and dru gist, of Newton-le-Willows, Lancashire.

On the 21st July, Mr. John Wray Rawling, chemist a druggist, of Hackney-road.

On the 26th July, Mr. William Jabez Halliday, pharm ceutical chemist, of Bury New-road, Manchester.

On the 26th July, Mr. William George Jones, pharm ceutical chemist, of Staines.

On the 30th July, Mr. Joseph Massey, chemist and dru gist, of Oldham.

On the 11th August, Mr. Edward Sutton, chemist a druggist, of Sutton Bridge, Long Sutton.

On the 11th August, Mr. Edward Earl, chemist a druggist, of Sutton Bridge, Long Sutton.

On the 21st August, Mr. Alexander Forbes Allan, chem and druggist, of Fyvie, Aberdeenshire.

On the 22nd August, at 300, High Holborn, in the 86th y of his age, John Mayfield, who for forty-four years held confidential position in the firm of Corbyn and Co., by wh he was much esteemed and valued.

On the 31st August, Mr. William Chellew, chemist a druggist, of Breck-road, Liverpool.

SAID a woman to a physician who was weighing two grai of calomel for a child: "Dinna be so mean wi' it, it is fo poor fatherless bairn."

A LECTURER on natural history was called upon the oth day to pay for a live rabbit he had in a basket in a railw carriage, and which the ticket collector said would be charg the same as a dog. The lecturer vainly explained that was going to use the rabbit in illustration of a lecture he w about to give in a provincial town; and, indignantly taki a small live tortoise from his pocket, said, "You'll be t-lli me next that this is a dog, and that I must pay for it also The ticket-taker went for superior orders, and on his retu delivered this lecture in natural history: "Cats is dogs. a rabbits is dogs; but a tortoise is a hinsect." The profes had to pay for the rabbit.

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

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

DISPOSAL.

Thirty ½-lb. rolls Emp. Cerat. Saponis. Cash. Offers. 11/62.

Sundries and Books. R. C. Mason, Bromsgrove.

Sixty pounds fine new English Honey, 8d. per lb. White, Litcham.

Southall's "Cabinet Materia Medica," good condition. 15s., cost 25s. Cooper, Chemist, Crewe.

Wanted to Sell or Exchange, 12 or 14 lb. Troch. Cinnam., Troch. Paregoric, Troch. Catechu. What offers? 27/61.

Books and Specimens for Minor Examination. Cheap. Alpha, 74, Southampton-row, London.

Balsam Canadens, 3¾ lbs. Balsam Peruv., 1 lb. Offers wanted. Best, Chemist, Bondgate, Darlington.

Fourteen pounds Potass. Iodid. Price 21s. per lb. cash. J. J. Leigh, Chemist, Bishop Auckland.

Chemical Apparatus, suitable for Minor. Cheap. Send for list. C. Burman, Edge-lane, Liverpool.

Potass. Iodid. Pur., and best American Pearl-ashes. Offers Wanted. 22/62.

Colchicum Roots, fresh and dry; and Henbane Seed. All English. R. Lambert, Abingdon.

Quantity G. Opii. Opt., 25s. per lb. 1 lb. sample for P.O.O. Brett, Downham, Norfolk.

Copper, 44-in. diameter, 32-in. high, nearly as good as new. £5 10s. J. Floyd, Bury St. Edmunds.

Set of eight Tooth Forceps, nearly new, in morocco case. Cheap. Appleton, Carlton-road, Attercliffe.

Offers Wanted for an Original Case of Twelve 3-gallon Bottles of Ol. Verbenæ. Wm. Adamson, West-row, Stockton.

To Chemists and Seedsmen. A bargain. Nest of 90 drawers, good as new; well made; 36 large, 54 small. Attenburrow, Hertford.

Five Slate Cisterns, suitable for oils, &c., fitted with brass taps; dimensions and price on application. J. E. Griffith, Chemist, Bangor. x

Two large Portrait Lenses. Cheap. Two good Seed Mills on oak post, 30s. Large Marble Paint Slab, 12s. 6d. W. Sharpe, Madeley, Salop.

Handsome Mahogany Show Case, containing 250 1s. and 6d. Homœopathic Medicines by Epps. Quite new; cost £6 6s. Price £5. J. Isherwood, Chemist, Bromley, Kent.

"Pharmaceutical Journal," First Series, 18 vols.; whole bound in cloth; £4, or highest offer. B., 23, Leinster-terrace, Hyde-park.

Specimen Case, for Minor Examination; varnished deal, 2 drawers, 100 compartments completely filled. 22s. Cambridge, Diss.

Fifty-six pounds Amylum for 20s.; 9 Deck's Cough Elixir, 5s. 3d.; 12 Smith's Extract Calves' Feet, 6s. Diggle, Chemist, Heywood.

Six Sets of Forceps, consisting of eight pairs, 15s. per set; being a bankrupt's stock. Good quality and quite new. Address, J. G., 14, Netherthorpe-street, Sheffield.

Pill Machine, cost 24s., quite new, for 12s. Offers wanted for "Pharmaceutical Journals." Address "Associate," Post-office, Retford, Notts.

Fresh Specimens. Belladonna, Stramonium, Savin, Colchicum. 15d. post free, or state wants. "Fred," at Mr. Mason's, High-street, Bromsgrove.

Pharm. Journ. dispatched same day, Selecta Præscriptis, Lescher's "Elements of Pharmacy." What offers. Charles Lathbury, 27, High-street, Worcester.

Mahogany Wall Case (similar to Fig. 203 Maw); do. counter case (Fig. 164); Avery's agate scales, 12-in., and weights, all nearly new. Offers wanted. Humphries, Garston.

Attfield's "Chemistry," price 8s.; or exchange for late editions of Beasley's "Book of Receipts," and Beasley's "Book of Prescriptions." Alpha, Glen Villa, Lower Edgerton, Huddersfield.

Binocular Microscope, first-class, quite new, with Polariscope and other apparatus, in handsome polished mahogany cabinet. Only £10 10s. Apply, B., 151, Hoxton-street, N., London. w.

Very Cheap. 36 Mahogany Fronted Drawers, with gold labels, 5 feet long, 4 feet high. Also 38 Gallon Store Bottles, with gold labels, bungs and tin caps. Kemp, Chemist, Lincoln.

Fresh Specimens. Conium, Belladonna, Hyoscyamus. Stramonium, Anthemis Nobilis Sabina, Aconite, Ecbalium. Write before the expiration of September to Mr. Judd, 12, Tonsley-hill, Wandsworth.

Botany. An Herbarium, containing the officinal plants and many others, carefully mounted, named, &c. Price 10s. 6d. Worth double. H. H., Charles Humphries, Chemist, Garston.

For immediate disposal, a Druggist's Stock: Specie Jars, Shop Bottles, Ointment and Pill Jars, 24-pill Machine, 1 Counter Glass Case, 2 large Iron Mortars, one on Pedestal, &c., &c.; also a quantity of Pill, Seidlitz, Soda, and Lozenge Boxes. Apply to Wm. Adamson, West Row, Stockton.

A Quantity of Books, suitable for passing the Prelim., very cheap. Enclose stamp for list. Pocket Magnifying Glasses, price 5s. 6d. and 2s. 3d.; suitable for Botanical or Physiological investigation. A batch of Difficult Prescriptions, consisting of Emulsions, Powders with fractional quantities, &c., suitable for the Minor, 2s. 6d. 13/62.

"The Anatomy of the External Form of Man; for the Use of Artists, Sculptors, and Painters, with an Atlas of 28 Plates," 4to.; price 20s. Muspratt's "Chemistry," in 2 vols., half-bound, roan; price 40s. Tincture Press, as Fig. 2 Maw's Catalogue, on a stand 3 feet high; price 8s. Drugs or Patents in exchange. P. A. S., 70, Hyde-road, Hoxton, N.

Four handsome 8-gallon Show Bottles and Stands. Price £3 15s., bargain. A very handsome Vienna Regulator Clock, glass front, 40 by 11 in., inlaid case. Quite new. Only £3 17s. 6d. Suitable for a shop or hall. Bargain, First-class Magic Lantern Screen and 80 Slides, Chromatropes, Comics, Tales, &c.; equal to new. Price £8 10s.; cost double. Apply, Chemicus, 151, Hoxton-street, N., London.

Jobs Twenty 2-Gallon Tincture Bottles. 6 lb. and 4 lb. Jars, with Covers. A quantity of 2, 4, 8, 12, 20, and 40 lb. Wide and Narrow-mouth Stoppered and Labelled Bottles, Mortars, Measure Glasses, Cases of Surgical Instruments, Pocket Cases of ditto; Tinctures, Drugs, Chemical Books, a Coffy's Patent Steam Still and Apparatus, and other goods useful to Chemists, &c., to be sold at buyers' prices. J. Stewart, 72, Hatton-garden, E.C.

WANTED.

Acton's "Reproductive Organs." 35/61.

A Tincture Press, from 4 to 6 gallons capacity, in perfect order. N., 111, Oxford-street, Manchester.

One or Two Oil Cisterns, 40 or 50 gallons. Corbett, Chemist, Bromsgrove.

Human Skull in two or four sections; must be in good condition. Frederick Parsons, Leicester.

Wanted to buy Plate Glass Shelving, suited for a Jeweller's Window. 26/61.

"Selecta e Prescriptis," good condition. Price to Judd, 12, Tonsley Hill, Wandsworth.

Attfield's "Chemistry" (last edition); Bentley's "Manual of Botany." State lowest. Student, Post Office, Portabello-road, Notting-hill.

Oil Cistern with Tap (about 40 gallons), loose cover; "Pharmaceutical Journal," a day or two after publication. 62/17.

Four 10 or 12-gallon Carboys, with or without Stands, for Windows. State price. C. B., 24, High-street, Strood, Kent.

A Second-hand Pindar's Pill Machine, middle size; also large Second-hand Iron Mortar. J. Stantial, Corsham, Wilts.

Second-hand Chemist's Lamp (globular shape), red glass with lenses; also Second-hand Root Cutter. David's, 49, Chippenham-road, Harrow-road, W.

Wanted some Oil Cisterns. State size, condition, and price also Oil Cans from ½ to 12 gallons. Bass, Chemist Hemel Hempstead, Herts.

Second-hand Shop Bottles. Wanted about 9 dozen quart and 6 dozen pint, stoppered and gold labelled; must be in good condition and cheap. Apply, with price and full particulars, to W. S., care of Messrs. Hatch, Isaac, & Co., Clifton, Bristol. Can be exchanged for good fixtures, or for cash as desired.

HAVING reached September with a fair wind, we need hardly expect any great sensation in either trade or finance this year. The early part of each year is almost always the most prolific in commercial as well as in political excitement. The reason is probably that a large number of people start the year with a superabundance of energy which gets worn out when the hot weeks arrive, and allows them simply to drift through the later months of the year.

The severe sentence passed on the four American forgers last month may be taken as an indication that English justice will not permit the confidence and credit which give coherence to the enormous ramifications of our commercial system to be lightly played with. Penal servitude for life is a punishment which, if realized in imagination only, is enough to strike a wholesome shudder through any brilliant young man who fancies he sees his way to a fortune by a route less troublesome than the crowded path of honest effort. Macdonnell's attempted semi-justification of himself and his comrades on the ground that English custom in discounting bills was loose can hardly be held to help him. It seems that in America it is usual to send round the bill to acceptors who initial it before it is discounted. This is not done in England, and Macdonnell therefore saw a chance of benefiting himself by taking advantage of the confidence between man and man which, with all the assaults on it, is perhaps the most striking characteristic of large commercial transactions. It was right to punish such men severely. But is not this also a reason why others whose conduct, though not legally criminal, has exactly the same effect in injuring that confidence, should be brought within the pale of retributive justice? The abominable ease with which men can buy a pound's worth of goods and pay five shillings, two shillings, one shilling, or even nothing for them, is a disgrace to our laws, and a standing temptation to gentlemen of a swindling turn of mind. For our part, we only wonder that these American forgers with the shrewdness which they evidently possessed should have chosen such a dangerous career, when there were plenty of methods of plundering their neighbours recognised and protected by the law.

The trade in chemicals is reported in all quarters to have been very satisfactory and steady, but almost absolutely free from speculative tendencies. Forward sales are quite the exception, and only actual wants come into the market. Soda crystals are somewhat weaker. Mercury remains at its recent price of £15 per bottle, but very firm. The official price of iodine has been reduced 3d. per ounce. It is likely that the falling off of the French demand has occasioned this reduction. We do not notice that at present the manufacturers of iodide of potassium have made a corresponding diminution in their quotations, but that of course must follow. The quinine trade is lively. The salt has gone up 9d. per ounce since last month, and there is still an abundant demand. Barks are very little if any dearer, though it is said there is a good deal of rubbish comes to the London market under the tempting title of Cinchona. Cream of tartar is higher; tartaric remains about the same, but citric has made several points advance, and is now firm. The decree of the Peruvian Government in respect to nitrate of soda came into force on September 1st, and as it both charges an export duty and limits the quantity to be exported, it must have the effect of considerably enhancing the price. There is at present a large stock in Liverpool which keeps prices down. According to the decree the quantity exported next year is to be restricted to $4\frac{1}{8}$ millions of quintals (hundredweights).

The drug sales have been well attended, and good business has been done. The only news of any importance is in relation to opium. Nominally the quotations are the same as previously, but the drug is very firm, and is almost certain to command higher prices. We have very reliable information from Smyrna, which confirms former reports of the scarcity of the yield in consequence of the drought. The total stock reported from there is estimated at 3,141 baskets against 4,230 in 1872, and 6,166 in 1871. This includes old stock, which is much larger than in the previous years, making the new supply so much the smaller. There is therefore every probability that good qualities of Turkey opium will reach 30s. before many months, and perhaps will go beyond that figure.

The new crop of rose leaves is reported to be good and abundant, so that somewhat lower prices may be expected. There are also favourable accounts of the Mitcham lavender and peppermint crops. Bergamot is dearer and lemon lower, though there is reason to expect higher quotations in both. Aniseed is higher and very firm. New honey is coming on the market. The French is said to be not equal to the average standard, but Irish and Chilian are reported as excellent.

Manna is likely to be dearer. The stock of balsam of copaiba is still low and no reduction can be anticipated. Jalap is in abundant supply but not of first-rate quality.

From Northern India there are favourable accounts of the indigo crop. In certain parts, however, too much rain has spoilt the prospect of the planters. It is yet too early to form an accurate judgment.

Our predictions with regard to the rise in olive oils have been fully verified. They are in all cases higher again than last month, and the market assumes a firmer aspect every day. For forward sales higher prices are demanded.

Petroleum which has been dull so long, has now experienced a more active demand, and prices are on the move upwards. Referring to the low price to which it has fallen the *New York Shipping List* remarks that such a depreciation has no parallel in the history of any article of merchandise of equal consumption, and one so world-wide in its use for illuminating purposes. So universal has its use become that it cannot now be dispensed with, even at a much higher cost than the present. The consumption has continually increased, even with prices ranging much higher than at present, and would not greatly diminish if values were enhanced 100 per cent. The total export to foreign ports in 1861 was but 1,500,000 gallons from the whole country, and in ten years after (1871) had reached a total amount of 155,613,064 gallons, and this, let it be borne in mind, is entirely independent of our home consumption, the consumption even in cities, where gas is obtainable, being by no means inconsiderable, and almost the only illumination elsewhere. That an article of such universal use, and even necessity, should fall to a point where producers do not receive the cost of production, to say nothing of the value of the article itself, is one of the marvels of the age, and must find its solution some day, either in wide-spread disaster to producers, and cessation of production, or an increase in valuation to something like a paying point. If the price to day were enhanced 100 per cent., it would still be the cheapest and best illuminator in the world. Heretofore, the coal oil of England has prevented any considerable rise there in petroleum, but coal having risen to unprecedented prices, there is no doubt that oil would have advanced accordingly, but for the low price of petroleum, imported from this country."

Monthly Price Current.

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

CHEMICALS.	1873.				1872.			
	s.	d.		s.	d.	s.	d.		s.	d.
ACIDS—										
Acetic .....per lb.	0	4	to	0	0	0	4½	to	0	0
Citric ..... ,,	4	6	..	0	0	4	3	..	4	6
Hydrochlor. ....per cwt	4	0	..	7	0	4	0	..	7	0
Nitric .....per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic ..... ,,	0	8	..	0	0	1	0	..	1	0½
Sulphuric ..... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal .. ,,	1	7	..	1	7½	1	6	..	1	7
powdered ,,	1	7½	..	1	7½	1	7	..	0	0
ANTIMONY ore.....per ton	220	0	..	240	0	270	0	..	290	0
crude ..per cwt	40	0	..	42	0	38	0	..	40	0
regulus.. ,,	0	0	..	0	0	0	0	..	0	0
star .... ,,	57	0	..	58	0	72	0	..	75	0
ARSENIC, lump..... ,,	20	0	..	20	6	18	6	..	0	0
powder.... ,,	10	6	..	0	0	7	9	..	0	0
BRIMSTONE, rough ..per ton	127	6	..	145	0	140	0	..	145	0
roll ....per cwt	9	9	..	10	0	10	0	..	10	6
flour.... ,,	11	6	..	12	6	12	0	..	12	6
IODINE, dry .....per oz.	1	3	..	0	0	1	10	..	2	1
IVORY BLACK, dry..per cwt.	8	6	..	0	0	8	6	..	0	0
MAGNESIA, calcined..per lb.	1	6	..	0	0	1	6	..	0	0
MERCURY..... .. per bottle	300	0	..	0	0	250	0	..	0	0
MINIUM, red .....per cwt.	24	6	..	25	6	21	3	..	21	6
orange .... ,,	35	6	..	0	0	31	6	..	32	0
PRECIPITATE, red ....per lb.	4	11	..	0	0	4	2	..	0	0
white .. ,,	4	0	..	0	0	4	1	..	0	0
PRUSSIAN BLUE ..... ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum .....per ton	180	0	..	185	0	160	0	..	170	0
powder .... ,,	202	6	..	0	0	175	0	..	180	0
Ammonia:										
Carbonate .....per lb.	0	7½	..	0	7¾	0	7	..	0	7¼
Hydrochlorate, crude,										
white..... per ton	650	0	..	0	0	640	0	..	0	0
Britisb (*see* Sal Ammoniac)										
Sulphate .....per ton	350	0	..	360	0	420	0	..	425	0
Argol, Cape .....per cwt	87	0	..	96	6	76	0	..	99	0
Red .... ,,	75	0	..	85	0	75	0	..	86	0
Oporto, red ,,	31	0	..	32	0	34	0	..	0	0
Sicily ... ,,	52	6	..	57	6	67	6	..	70	0
Ashes (*see* Potash and Soda)										
Bleaching powd..per cwt.	12	0	..	0	0	14	0	..	14	3
Borax, crude .... ,,	40	0	..	85	0	40	0	..	75	0
British refnd. ,,	95	0	..	0	0	100	0	..	0	0
Calomel .....per lb.	4	6	..	0	0	3	9	..	0	0
Copper:										
Sulphate .....per cwt.	29	0	..	0	0	33	0	..	0	0
Copperas, green ..per ton	60	0	.	62	6	60	0	..	62	6
CorrosiveSublimate..p.lb.	3	9	..	0	0	3	2	..	0	0
Cr. Tartar, French, p. cwt.	112	6	..	0	0	100	0	..	105	0
brown ,,	95	6	..	100	0	90	0	..	100	0
Epsom Salts ....per cwt.	5	9	..	6	3	5	9	..	6	3
Glauber Salts .... ,,	4	6	..	5	6	7	6	..	0	0
Lime:										
Acetate, white, per cwt.	14	6	..	21	0	14	0	..	22	6
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	45	0
Potash:										
Bichromate ....per lb.	0	8½	..	0	0	0	8	..	0	0
Carbonate:										
Potashes, Canada, 1st sort .....per cwt.	36	0	..	0	0	37	0	..	37	6
Pearlashes, Canada, 1st sort .....per cwt.	47	0	..	0	0	53	0	..	54	0
Chlorate .....per lb.	1	3	..	0	0	1	9	..	0	0
Prussiate ..... ,,	1	4	..	0	0	1	5½	..	1	5¾
red .... ,,	2	10	..	2	11	3	1	..	0	0
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride .....per cwt.	8	0	..	0	0	9	9	..	10	0
Iodide..... per lb.	22	0	..	0	0	32	0	..	0	0
Quinine:										
Sulphate, British, in bottles ..... per oz.	9	3	..	0	0	8	0	..	0	0
Sulphate, French ,,	9	3	..	0	0	0	0	.	0	0
Sal Acetos .....per lb.	1	0	..	0	0	1	4	..	0	0
Sal Ammoniac, Brit. cwt.	44	0	..	45	0	48	0	..	49	0
Saltpetre:										
Bengal, 6 per cent or under ..... per cwt.	25	6	..	26	3	28	3	..	29	3
Bengal, over 6 per cent. per cwt.	23	6	..	25	3	27	0	..	28	0
British, refined ,,	29	0	..	29	6	32	0	..	32	0
Soda: Bicarbonate, p.cwt.	18	0	..	0	0	17	9	..	0	0
Carbonate:										
Soda Ash....per deg.	0	2¾	..	0	0	0	3	..	0	0
Soda Crystals per ton	122	6	..	0	0	137	6	..	140	0
Hyposulphite..per cwt	15	6	..	16	0	16	0	..	17	6
Nitrate .....per cwt.	14	3	..	14	6	13	9	..	15	0
SUGAR OF LEAD, White, cwt.	47	0	..	48	0	45	0	..	0	0
SUGAR OF LEAD, Brown, cwt.	33	0	to	34	0	30	0	to	0	0
SULPHUR (*see* Brimstone)										
VERDIORIS ..... per lb.	1	1½	..	1	6	1	1	..	1	3
VERMILION, English.. ,,	4	6	..	4	8	3	7	..	3	9
China.... ,,	4	3	..	4	4	3	7	..	4	0
DRUGS.										
ALOES, Hepatic....per cwt.	80	0	..	200	0	100	0	..	240	0
Socotrine .. ,,	110	0	..	320	0	160	0	..	420	0
Cape, good.. ,,	30	0	..	34	0	28	0	..	30	0
Inferior ,,	16	0	..	28	0	22	0	..	27	0
Barbadoes ,,	80	0	..	200	0	76	0	..	00	0
AMBERGRIS, grey..... oz.	27	0	..	40	0	24	0	..	27	0
BALSAM —										
Canada ..... per lb.	3	0	..	3	6	1	6	..	0	0
Capivi ..... ,,	2	11	..	3	1	1	11	..	2	1
Peru ..... ,,	8	9	..	0	0	9	6	..	0	0
Tolu ... . ,,	1	10	..	2	0	1	9	..	1	10
BARKS—										
Canella alba ....per cwt.	15	0	..	25	0	15	0	..	25	0
Cascarilla..... ,,	25	0	..	30	0	26	0	..	37	0
Peru, crown & grey per lb.	1	0	..	2	10	1	4	..	3	0
Calisaya, flat ,,	3	0	..	3	0	3	4	..	4	0
quill	3	3	..	3	11	3	6	..	4	3
Carthagena ,,	0	10	..	1	8	0	10	..	2	5
Pitayo .... ,,	0	6	..	2	2	0	6	..	1	9
Red ..... ,,	1	10	..	6	0	1	10	..	6	0
Buchu Leaves ..... ,,	0	1	..	0	9	0	3½	..	1	0
CAMPHOR, China.. per cwt.	72	6	..	0	0	78	0	..	80	0
Japan ,,	80	0	..	0	0	80	0	..	0	0
Refin Eng. per lb.	1	2	..	0	0	1	3½	..	1	4
CANTHARIDES ..... ,,	6	4	..	6	6	5	7	..	6	0
CHAMOMILE FLOWERS p. cwt	45	0	..	75	0	45	0	..	70	0
CASTOREUM ..... per lb.	7	0	..	20	0	3	0	..	30	0
DRAGON'S BLOOD, lp. p. cwt.	110	0	..	240	0	110	0	..	220	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices)										
Anise, China Star pr cwt.	140	0	..	150	0	107	6	..	115	0
Spanish, &c. ,,	20	0	..	38	0	20	0	..	35	0
Beans, Tonquin .. per lb.	1	9	..	2	3	1	4	..	1	8
Cardamoms, Malabar										
good ,,	4	6	..	5	9	6	6	..	7	0
inferior ,,	3	6	..	4	5	5	0	..	6	0
Madras ,,	2	6	..	4	6	2	6	..	6	0
Ceylon ,,	4	3	..	4	6	4	0	..	4	3
Cassia Fistula.. per cwt.	10	0	..	20	0	11	0	..	22	0
Castor Seeds .. ,,	5	0	..	10	0	5	0	..	10	0
Cocculus Indicus ,,	13	0	..	20	6	14	6	..	15	0
Colocynth, apple.. per lb.	0	4	..	0	9	0	3	..	0	6
Croton Seeds .. per cwt.	45	0	..	54	0	55	0	..	59	0
Cubebs ..... ,,	23	0	..	24	0	30	0	..	40	0
Cummin..... ,,	18	0	..	26	0	25	0	..	32	0
Dividivi ..... ,,	11	0	..	15	0	12	0	..	15	0
Fenugreek..... ,,	9	0	..	23	0	12	0	..	22	0
Guinea Grains .. ,,	26	0	..	27	0	37	0	..	39	0
Juniper Berries ,,	9	0	..	10	6	10	0	..	11	6
Nux Vomica.... ,,	8	6	..	16	0	10	6	..	15	0
Tamarinds, East India ,,	5	0	..	20	0	4	0	..	16	0
West India, new ,,	13	6	..	31	0	20	0	..	38	0
Vanilla, large .... per lb.	70	0	..	80	0	45	0	..	55	0
inferior ,,	30	0	..	67	0	27	0	..	40	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, in bond (duty 1d. per lb.) perlb.	0	6	..	0	7½	0	6½	..	0	10½
GUMS (*see separate list*)										
HONEY, Chili .... per cwt.	35	0	..	42	0	31	0	..	39	0
Cuba .... ,,	0	0	..	0	0	35	0	..	50	0
Jamaica.. ,,	25	0	..	36	0	30	0	..	57	0
Australian ,,	22	0	..	37	0	0	0	..	0	0
IPECACUANHA .... per lb.	3	0	..	4	4	4	10	..	5	0
ISINGLASS, Brazil.. ,,	2	10	..	4	10	2	9	..	4	7
Tongue sort ,,	3	3	..	5	3	3	4	..	5	3
East India ,,	2	0	..	4	4	1	0	..	4	3
West India ,,	4	6	..	5	0	4	0	..	4	6
Russ. long staple	8	0	..	12	6	8	0	..	12	0
,, inferior,,	3	6	..	7	6	3	6	..	7	6
,, Simovia	2	6	..	4	6	2	6	..	4	6
JALAP, good ..... ,,	1	4	..	1	6	1	3	..	2	6
infer. & stems ,,	0	9	..	1	0	0	6	..	1	8
LEMON JUICE ... per degree	0	2¾	..	0	0	0	2¼	..	0	2½
LIQUORICE, Spanish per cwt.	0	0	..	0	0	35	0	..	37	0
Italian ,,	60	0	..	90	0	40	0	..	60	0
Liquorice Root ,,	10	6	..	15	0	0	0	..	0	0
MANNA, flaky .... per lb.	2	6	..	3	3	3	3	..	3	6
small..... ,,	1	4	..	1	9	1	10	..	2	0
MUSK, Pod ..... per oz.	23	0	..	40	0	19	0	..	45	0
Grain ..... ,,	50	0	..	57	0	0	0	..	0	0
OILS (*see also separate List*)										
Almond, expressed per lb.	0	11	..	0	0	1	1	..	0	0
Castor, 1st pale .... ,,	0	5½	..	0	5¾	0	5	..	0	0
second .... ,,	0	5	..	0	5¼	0	4¾	..	0	5
infer. & dark ,,	0	4½	..	0	5	0	4½	..	0	4¾
Bombay (in casks)	0	4¾	..	0	0	0	4½	..	0	4½
Cod Liver .....per gall.	3	6	..	6	0	4	6	..	6	3
Croton.....per oz.	0	3	..	0	4	0	3	..	0	4
Essential Oils:										
Almond .....per lb.	30	0	..	0	0	35	0	..	0	0
Anise-seed ..... ,,	10	6	..	0	0	12	0	..	13	0
Bay .....per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot .....per lb.	15	0	..	18	0	8	0	..	15	0
Cajeput, (in bond) per oz.	2	4	..	2	5	0	0	..	0	0
Caraway .....per lb.	5	6	..	6	3	5	6	..	6	3
Cassia ..... ,,	5	9	..	6	0	6	3	..	0	0
Cinnamon .....per oz.	1	0	..	5	0	0	9	..	5	0
Cinnamon-leaf.. ,,	0	1¾	..	0	2	0	2	..	0	5
Citronelle ..... ,,	0	1¾	..	0	2	0	2⅜	..	0	2⅞

Essential Oils, *continued:*—	1873. s.	d.		s.	d.	1872. s.	d.		s.	d.
Clove.....por lb.	5	0	to	5	0	4	5	to	0	0
Juniper ..... „	1	9	..	2	0	1	3	..	2	4
Lavondor..... „	1	10	..	5	6	3	0	..	6	0
Lemon..... „	14	0	..	15	0	5	0	..	15	0
Lemongrass ....per oz.	0	3⅛	..	0	3¼	0	5	..	0	5⅛
Neroli ..... „	0	5	..	0	0	0	5	..	0	0
Nutmeg ..... „	0	8	..	0	8¾	0	7	..	0	8
Orange.....por lb.	8	0	..	11	0	7	0	..	8	0
Otto of Roses....por oz.	13	0	..	23	0	12	0	..	21	0
Patchouli ..... „	3	9	..	4	0	4	0	..	4	3
Peppermint:										
American ....per lb.	17	0	..	18	0	13	0	..	14	0
English ..... „	27	0	..	34	0	30	0	..	33	0
Rosemary ..... „	1	4	..	1	10	1	9	..	2	0
Sassafras ..... „	2	3	..	3	8	3	0	..	3	0
Spearmint ..... „	0	0	..	19	0	4	0	..	16	0
Thyme..... „	1	10	..	0	0	1	10	..	2	0
Mace, expressed .. por oz.	0	2	..	0	3	0	1½	..	0	3
Opium, Turkey ..... per lb.	24	0	..	27	0	20	0	..	22	0
inferior ..... „	12	0	..	20	0	12	0	..	19	0
Quassia(bitter wood) per ton	70	0	..	90	0	60	0	..	90	0
Rhubarb, China, good and fine .....por lb.	2	7	..	5	6	2	3	..	6	0
Good, mid. to ord. „	0	9	..	2	5	0	3	..	2	0
Dutch trimmed „	8	0	..	10	0	9	0	..	9	6
Russian ..... „	0	0	..	0	0	0	0	..	0	0
Roots—Calumba..per cwt.	10	0	..	25	6	23	0	..	40	0
China ..... „	22	0	..	23	0	23	0	..	28	0
Galangal ..... „	18	0	..	26	0	16	0	..	19	0
Gentian ..... „	18	0	..	19	0	20	0	..	22	0
Hellebore ..... „	30	0	..	33	0	30	0	..	32	0
Orris..... „	36	0	..	80	0	40	0	..	70	0
Pellitory ..... „	38	0	..	39	0	27	0	..	38	0
Pink.....per lb.	1	0	..	1	3	0	9	..	1	3
Rhatany ..... „	0	5	..	1	4	0	4	..	0	11
Sencka..... „	4	0	..	4	6	4	0	..	4	1
Snake ..... „	1	3	..	1	9	1	1	..	1	2
Saffron, Spanish .. „	24	0	..	25	0	27	0	..	0	0
Salep .....per cwt.	170	0	..	180	0	170	0	..	200	0
Sarsaparilla, Lima per lb.	0	5¾	..	0	7	0	7½	..	0	9
Para..... „	1	3	..	0	0	1	2	..	1	3
Honduras ..... „	1	1	..	1	8	1	2	..	1	8
Jamaica ..... „	1	6	..	2	4	1	7	..	2	11
Sassafras .....per cwt.	0	0	..	0	0	0	0	..	0	0
Scammony, Virgin ..per lb.	26	0	..	31	0	26	0	..	32	0
second & ordinary „	11	0	..	25	0	10	0	..	25	0
Senna, Bombay .... „	0	1	..	0	5	0	1½	..	0	4
Tinnivelly ..... „	0	1¼	..	1	6	0	1⅝	..	1	2
Alexandria..... „	0	4	..	1	10	0	2½	..	2	1
Spermaceti,refined.. „	1	6	..	0	0	1	6	..	0	0
American ..... „	1	2	..	1	3	1	2	..	1	3
Squills ..... „	0	1½	..	0	2	0	1	..	0	2
GUMS.										
Ammoniaci drop ..per cwt.	80	0	..	130	0	140	0	..	200	0
lump .. „	50	0	..	80	0	80	0	..	130	0
Animi, fine washed „	220	0	..	270	0	280	0	..	330	0
boldscrapod „	180	0	..	220	0	220	0	..	280	0
sorts ..... „	100	0	..	230	0	140	0	..	230	0
dark ..... „	80	0	..	95	0	90	0	..	130	0
Arabic, E. I., fine	65	0	..	75	0	70	0	..	84	0
pale picked .. „	75	0	..	78	0	75	0	..	84	0
srts, gd. to fin „	50	0	.	60	0	60	0	..	69	0
garblings.. „	20	0	..	45	0	23	0	..	50	0
Turkey,pick. gd to fin. „	150	0	..	230	0	160	0	..	230	0
second & inf. „	80	0	..	140	0	85	0	..	150	0
in sorts .. „	51	0	..	70	0	65	0	..	80	0
Gedda.... „	21	0	..	35	0	30	0	..	42	0
Barbary, white .. „	50	0	..	57	0	50	0	..	55	0
brown .. „	28	0	..	38	0	36	0	..	44	0
Australian ..... „	27	0	..	45	0	29	0	..	45	0
Assafœtina,com.to gd „	23	0	..	70	0	75	0	..	100	0
Benjamin, 1st qual. „	170	0	..	480	0	200	0	..	520	0
2nd „ „	160	0	..	210	0	150	0	..	210	0
3rd „ „	70	0	..	85	0	67	0	..	90	0
Copal, Angola red „	120	0	..	135	0	140	0	..	150	0
Benguela .. „	110	0	..	115	0	110	0	..	115	0
Sierra Leono..por lb.	0	8	..	0	9	0	3½	..	0	11
Manilla ....por cwt.	13	0	..	27	0	17	0	..	39	0
Dammar, pale .... „	43	0	..	49	0	47	0	..	58	0
Euphornium ..... „	11	0	..	15	0	15	0	..	17	0
Galbanum ..... per lb.	1	0	..	2	0	0	0	..	0	0
Gamboge,pckd.pipo per cwt.	220	0	..	300	0	270	0	..	310	0
Guaiacum .....per lb.	0	8	..	2	0	0	8	..	2	8
Kino.....por cwt.	50	0	..	85	0	50	0	..	85	0
Kowaie, rough.... „	12	0	..	27	0	0	0	..	0	0
scraped .. „	30	0	..	39	0	0	0	..	0	0
Mastic, picked.....per lb.	5	0	..	6	0	0	0	..	7	0
Myrrh, gd. & fine per cwt.	120	0	..	240	0	120	0	..	200	0
sorts.....	40	0	..	110	0	78	0	..	115	0
Olibanum, p. sorts	70	0	..	77	0	73	0	..	77	0
amber & ylw.	00	0	..	70	0	04	0	..	72	0
garbliugs .... „	22	0	..	40	0	20	0	..	33	0
Senegal .....por cwt.	60	0	..	65	0	70	0	..	80	0
Sandarac ..... „	55	0	..	94	0	04	6	..	100	0
Shellac, Orange.... „	192	0	..	205	0	140	6	..	177	0
Livor..... „	135	0	..	190	0	125	0	..	135	0
Thus..... „	18	0	..	30	0	20	0	..	21	0
Tragacanth, leaf.. „	260	0	..	410	0	200	0	..	450	0
in sorts „	60	0	..	160	0	110	0	..	130	0
OIL.	£	s.		£	s.	£	s.		£	s.
Seal palo.....per tun	34	0	..	0	0	88	10	..	0	0
yellow to tinged „	32	0	..	33	0	83	0	..	37	10
brown..... „	30	0	..	31	0	30	0	..	32	10
Sperm ..... „	91	0	..	92	0	84	0	..	85	0
Cod ..... „	36	0	..	0	0	37	0	..	38	0

Oils, *continued:*—	1873. £	s.		£	s.	1872. £	s.		£	s.
Whale, SouthSea, palo,pertun	33	0	to	33	10	33	0	to	0	0
yellow „	32	0	..	32	10	36	0	..	37	0
brown „	30	0	..	31	0	32	0	..	33	0
East India, Fish „	20	10	..	0	0	28	15	..	28	0
Olive, Galipoli ....per ton	0	0	..	45	0	46	10	..	47	0
Trioste ..... „	43	10	..	0	0	45	10	..	46	0
Levant ..... „	40	10	..	41	0	43	10	..	44	0
Mogador ..... „	40	10	..	0	0	43	0	..	0	0
Spanish ..... „	42	10	..	43	0	45	0	..	46	0
Sicily ..... „	0	0	..	0	0	45	0	..	45	10
Cocoanut, Cochin .... „	38	0	..	38	10	37	10	..	38	0
Ceylon.. „	33	5	..	33	10	35	10	..	36	15
Sydney „	28	0	..	33	0	31	0	..	35	10
Ground Nut and Ginoelly:										
Bombay	0	0	..	0	0	0	0	..	0	0
Madras.....	36	0	..	0	0	0	0	..	0	0
Palm, fine	37	0	..	37	10	38	10	..	38	15
Linseed	32	10	..	32	15	36	5	..	36	10
Rapeseen, English, pale ..	37	0	..	0	0	40	5	..	40	10
brown.....	35	0	..	0	0	35	10	..	0	0
Foreign palo....	37	10	..	38	0	41	0	..	0	0
brown.....	0	0	..	0	0	38	0	..	0	0
Cottonseed	30	0	..	31	0	32	10	..	32	15
Larn.....	44	0	..	0	0	44	0	..	45	0
Tallow	29	0	..	0	0	36	0	..	0	0
Turpentine, American, cks.	32	6	..	0	0	0	0	..	0	0
French, „	0	0	..	0	0	37	0	..	0	0
Petroleum, Crude	0	0	..	0	0	0	0	..	0	0
	s.	d.		s.	d.	s.	d.		s.	d.
refined, per gall.	1	2	..	1	3	1	5¾	..	1	6
Spirit „	0	0	..	0	10	1	2	..	0	0
SEEDS.										
Canary .....per qr.	43	0	..	58	0	43	0	..	52	0
Caraway, English per cwt.	33	0	..	43	0	33	0	..	44	0
German, &c.....	26	0	..	30	0	29	0	..	30	0
Coriander	20	0	..	24	0	20	0	..	25	0
Hemp.....per qr.	40	0	..	44	0	40	0	..	46	0
Linseed, English per qr...	53	0	..	68	0	0	0	..	0	0
Black Sea & Azof	59	6	..	60	0	59	0	..	0	0
Calcutta „	63	0	..	63	3	64	0	..	64	6
Bombay „	64	0	..	0	0	64	6	..	0	0
St. Petrsbrg. „	58	0	..	59	0	57	6	..	0	0
Mustard, brown..per bshl.	13	0	..	16	0	13	0	..	16	0
white.. „	8	0	..	9	0	3	0	..	9	6
Poppy, East India per qr.	60	0	..	60	6	60	0	..	61	0
SPICES.										
Cassia Lionea ....per cwt.	76	0	..	80	0	90	0	..	102	0
Vera ..... „	27	6	..	55	0	33	0	..	70	0
Buds ..... „	117	6	..	120	6	125	0	..	130	0
Cinnamon, Ceylon,										
1st quality ....per lb.	1	7	..	3	6	2	8	..	3	9
2nd do. ..... „	1	4	..	3	1	2	1	..	3	4
3rd do. ..... „	1	0	..	2	10	1	8	..	2	4
Tellicherry ..... „	2	7	..	3	0	2	9	..	3	2
Cloves, Penang.... „	1	1½	..	1	2½	1	3	..	1	5½
Amboyna..... „	0	7½	..	0	11	0	6½	..	0	11
Zanzibar ..... „	0	10	..	0	0	0	6	..	0	0
Ginger, Jam., fine per cwt.	110	0	..	252	0	96	0	..	200	0
Ord. to good .. „	66	0	..	100	0	48	0	..	87	0
African..... „	53	0	..	0	0	43	0	..	0	0
Bengal ..... „	51	0	..	0	0	37	0	..	0	0
Malabar ..... „	50	0	..	0	0	0	0	..	0	0
Cochin ..... „	60	0	..	120	0	44	0	..	130	0
Pepper, Blk, Malabar, per lb.	0	7½	..	0	8	0	6¾	..	0	7½
Singapore..... „	0	7	..	0	0	0	6¾	..	0	0
White, Tellicherry „	2	0	..	0	0	0	0	..	0	0
Cayenne ..... „	1	0	..	2	0	1	6	..	1	11
Mace, 1st quality ..per lb.	3	7	..	4	2	3	11	..	4	4
2nd and inferior.. „	2	11	..	3	6	3	6	..	3	10
Nutmegs, 73 to 60 to lb.	3	3	..	4	5	3	4	..	4	0
00 to 80 „	3	1	..	3	2	3	2	..	3	3
132 to 95 „	2	7	..	3	0	2	9	..	3	1
Pimenta	0	2½	..	0	3	0	3	..	0	
VARIOUS PRODUCTS.										
COCHINEAL—										
Honduras, black ..per lb.	2	3	..	3	3	2	5	..	3	3
„ silver .. „	2	3	..	2	6	2	2	..	2	6
„ pasty .. „	2	0	..	2	2	1	11	..	2	1
Moxican, black .... „	2	3	..	2	5	2	5	..	2	8
„ silver .... „	2	0	..	2	1	2	2	..	0	0
Teneriffo, black....	2	2	..	3	9	2	4	..	3	9
„ silver.... „	2	2	..	2	4	2	2	..	2	5
PUMICE STONE ..por ton	130	0	..	300	0	200	0	..	320	0
SOAP, Castile ....per cwt.	33	0	..	34	0	35	0	..	36	0
SPONGE, Turk. fin pkd pr lb.	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	0	..	3	6	0	6	..	2	6
TERRA JAPONICA—										
Gambier .. per cwt.	24	6	..	0	0	24	0	..	24	6
Free cubes „	32	6	..	38	0	27	6	..	28	6
Cutch ..... „	19	6	..	21	6	22	0	..	25	0
WOOD, Dye, Bar ..per ton	£3	10	..	£3	12/6	£3	10	..	£3	12/
Brazil, Branch .... „	27	0	..	30	0	25	0	..	48	0
„ Logs ..... „	9	0	..	16	0	9	0	..	15	0
Cam ..... „	12	0	..	25	0	15	0	..	18	0
Fustic, Cuba..... „	8	10	..	9	10	8	10	..	9	10
Jamaica ..... „	6	0	..	0	10	6	0	..	8	0
Logwoon, Campeachy „	9	0	..	9	10	9	10	..	10	0
Honduras ..... „	6	10	..	7	0	6	0	..	0	0
St. Domingo .... „	5	5	..	5	10	4	0	..	5	0
Jamaica ..... „	4	12/0	..	4	15	4	0	..	4	10
Lima, first pilo.... „	10	0	..	11	10	8	10	..	9	10
Red Sandeas .... „	5	17/0	..	6	0	6	17/6	..	7	0