THE MONTH

LAW AND CRIME.

BREACH OF AGREEMENT.—TABRAHAM *v.* FOGGITT.

This case was lately tried before Mr. Justice Blackburn at Leeds. The action was brought to recover damages for breach of agreement. The plaintiff is at present a traveller in the employ of a firm of wholesale druggists at Leeds, and the defendant is a chemist and druggist at Thirsk. The alleged agreement resulted from correspondence that had been carried on by the parties for years. They were on very intimate terms until the alleged breach of agreement, Mr. Tabraham having formerly been an apprentice with Mr. Foggitt's father. At the close of 1863 the defendant stated that he intended to retire from active business in the following autumn, and offered the plaintiff the post of manager of the wholesale and retail trade with 25 per cent. of the profits over £1,000, a salary of £250 per annum, and 10s. per week for assistant's board. The defendant afterwards agreed to allow the plaintiff to inhabit the house attached to the shop at a reduced rental. At that time Mr. Tabraham had been for some years in the employ of Messrs. Walton and Turner, of London, and was in the receipt of £200 per annum as salary. According to arrangement Mr. Tabraham went to Thirsk on the 29th March, 1864, and commenced work, on the understanding that he was engaged for the term of three years. He found, however, that the arrangement as to the dwelling-house was not to be carried out, and he was obliged to hire apartments until Mr. Foggitt should vacate the house according to the bargain. In October, the defendant informed the plaintiff that he had changed his mind as to the arrangement between them, and that they could not act upon it longer than to March of the present year, when Mr. Tabraham would require to obtain another situation. If the plaintiff could obtain a suitable situation, he would compensate him liberally, and if he would like a sum of money advanced he would be glad to do so. The plaintiff replied that he had expected to remain for three years, and that he was sorry there should be any breach. The defendant said he had compromised himself, and that he would give plaintiff £125 and £25 for his expenses. Mr. Tabraham employed himself during the winter in endeavouring to obtain another situation or a business; but without success. In February, Mr. Foggitt again reminded the plaintiff that their agreement must come to an end in March, and repeated his former offer, which Mr. Tabraham would not accept. Ultimately, the plaintiff obtained his present situation at a salary of £150, having also to pay a rent of £21 and £5 taxes. Damages were estimated at £390. The evidence of the plaintiff having been given, the defendant's counsel said he felt he could not contest his friend's interpretation of the letters. A consultation having taken place, it was announced that it had been arranged to accept a verdict for the plaintiff; damages £225. Verdict accordingly.—His Lordship informed the jury that the plaintiff by having saved a stamp of sixpence had been fined £11 for doing so.

A RASCAL PUNISHED—ACKLAND *v.* MEREDITH.

At the Central Criminal Court on the 19th ult. William Dykes Meredith, 42, chemist, was indicted for unlawfully causing and procuring to be written and published, in the county of Surrey, a certain false, scandalous, and defamatory libel of and concerning Emily Sophia Ackland. It appeared that the prosecutrix had engaged the prisoner, a married man, to manage the business in Church-street, Rotherhithe, which had fallen into her hands on the death of her husband in 1863. As his conduct was good and the business appeared to be improving under his management she signed an agreement with him for seven years, at a salary of £60 a year and his board and lodging. Shortly after this he made proposals to her of a most insulting character, and told several persons the most atrocious falsehoods about her. When desired to leave his situation he refused, and she had to take proceedings in Chancery, and an order was immediately made restraining him from interfering in any way with the business, and a further order was made upon him to account for all moneys which he had received. After these proceedings had been taken he commenced writing letters of a most infamous nature to her, charging her with having been intimate not only with himself but with others. The effect of this persecution was to make the prosecutrix seriously ill, and her friends becoming acquainted with it instituted the present proceedings.

The prosecutrix having concluded her evidence, which she gave in the clearest possible manner, was subjected to a most unmanly and scandalous cross-examination by the prisoner, who interrogated her in detail respecting the intimacy which he alleged had taken place between them. To the entire satisfaction of every one in court, he failed to shake her testimony, she giving her answers in the negative to his questions in the most positive manner.

The Common-Serjeant having summed up, the jury immediately returned a verdict of *Guilty*. In passing sentence the Common-Serjeant said that the crime the prisoner had been convicted of was a most infamous one, and his conduct throughout most disgraceful and unmanly. He should pass upon him the full sentence allowed by law, and that was two years' imprisonment.

JONES *v.* FAY.

Those who read our report of this case—the action against the chemist for alleged malpractice in treating the plaintiff with blue pill to an injurious extent—will be sorry to learn that the plaintiff died within twenty-four hours of the verdict in his favour. It was predicted by the medical witnesses that he could not survive above a few weeks. Unhappily—perhaps from the excitement of the trial and his protracted examination—their predictions were more than verified. At the inquest held on the body the following verdict was returned:—"We find that the deceased Henry Fitzroy Jones, was found dying, and did die, from the mortal effects of an attack of bronchitis, with emphysema of one of the lungs, and a diseased state of the heart, and other diseased conditions; and the jurors further say that the said death of the said deceased was the result of natural causes, accelerated by a weakness produced by excessive salivation."

GAZETTE.

BANKRUPTS.

MEARING, CHARLES, late of Union-street, Somers-town, manufacturing chemist.
STOCKWIN, EDWARD GEORGE, Sheffield, photographer.

PARTNERSHIPS DISSOLVED.

FIELD, W., and HARE, R. F., Apple-yard, Seward-street, Goswell-street, manufacturing chemists.
LEE and ARMITAGE, Rastrick, Yorkshire, manufacturing chemists.

POISONING BY MISTAKE.—"An inquest has been lately held at Brighton on a gentleman of eighty years of age, who died from taking tincture of aconite in mistake for tincture of henbane. The evidence was somewhat vague, but the inquiry ended in a verdict equivalent to manslaughter against Mr. Noakes, a highly respectable druggist in the town." We quote from the *Lancet*. In our next we will give full particulars of this painful case.

DISPENSARY PHYSICIANS.—At a late meeting of the governors of the Newark Dispensary, a resolution was passed, the effect of which is to disqualify physicians actually practising as apothecaries from being elected to the office of physician to the dispensary.

CHAMPAGNE FOR THE MILLION.—A chemist within the postal district has recently been purchasing low French white wine or sherry, with which the market is at present glutted. The operator places it in bottles of the orthodox shape, and submits it to the action of a soda-water machine, by which it is copiously charged with carbonic acid, giving it the required degree of effervescence, which of course disappears soon after the bottle is opened. A tinfoil capsule and an attractive label are then added, which render this exhilarating beverage fit for the market, where, to our knowledge, it has been sold and is now on offer.—*Wine Trade Review.*

THE CHEMIST AND DRUGGIST

LONDON, SEPTEMBER 15, 1865.

CORRESPONDENCE.—All communications should be addressed to the Editor, at 24, BOW-LANE, E.C.; those intended for publication should be accompanied by the real names and addresses of the writers.

QUERIES.—The Editor cannot undertake to attend to those which are anonymous, or to send answers through the post.

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

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The CHEMIST AND DRUGGIST is published on the Fifteenth of every month, and regularly supplied direct to the Members of the Trade in Great Britain, Ireland, the Colonies, and all the principal seats of foreign commerce.

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

THE BIRMINGHAM CONFERENCE.

As at Bath, so at Birmingham, the British Pharmaceutical Conference advanced pharmacy, exposed adulteration, and promoted good-fellowship. The papers brought forward illuminated many dark spots in the domain of pharmacy, and revealed many untrodden paths of research. Some of them gave the results of investigations that must have occupied much time, yet their authors were busy men who could hardly be expected to devote their little leisure to the pursuit of science. With such a leader as Mr. Deane, who admitted that he derived his chief amusements from his own business, and such a band of earnest workers as we met last week, the Conference will increase in strength and importance every year. Our long report of the proceedings has left us little space for editorial remarks, but we cannot conclude this brief article without alluding to the warm welcome which the members from London and other places received from their Birmingham brethren. The attendance of the latter at the sittings of the Conference was not as good as we think it ought to have been, but the working members of the Local Committee, headed by Mr. Dymond, did everything that could be done to lighten the labours of the Executive body, and to promote the comfort of their numerous visitors.

In our next we shall discuss the results, both scientific and social, of this gathering of pharmaceutists in the "hardware village."

METALLIC CAPSULES.

THE present position of the Chancery suits commenced by Mr. Betts against vendors of articles bearing metallic capsules is explained by the following letter, which we reprint from the *Pharmaceutical Journal*:—

"1, East India-avenue, Leadenhall-street, London, E.C.,
"August 17, 1865.

"Mr. Elias Bremridge, Secretary to the Pharmaceutical Society.

"Dear Sir,—We beg to acknowledge receipt of your note, requesting us to advise whether capsuled articles can now, with safety from suit, be taken into or kept in stock.

"We are not in a position to report the termination of either of the numerous Chancery suits relating to capsules in which we appear for the defendants. Probably the defence will be successful; and there exist grounds for believing that the plaintiff will abandon his suits, and perhaps promise not to institute other like suits against retailers (to the present time) of capsuled articles; but nothing definite has been arranged, and we cannot modify the opinion expressed in ours of the 22nd July, to the effect that 'the only course, now really safe from the annoyance of suit, is neither to take nor keep in stock any capsuled article.'

"Each dealer in articles capsuled has it in his own power to guard against the possibility of being annoyed by suit; he cannot be protected if he will not guard himself.

"We are, dear Sir, yours truly,
"FLUX AND ARGLES

"P.S.—We cannot advise that retailers in the Colonies are free from the annoyance of suits. "F. & A."

We also reprint, for the information of our subscribers who are not connected with the Pharmaceutical Society, an important communication respecting the "Guaranteed Defence Fund," which has been established "to meet the necessary expenses involved in the defence or protection of those dealers in capsuled articles against whom proceedings are, or may be, instituted, but who, if offenders at all, have only been so unwittingly or unintentionally":—

"Sir,—May I request the favour of your inserting the following note and remarks in reference to the fund now forming for the protection of the innocent defendants in the recent suits in Chancery?—

"'Gentlemen,—By the request of the committee, I beg to enclose you a list of subscribers to the Defence Fund for your favourable consideration.

"'Oblige me by returning it at your earliest convenience.

"'I remain, yours obediently, W. TWINBERROW.

"'2, Edwards-street, Portman-square, W., August 16, 1865.'

"The above, with the list of subscribers, has been forwarded to several of our brethren, and liberally responded to, but one or two of our wholesale friends tell us that the defendants ought to have submitted to the Chancery suits, and then have proceeded against Mr. Rimmel for costs. I am desirous of stating that the form of suit is such as to leave the defendants no remedy, or at the utmost but a very doubtful remedy against Mr. Rimmel, so that to settle and leave damages was impracticable. Now, I think, if they will consider for one moment the enormous expense that would be incurred by more than 500 separate double suits, in some instances against those who really cannot afford it, they will come to the conclusion that the course pursued has been the right one, and had it not been through the decision of an influential meeting held on July 22, when it was agreed that the then several actions should be resisted, perhaps 500 or more retailers would by this time have been in the same predicament as the present defendants; but I can congratulate the retail trade that all our wholesale friends were not of the same way of thinking, but have most handsomely contributed to the fund, which at some future time, I hope, will be made known to the trade generally.

"I remain your obedient servant,
"W. TWINBERROW, Treasurer."

At the last meeting of the Defence Committee it was decided to hold a public meeting of chemists and druggists, perfumers and patent medicine dealers, at 17, Bloomsbury-square, on Thursday, October 5, at 11 o'clock, to take into consideration the present position of these trades in reference to the sale of capsuled articles. It was also decided that 10,000 copies of the following notice to the public should be printed and supplied to those who may make application for them:—

"NOTICE TO THE PUBLIC.

"As the retailing of articles covered with metallic capsules has exposed sellers, and may expose buyers, to suits in Chancery, articles which have hitherto been sold so covered are now sold here *not capsuled.*"

We trust that the important section of the trade not connected with the Pharmaceutical Society will be well represented at the meeting on the 5th of next month.

BRITISH PHARMACEUTICAL CONFERENCE.

BIRMINGHAM MEETING.

President.—H. Deane, Esq., F.L.S.

Vice-Presidents.—Professor Bentley, F.L.S., M.R.C. J. B. Edwards, Ph. D., F.C.S.; J. P. Tylee; Southall.

Treasurer.—H. B. Brady, F.L.S., F.C.S.

General Secretaries.—J. Attfield, Ph. D., F.C.S.; Reynolds, F.C.S.

Local Secretary.—W. Southall, jun.

General Committee.—J. C. Brough; S. Gale, F.C.S.; T. Groves, F.C.S.; D. Hanbury, F.L.S.; A. F. Haselo J. C. Pooley; B. S. Proctor; F. Sutton.

Local Committee.—Adkins, Arblaster, Barclay, Bird, Br (Wolverhampton), J. Churchill, W. J. Churc Dymond, Fleeming (Wolverhampton), Grieves, H worth, Humphries, Hollier (Dudley), G. Johnson, J (Leamington), Palmer, Partridge, Snape, A. Sout W. Southall, Sumner, Thonger, Walker, Whi Wooley.

The members of the British Pharmaceutical Conference have again brought forward and discussed the results of a year's work on subjects connected with Pharmacy, and have strengthened their claim to the support and encouragement of all who are interested in the preparation or sale of medicines. In accordance with previous practice, the Third Annual Meeting has been held at the time and place of the meeting of the British Association for the Advancement of Science. Had the Conference been uninfluenced by the movements of this great body, a more suitable meeting-place could not have been chosen, as Birmingham contains a very large number of chemists and druggists, many of whom are men of mark in the scientific world. The Local Secretary and Committee made all the necessary arrangements for the gathering, and took care that the visitors to this town should have no trouble in finding comfortable quarters. Two large rooms in a building called the Odd Fellows' Hall, in Upper Temple-street, were secured for the Conference. One of these was elegantly furnished as a drawing-room for the use of the members.

The meeting was attended by most of the officers of the Conference; by delegates from the Chemists' Associations of Bath, Leeds, Liverpool, and Nottingham; and by members from many parts of the Kingdom. The presence of Dr. De Vry, Professor Archer, and other distinguished men of science at the sittings, may be noticed as a sign of the growing importance of the Conference.

FIRST SITTING.

The Birmingham meeting was opened on the morning of Tuesday, the 5th inst. The President, Treasurer, General Secretaries, and members of the Committee took their places on the platform soon after ten o'clock and at once proceeded to business.

The PRESIDENT, who was most warmly received by the meeting, stated that letters had been received from Mr. Stanford, the President of the Pharmaceutical Society, Professor Bentley, Mr. Daniel Hanbury, Mr. Braithwaite, Mr. Giles, of Clifton, and Mr. Mackay, of Edinburgh, explaining their unavoidable absence. He then called upon the Secretary to read the names of the gentlemen who had been proposed as members of the Conference.

These names having been read, the President, at the request of the meeting, deposited the ballot; and thus without waste of time upwards of one hundred gentlemen were elected members.

The following report was then read by the Secretary:—

"REPORT OF THE EXECUTIVE COMMITTEE.

"During the interval between the last and present annual meeting, the duties of your Committee have been few and formal.

"The proceedings of the Conference at Bath were fully reported, by the kind permission of the Council of the Pharmaceutical Society, in the *Pharmaceutical Journal* of October and November, 1864, the papers being printed verbatim, and the discussions in abstract. A reprint of that report, to which was appended a statement of the objects, etc., of the Conference, the list of officers for 1864-5, a table of contents, and a list of members, the whole included in a neat paper wrapper, was sent to every member of the Conference as soon after the meeting as possible; the volume will, however, this year be issued earlier. A few surplus copies of the 'Proceedings' were sent to eminent scientific men and societies of Great Britain, America, Germany and France.

"Since the last meeting about fifty names have been added to the list of members. It is gratifying to add, that in addition to these, the ranks of the Conference has been swelled at the present meeting by the enrolment of one hundred gentlemen. Thus has our strength more than doubled during the second year of our existence, the exact number of members being now three hundred and three.

"Early in January of the present year your Committee issued to every member a list of questions for research, accompanied by a request that some one or more of the subjects should be worked out and reported. The result is that twenty-three papers have been sent in, and will be read at the present and subsequent sittings. They will doubtless prove of equal value with those of last year, many of which, it is pleasing to notice, were copied into the scientific journals of Europe and America. In order to give an impetus to the investigation of subjects relating to adulterations, impurities, and faults of manufacture, your Committee, seven months ago, issued a circular to members requesting that specimens of commercial drugs and chemicals might be sent to the secretaries, for distribution to gentlemen willing to analyse the samples of any given preparation, and report the analysis to the annual meeting. The result is, that you will have the opportunity of listening to some interesting papers of this class. But the value and importance of the work might be greatly extended if a larger proportion of members would contribute specimens. The collection of samples from his own or other stocks is an easy matter for any member, but the Committee would especially urge this point on the attention of members who have not time or opportunity to make researches. The names of vendor or maker need not be divulged by the collector, provided each specimen is distinguished by a lettered or numbered label, stating only the name of the preparation.

"In conclusion, your Committee sees no reason to deviate from those methods of accomplishing the objects of the Conference which were proposed when this Association for the advancement of pharmacy was established, and which have hitherto been attended by such satisfactory success. There is work for every member to do; for those who have much time there are subjects to investigate; those who have less time may aid in maintaining the principle of purity in medicine in the manner just indicated; while all may be able to propose subjects for investigation, or aid in promoting both the scientific and social interests of the chemist and druggist by attending the annual meetings."

This report having been adopted, the Treasurer brought forward the following financial statement:—

The Treasurer in Account with the British Pharmaceutical Conference, 1864-65.

Dr.

	£	s.	d.
To Cash in hand, August, 1864	10	12	8
,, 117 Subscriptions— 12 for 1863-4 62 for 1864-5 43 for 1865-6 ..	29	5	0
,, Sale of Proceedings ..	0	5	0
	£40	2	8

Cr.

	£	s.	d.
By Expenses of Bath Meeting—			
Flukes .. £2 3 0			
Bartrum .. 0 7 6			
Clark .. 2 7 0			
	4	17	6
,, Cost of Proceedings—			
Wm. West, Printing Plates .. £4 1 0			
E. J. Taylor, for Printing .. 15 8 6			
	19	9	6
,, Postage	10	5	10
,, Stationary	2	2	5
,, Petty disbursements, including Carriage, Cost of Directing Circulars, &c.	1	3	0
,, Balance in hand ..	2	4	5
	£40	2	8

1865.
August. Balance in hand.. 2 4 5
9 Subscriptions for 1863-4, (still unpaid) 2 5 0
62 Subscriptions for 1864-5, (still unpaid) 15 10 0

Examined and found correct,
JOHN CHURCHILL.
W. SUMNER.

BIRMINGHAM, *August* 22, 1865.

This statement was adopted as part of the report.

The admirable address which we print below without abridgement was then read to a most attentive and appreciative audience:—

THE PRESIDENT'S ADDRESS.

When the British Association for the Advancement of Science met at Newcastle-on-Tyne, and the preliminary meeting of this Conference took place, as it were, under the wing of that cheerful institution, it was with great diffidence and a strong sense of inability efficiently to fulfil the duties of President, that I was induced to take upon myself the responsibility of endeavouring to guide it into what I hoped would be a useful, healthy, and happy existence. When we met again at Bath, and discussed the results of your labours in the interim, it seemed to be your pleasure I should resume the office, and it was with the same feeling of deficiency as on the former occasion, that I acceded to the desire, but with, perhaps, less reluctance, having experienced so much kindness, urbanity, and consideration from all with whom I had been associated, especially from

the treasurer and secretaries, who exerted themselves with characteristic energy to render my duties light and agreeable. These, gentlemen, are the causes that have led to my being in the position in which I appear on the present occasion, and however great may be my deficiencies, I trust they may not stand in the way of your interest and pleasure.

How far our meeting at Bath was a success is evidenced by the number and interest of the papers read on that memorable occasion, the variety of the topics treated upon, and their importance to us as chemists and pharmaceutists. The favourable tone of medical and other journals in their review of our proceedings; the private expressions of medical men of all classes; the gratifying communications from our brethren in the United States of America; and the inauguration of a movement of similar character in Germany, relative to which the attention of this Conference in its business capacity will shortly be invited, alike bear testimony to the sphere of usefulness open to us.

The number of enrolled members on that occasion was comparatively small, but mere numerical strength is no test whereby to gauge our efficiency, for in accordance with our constitution and rules we are all *working* men, hence the life, the power, and the success of that meeting. It is from the united efforts of a few willing heads and hands that all associations must look for their scientific, intellectual, and material advancement. These elements I trust we possess in an eminent degree, and so long as they exist, will our success, prosperity, and usefulness exist also.

Before I undertake any remarks on the progress of pharmacy during the year just now passed, you must permit me to make some allusion to one or two subjects of more general interest which then excited the earnest attention, not only of every grade of the medical profession, but even of a considerable portion of the public, namely, the new British Pharmacopœia, and so-called Accidental Poisoning, neither of which has lost anything of its importance, and at the risk of somewhat tedious repetition I must refer to one or both on this occasion.

A work like the British Pharmacopœia, which was an amalgamation and concentration of three sets of formulæ issued by three distinct medical bodies, was not likely to be presented to the profession and the public without a considerable amount of opposition and virtuous indignation on the part of a large number of those affected by the change, and whose rule of practice had been in accordance with one or another of the three hitherto independent schools of medicine; and such was the case. Whatever were the merits of the new work, and however desirable it might be to reduce the practice of the United Kingdom, and, as far as possible, its dependencies, to one uniform code or standard, the feeling of surprise and vexation at the apparently wholesale slaughter of vested interests was at first very great; but judging from the little that is now heard of the subject, one can but arrive at the conclusion, either that the new regulations laid down are widely ignored, or that chemists, both wholesale and retail, are gradually falling in with them. I hope it is the latter; for so far as my limited means of judging allow me to form an opinion on the subject, the difficulties are not so great as at first sight appeared. On one point at least the Medical Council seem to have been unjustly judged in respect to the form in which the work was issued: I allude to the publication of the bare formulæ for preparations, without note or comment on their properties and doses. But those reviewers who have laid so much stress on this apparent deficiency, seem to have ignored the fact that the Pharmacopœia itself has always been published in the same way. They have failed to distinguish in reality between the Pharmacopœia and its so called "authorized translation." Whether it would not have been politic on the part of the Medical Council to have authorized a similar annotated edition, it is not for us to determine. Such a course would have greatly facilitated its general adoption, and have saved much adverse criticism; still, I repeat this fault must not be attributed to the Pharmacopœia itself.

As you are aware, the Pharmacopœia is at present under revision by a committee whose names are a sufficient guarantee that the work will be performed in a manner satisfactory alike to the prescriber, the pharmaceutist, and the purely scientific man; and I anticipate that the new edition will show that the existing volume contains the nucleus of the best medical code which we have yet seen. Probably it will be found that the chemical notation and some other matters of abstract science which vary with the changing opinions of scientific men will be entirely omitted. That physicians will have greater liberty in the use of the old and convenient apothecaries' symbols for grains, scruples, and drachms, and that with the general revision of the work and the removal of many existing inconsistencies, we shall have the insertion of formulæ for a large number of generally prescribed remedies for which it is most important there should be recognised galenical preparations.

Speaking of the Pharmacopœia at home we naturally turn to the advance of pharmacy in the colonies, which has led to the proposal of the Indian Medical Board to issue a separate work for India; this is now in a fair way towards publication, and I am informed by my friend Mr. D. Hanbury, whose extensive knowledge of Indian Materia Medica will find ample exercise in the part he has been called upon to take in its preparation, that Dr. Waring, late of Travancore, surgeon in the Madras Army, author of "A Manual of Materia Medica and Therapeutics," as well as of numerous papers on Indian drugs, has been appointed editor, a committee being at the same time named to assist in the work. That its object and aim is to supply medical men and pharmaceutists in India, as well as the medical students whose education may be conducted in the Government colleges, with a mass of information respecting the more useful drugs, including their method of preparation and administration. That one object to which particular attention will be given is the introduction into notice of the more important drugs of India, hitherto but little employed except by native practitioners. As it will be necessary in most cases to describe the physical characters of the drugs, to point out their place of growth and manner of preparation, as well as to notice their therapeutic applications, the pharmacopœia of India will have somewhat the character of a dispensatory. It is not intended to introduce into it chemical processes; and certain drugs and preparations specified in the British Pharmacopœia will probably be omitted from that of India, as being either superfluous or not adapted to a hot climate such as that of India. It is intended that the work shall contain lists of drugs in some of the principal Indian languages in order to facilitate the identification of drugs met with for sale in the bazaars.

The other subject to which I alluded in my last year's address was that of poisons, and the responsibilities of pharmaceutists in connection with them. Danger from this source has by no means diminished since the Bath meeting but has rather assumed a new phase, which may be best illustrated by an extraordinary case reported in the *Pharmaceutical Journal*, vol. vi., new series, p. 539. I refer to it to show, or, rather, to remind, you how open and liable we all of us are to be placed in a most trying position without fault of our own, or even previous idea of what is in store for us, and how needful it is to have our senses awake to every source of misconception or mischief in all cases of such nature. Any one can get a powder or two from an apothecary or chemist, and a little poison from another, or, as Emsborough, from the farmer's private store, and artfully substitute the one for the other, and so fix the stigma of crime or carelessness on a perfectly innocent person. The motive for such an act may be either malice towards the vendor of the medicines, or to conceal, or ward off suspicion from the real criminal. The result would be equally disastrous in either case. An apothecary or chemist whose habits are somewhat irregular would be especially open to trick of this kind, and render himself liable to a verdict of manslaughter. We know now what has occurred and may any day occur again;—the lesson should not be lost

In this instance, which I take to be familiar to you from the report above referred to in the *Pharmaceutical Journal*, the source of the poison was most unequivocally indicated by the microscope, and all suspicion was removed from the proprietor of the patent medicine, through the agency of which the fatal effects were said to have been produced. A few copies of the report of the proceedings at the inquest are on the table, and are at the service of those who take interest in the matter. And I hope to have the opportunity of placing before you under a microscope a portion of one of the substituted Steedman's powders, and a portion of that which had been used by the shepherd in dressing the sheep. From these it will be evident to you that the

mate which had caused the death of the child had been taken from the farm stock used by the shepherd, and not supplied direct from any chemist's shelves.

A similar case, recorded by Mr. Orridge, in the *Pharmaceutical Journal*, vol. vi., new series, p. 287, where the substitution was of oxalic acid for sulphate of magnesia, and a suicide committed for the purpose of cheating an insurance office, shows our liability to unfair treatment, and the necessity for vigilance against foul play. The discovery of a few crystals of sulphate of magnesia in the folds of the packets indicated the fraud. A case of poisoning by tobacco is noticed in the same volume, p. 341, and is very remarkable and suggestive. Before closing the subject I may perhaps be allowed to refer you to the report of a committee on "Poisoning, and the Means of Prevention," read at one of the pharmaceutical meetings at Edinburgh, *vide* vol. vi., p. 463. I think we must all arrive at much the same conclusion, namely that cases of poisoning resolve themselves into two classes, those arising from *design*, and those determined by what is called *accident*, the latter often "having associated with it somewhere germs of carelessness." Nevertheless, I still retain my already expressed opinion, that as a body we are proverbially careful, and that a man must be more than mortal to be free from such liability. It is, however, his bounden duty, by the exercise of care and vigilance, according to the nature of his business, to endeavour to reduce risk to its minimum.

Much has been said—I myself have said much, but must still add a few words relative to the social position of Pharmaceutical chemists. For many years past there has been an increasing desire that those engaged in the dispensing of medicine, and in the practice of Pharmacy and Chemistry, should be considered rather as engaged in an honourable *profession*, than as following a mere *trade*, however reputable that may be. The former title implying the educational and other qualifications of a gentleman, the latter mostly a limited education, keeping it on the level of handicrafts. There is no doubt but that for some years past the increase of knowledge following increased facilities for acquiring it has tended greatly to elevate us from the comparatively low position in society which, as a body, we held during the first quarter of the present century; but thanks to the exertions of Pereira, Thomson, Ure, and Fownes; most worthily and efficiently followed by Redwood, Bentley, and others, pupils of all these great and honoured men—pupils whose names I would mention but that we have only to look around this room, and see the men themselves—the love of knowledge and scientific truth has taken deep root, and widely spread its grateful and humanising influence throughout our whole brotherhood; yet however wide spread, however grateful, beneficent, and humanising this scientific truth, and the love of it may be, it is by no means the only requisite to entitle the possessor who has to live by it as a calling to the coveted title of a professional man. The world will accord to the physician, the lawyer, the divine, the architect, or the warrior the right to the title; but to us shopkeepers who are, as it were, rising from the ranks of the army in a struggle for a higher position, many other qualifications will be considered necessary, and must be rigidly practised by us before a wide-awake matter-of-fact public will accept us for what we desire to be thought. The love of truth must not be confined to science, and pursued merely in the desire for gain—although we have an undoubted right to live by our labour, ingenuity, and skill—but the idea associated with it must be extended to every relation of life; we must be reliable men, of unflinching integrity and honour, whose words must be our bond, and whose lives must accord with our profession; and while resolved to be well paid for our labours and responsibilities, and while to meet the demands of an exacting public we must necessarily exert our ingenuity to devise *something new*—whereby we may avoid being left behind in the great struggle for existence—let us beware that we do not trench on other men's grounds or fields of action—let us strive to do unto others as we would have them do unto us. There is no trade or calling with which I am acquainted that is so capable of a high development as that we are privileged to follow. Some of the greatest and most honoured men in Europe have been chemists and pharmaceutists, keeping open shop for the sale of their commodities and the dispensing of medicines. I allude to such men as Godfrey Hankwitz, Luke Howard, William Allen and John Bell in England; Pelletier, Guibourt, Fordas and others in France; Scheele, in Sweden; and in Germany a host of names it is not necessary to mention, all of whom will be handed down to posterity for generations to come as benefactors to society, and fit associates of princes. What these men have done we also can, in some degree at least, emulate; and by following earnestly such examples do all that is needed to induce the world at large to accord to us the position we seek. But if in an unhealthy and questionable competition we strive to secure the largest share of trade to our own individual selves, we shall degenerate into practices which will ever keep us, both in fact and in public estimation, deservedly in the ranks of mere hucksters.

If I may be allowed to explain what I mean by an unhealthy and questionable competition, I would allude first to the low prices frequently charged for all sorts of medicines, whether as dispensed prescriptions, or as drugs demanded over the counter. If such things as tinctura opii, tinct. benzoini comp., tinct. rhei comp., spiritus ammoniæ aromat., sp. etheris, nit., etc., etc., are sold, as in many places they are, at 2d. and 3d. per oz., it is quite clear that if the whole were profit it would not be more than enough; and if properly and honestly made, we know that the proportion of profit must be small and inadequate indeed. But another, and to me, an even more disreputable form in which these malpractices are carried on, is in the attempt which is now so common, to secure profit by pirating preparations which have yielded the legitimate fruit of pecuniary profit to those whose industry and skill have led them to methods of preparing articles in which we, as chemists, are concerned, and whose energy has led to their general introduction. It is not easy for me to pick out special examples, because the most flagrant cases are those connected with secret remedies, which I would not appear to hold in connivance; but the principle is the same in any case, and the dishonesty is not the less apparent because the original article is one which has been introduced in a form I cannot approve. Need I mention "Chlorodyne," and its numberless low-priced imitations, or the French "Papier Moure," which has now become a domestic institution. If half the ingenuity which has been expended in devising a mere deceptive name, like "Papier-Mouche," had been exerted in a legitimate direction, the clever imitator might have possessed an original and more lucrative means of accomplishing the end in view. Many similar cases will occur to you all. Such practices as these are "verily the dead flies which cause the ointment of the apothecary to send forth a stinking savour."

While speaking of the question of the prices charged by chemists for the various articles in which they deal, I may just mention an effort which has been made by the Chemists' Association of Edinburgh to establish a uniform system, by printing periodically under the direction of a committee, a list for the guidance of the chemists in that city. Without entering into the question of the tariff therein adopted, which, as a rule, may be a fair and remunerative one, I might just observe that the charges for dispensing seem to me unusually and unnecessarily low. It is necessary for us, with the conditions of education for the necessary performance of our duties, that our remuneration in respect to dispensing, should assimilate to that of professional men, rather than of mere traders. Neither would my experience lead me to believe that the public require such excessively low charges: indeed I am inclined to think that they value more highly, medicines prepared at the ordinary metropolitan, rather than at competition prices, which imply a less-skilled labour. I would suggest, as worthy the consideration of this Conference, with the success of the Edinburgh experiment in view, whether a committee might not be appointed to consider the whole question, and to report to a future meeting. It is a subject which the Pharmaceutical Society, as a corporate body, cannot move in, and one which is manifestly within our scope.

Another subject which occupied some attention at our last meeting was the use of methylated spirit of wine for purposes not contemplated in the law which gave duty free spirit as a boon to manufacturers. The abuses attending its general introduction are happily, as might have been expected, rapidly working their own destruction. The Excise authorities, who for a long time treated with contempt representations made to them by those practically acquainted

with the devices made use of by unprincipled dealers, and best aware of the extent and nature of the abuses to which it was subject, have at last opened their eyes to at least some of the facts of the case, and they have now issued regulations to restrain the sale of certain abominations, which under the colour of medicine had been largely vended as mere stimulants. These regulations are as follows :—

"That the attention of supervisors and officers be directed to certain apparently medicinal preparations of methylated spirit sold under the name of 'Indian Brandee' and 'Whiskee,' and if in any instance it can be ascertained that these or similar preparations, by whatever name known, are sold or used in any other manner than as medicines the circumstance is to be reported.

"No such preparation, nor sulphuric ether, sweet spirit of nitre, nor any other medicated spirits made from methylated spirit can be legally kept or sold by any licensed spirit retailer."

This is one step in advance, but by these extracts from the lately issued excise regulations it is evident that we are as a body looked upon with less suspicion than some of our neighbours, and it behoves us to beware how by heedless or wilful conduct we do ought to compromise the confidence accorded to us by the inland revenue officers.

With regard to the employment of methylated spirit in medicine, we can only at present say that the action of methylic alcohol, even in its purest form, taken internally is so widely different from that of spirit of wine, and is altogether so uncertain and variable, that the duty of the pharmaceutist is simple and well-defined:—to abstain entirely from its adoption for any pharmacopœia preparation.

There is not much worthy of note in respect to newly-introduced remedies since we last met, but in what is to us of scarcely second importance,—the question of additions to the diet of the sick room;- so large an amount of attention has been attached to two substances, that I can scarcely pass them over unmentioned. The tendency of medical practice in the present day is, perhaps, against us in the matter of physic, but it is assuredly in our favour in respect to regimen, and we may yet live to see the time when our leading pharmaceutists may have to devote a still larger portion of their attention to dietetic articles. The two substances alluded to, namely malt as an addition to the food of infants, and the extractive matter of meat as a means of procuring a convenient and easily digested animal food for the sick room, owe their origin to the suggestions of Baron von Liebig. Stamped with the authority of his name, it will ill become me to express any decided opinion as to the merits of either. Without doubt the malt flour has been found to answer in many cases where other foods have been rejected, though I suspect that its chief value will be most apparent in these exceptional cases. With respect to the extract of beef I shall say nothing; it has come into so extensive a notoriety that its very success seems to be the most likely chance of its failure. It is a subject which I hope will be brought forward by some member for discussion at the present meeting, and failing other introduction, I trust that my friend Mr. Brady, who, I know, has recently been at Munich, its birthplace, if I may so term it, and has had conversations with Professor Pettenkofer, may have something to say with regard to it.

And now, gentlemen, though I might continue this address almost indefinitely, it is time that I concluded, giving place to the business which you are here assembled to transact. From the harmony and good fellowship everywhere manifested in our debates on the last occasion I had the honour of occupying the position as your chairman, I know that no advice is needed from me on the necessity of patience and forbearance in the consideration of the many important papers which will be laid before you, and in the expression of opinion bearing upon them.

But I cannot close my address by merely congratulating you on assembling in this great centre of midland industry without expressing the great gratification I have in meeting so many members newly enrolled. Still less can I omit to say a word or two on our reception here. Some of us, feared that the energetic and kindly hospitality we experienced last year at Bath was too bright a beginning to be taken as a type of what our meetings might be expected to be: but, gentlemen, any forebodings the more anxious of us might have had vanished before we had been in your noble town for an hour, and I feel that I cannot express in terms strong enough the great obligation I feel, not only on my own behalf, but on that of the Conference, to your local committee for the kind attention they have shown in the complete and careful arrangement which they have made for our comfort and convenience. I regret deeply the absence of your local secretary and the cause which prevents his being with us at this meeting, though his place has been well filled by his relative, Mr. Dymond. I am quite sure that when our sittings shall have terminated, we shall look back with the same pleasure to the gatherings we shall have held in this room that accompanies the retrospect of all previous experiences associated with the British Pharmaceutical Conference.

When the applause called forth by this address had ceased,

Mr. T. W. Holdsworth (Birmingham) rose to propose the following resolution:—"That the best thanks of this Conference are due and be now presented to the President, Mr. Henry Deane, for his interesting and valuable inaugural address, as well as for his uniform interest in the progress of Pharmacy and efficiency of the Drug trade in this country." He (Mr. Holdsworth) had listened to the address with inexpressible pleasure, and had been struck with its manly, hearty, and honest tone.

Mr. Jones (Leamington) had great pleasure in seconding the resolution. He had met Mr. Deane at Bath, and had then derived much valuable information from the outpourings of his well-stored mind.

The resolution having been carried by acclamation,

The President returned thanks, and stated that his connection with the Conference could be traced to a rule of conduct that he had laid down for himself when he was apprenticed, and that was to derive his chief amusements from his business.

The first paper read before the meeting was one

ON DISTILLED WATERS. BY MR. J. C. POOLEY.*

This had been called forth by the following questions in the list of subjects for investigation:—"Should distilled waters be prepared from the raw material, or from the essential oil? Can any be advantageously prepared without distillation? What are the advantages and disadvantages of the addition of spirit to, and of the retention of excess of oil in contact with them?"

The author confined his observations to the twelve Waters of the British Pharmacopœia. In speaking of simple *distilled water*, and the importance of its constant use in the dispensing of medicines, he mentioned a case which had lately come within his knowledge, where the employment of ordinary spring water would have altogether changed the appearance of the mixture from the precipitate of the salts of lime. The irregularity of the strength of *camphor water*, as made by the process of the British Pharmacopœia, was next pointed out.

With regard to the cordial aromatic waters, *carraway, dill cinnamon, fennel, peppermint, spearmint*, and *pimento waters* the author ventured to express an opinion that all of them could be better prepared by triturating the essential oil with chalk; and in support of this opinion he exhibited samples prepared by distilling the fresh herb, and samples made from the oils. He thought that *rose* and *elder-flower waters* were best made from the pickled flowers; but the English rose water, however prepared, was inferior to the French *eau-de-rose*. *Cherry-laurel water* as prepared by the process of the B.P. was so uncertain in strength that it should either be abandoned in favour of hydrocyanic acid or its strength be reduced to a definite standard. On this subject he referred the Conference to an elaborate paper in the *Pharmaceutical Journal*, Vol. II., 2nd series, from the pen of Mr. H. N. Draper. The addition of spirit to distilled waters was condemned by experience, as the spirit gradually became converted into acetic acid, and had really no preservative action on the waters.

The President said he felt much indebted to Mr. Pooley for his practical observations on the important subject of distilled waters. He had arrived at similar conclusions

* We can only give brief abstracts of the Papers in this Report.

respecting the advantages of using pickled flowers for rose and elder-flower waters; and also respecting the variation in the strength of cherry-laurel water. He hoped that the latter preparation would soon go out of use.

Dr. Attfield objected to the use of magnesia or chalk for diffusing the essential oils, as many of these contained powerful acids which might combine with the earthy base. Oil of pimento for instance contained eugenic acid which formed with magnesia a definite salt. Silica would be a better material for diffusing the oils than either chalk or magnesia.

Mr. Schacht (Clifton) preferred trituration to distillation; and agreed with Dr. Attfield in thinking silex the best material for diffusing the oils. He used an easily obtainable and very pure form of silex, namely Calais sand.

Dr. Parkinson (Bradford) recommended kaolin, which was a perfectly neutral substance, and had become a commercial article in consequence of its use in photography.

Mr. Caswell (Leamington) could support this recommendation, as he had used kaolin in preparing pimento water with excellent results.

Mr. Reynolds (Leeds) had a decided preference for the process of distillation in the case of dill water. He thought the powdered flint as prepared for the makers of pottery was a much better form of silex than Calais sand.

Mr. Richardson (Leicester), and several other members, spoke in favour of the use of powdered flint.

Dr. Parkinson suggested a chemical mode of preparing fine silica by acting upon soluble glass with a strong acid.

ON BLUE PILL. BY MR. F. B. BENGER.

The author's experiments confirmed the opinion held by many that the mercury in this popular medicine is simply in the state of fine division, not in one of oxidation. After adverting to the fact of the variation in colour, and consistence of the commercial article as being due to difference in the state of division of the mercury, Mr. Benger proposed what he deemed an improvement in the manufacture of blue pill. Instead of rubbing the mercury with the other ingredients until globules ceased to be visible, he suggested the use of mercury already brought to a minute state of division by the action of protochloride of tin on solution of corrosive sublimate, and he exhibited specimens so prepared.

In the discussion which followed the reading of this paper, most of the speakers regarded the proposition of the author as ingenious, and deserving of a fair trial, whilst all urged that it must be proved beyond doubt to be free from unforeseen objections before any change was admissible.

Mr. Dymond (Birmingham) referred to the difference in this medicine, according to its preparation by hand labour or by steam power. With respect to the specimens forwarded by the author, he commended their physical characters.

The Conference then adjourned till four p.m.

The first paper read at the afternoon sitting was

ON THE "IODO-HYDRARGYRIDE OF POTASSIUM" AND "OXIDATION" TESTS FOR METHYLIC ALCOHOL IN THE PRESENCE OF ETHYLIC ALCOHOL OR OTHER ORGANIC BODIES. BY MR. JOHN TUCK.

In a previous paper read at the Bath meeting the author had shown that the iodo-hydrargyride of potassium (formed by dissolving 15 grains of biniodide of mercury and 25 grains of iodide of potassium in 1 oz. of water, and adding 1 oz. of the Pharmacopœia solution of potash) gave a yellowish white precipitate with ordinary spirit of wine, but none with methylated spirit, owing to the presence of acetone in the wood naphtha used for methylating the spirit. He now reported that he had applied the test to all the tinctures of the Pharmacopœia, and had come to the satisfactory conclusion that although many bodies besides acetone prevented the formation of the precipitate, yet that none of these came over on carefully distilling the tincture. The distillate of every tincture prepared with pure spirit gave the precipitate; while no precipitate was obtained from the first portion of the distillate obtained from a tincture prepared with methylated spirit. He strongly eulogised Mr. Miller's oxidation test for methylic alcohol, which had for its object the formation and detection of formic acid, a body which is produced only in very small quantities under the same circumstances from ethylic alcohol.

To illustrate many of the statements made in his paper, Mr. Tuck exhibited specimens of so-called "Brandee," "Whiskee," "Gindee," and other cordials and medicinal shams made from methylated spirit. The most remarkable specimen was labelled "Pure Islay mountain medicated whiskee;" this was a colourless, perfectly clear, syrupy liquid, which, on being exposed to full daylight during very cold weather, became turbid, and gradually deposited flocculent crystals of honey. The spirit used in the fabrication of this beverage had evidently undergone some process of "cleaning," as no unpleasant taste could be detected; still, by applying the iodo-hydrargyride and oxidation tests, the presence of methylated spirit was thoroughly proved.

The President was glad to find that methylated tinctures could now be readily distinguished from the tinctures of honest dealers. He believed that Mr. Tuck's exposure of the cheap and nasty abominations which were now offered to the poor as cordials, would have a most beneficial effect.

Mr. Brady suggested that Mr. Tuck should ascertain the exact point in the fractional distillation at which the essential oils that might interfere with his test came over.

Mr. Brough thought that sufficient stress had not been laid upon the fact that the iodo-hydrargyride of potassium test was only applicable to methylic alcohol contaminated with acetone.

Mr. Tuck said that all the wood spirit of commerce contained acetone.

CAN METHYLIC ALCOHOL, OR ANY DERIVATIVE OF IT, BE READILY DETECTED IN CHLOROFORM, ETHER, SWEET SPIRIT OF NITRE, AND SAL VOLATILE? BY MR. JOHN TUCK.

In this paper satisfactory proof was given that chloroform could be, and was prepared from methylated spirit, quite as good in every respect as that prepared from pure spirit of wine. Whether pure methylic or ethylic alcohol was used, the result was the same. No test could distinguish one product from the other, for there was no difference in their chemical composition. Methylated ether could be distinguished from pure ether by its low boiling point. The presence of methylic alcohol in sweet spirits of nitre and sal volatile could be thoroughly proved, both by the iodo-hydrargyride of potassium and oxidation tests.

Mr. Reynolds referred to the mercurial tests proposed by his namesake, Mr. Emerson J. Reynolds, and asked Mr. Tuck whether its action was similar to that of the iodo-hydrargyride of potassium test.

Mr. Tuck, in reply, said that the tests were quite distinct, and he was quite surprised that Mr. Reynolds should have stated that they were the same. In the application of Mr. Reynolds's test there were many difficulties, but the iodo-hydrargyride test could be readily applied by a person unskilled in chemical manipulation.

Dr. Attfield said that the tests were undoubtedly distinct, but it was quite possible that the action of the one did not differ materially from that of the other. With regard to the preparation of chloroform, every scientific chemist knew that either ethylic or methylic alcohol could be employed. Still, chemically pure methylic alcohol was alone admissable, and he did not think manufacturers would be justified in using the wood spirit of commerce even though in the condition of Eschwege's patent wood naphtha.

Mr. Brady stated that chloroform prepared from ordinary methylated spirit was almost exclusively employed in the Edinburgh hospitals.

ON ESCHWEGE'S PATENT WOOD NAPHTHA, AND ITS USES IN THE ARTS AND MANUFACTURES. BY MR. JOHN TUCK.

As it is well known, this patent naphtha is ordinary wood naphtha, which has been purified by diluting with water, filtering through deep layers of animal charcoal, and subsequently distilling and rectifying. The author now proposed its use in making delicate perfumes and toilet soaps, and exhibited specimens illustrating his remarks. Its lower boiling point, also, pointed to its use in making cooling lotions; and its comparative lowness of price recommended it to naturalists for preserving specimens. It also possessed

advantages over ether in making collodion. The paper was illustrated by some excellent samples of different perfumes prepared with the patent naphtha.

ON THE MISTURA CREOSOTI OF THE BRITISH PHARMACOPŒIA. BY MR. JOHN TUCK.

The author showed that the acetic acid in this formula was entirely unnecessary, and suggested the use of syrup of orange flower in the place of spirit of juniper as a flavouring agent to cover the taste of creosote. The paper was illustrated by samples prepared by both formulæ.

A discussion on the differences in commercial creosote followed this paper.

NOTE ON SOME SAMPLES OF BISULPHATE OF POTASH OF COMMERCE. BY MR. BARNARD S. PROCTOR.

From this communication it appeared that the neutral sulphate, with only a trace of quasi-free acid, was sometimes sold instead of it. The pure article should have 29·5 per cent. of quasi-free acid, and the neutral sulphate of course had none, and better specimens contained excess of acid as indicated by the numbers 30, 31, 31 each nearly one and a half per cent. higher than theory required.

ON THE PRECIPITATE FORMED IN IPECACUANHA WINE, WITH REMARKS ON THE EFFECT PRODUCED BY THE VARYING QUALITY OF THE WINE USED IN THE PREPARATION. BY MR. GEORGE JOHNSON.

Ipecacuanha wine, though one of the most useful of the galenical preparations of the Pharmacopœia, is at the same time a most unsatisfactory one, for however bright it may be when first made, it requires to be filtered again and again to separate it from a deposit which gradually forms in the bottles. By careful investigation the author discovered that this deposit consists of the only important constituent of ipecacuanha, namely ipecacuanate of emetina, consequently the medical properties of the wine are impaired by every filtering. To determine the effect of different wines upon the deposit, the author prepared samples of ipecacuanha wine with Marsala, Cape Madeira, Cape Sherry, Victoria Sherry, Barsac, Niersteiner, Hochheimer, and Chablis, having first ascertained by analysis the percentage of vegetable acid and alcohol in each wine. He also prepared another series of samples from the same wines, but with the addition of 10 per cent. of alcohol. On examining these samples at the end of a period of six months, he found that the smallest amount of deposit occured in those made from the wines of France and Germany, in which the proportion of acid was large. He found, moreover, that alcohol existing in large proportion in any given tincture of ipecacuanha did not prevent the deposit of emetina. The important practical conclusion arrived at was that the wines of France and Germany were better adapted for the preparation of ipecacuanha wine than the sherry ordered in the Pharmacopœia.

Mr. BRADY regretted the unavoidable absence of Mr. Johnson from the Conference, as the admirable paper just read proved him to be a most valuable member.

Mr. REYNOLDS congratulated the Conference on the production of such a paper. The subject had been considered by their American brethren some years ago, but they had arrived at the convenient conclusion that the deposit was not of much consequence.

Mr. JONES (Leamington) had found that ipecacuanha wine made with pale sherry was preferable to that made with golden sherry.

Mr. DYMOND remarked that all present could carry away the fact that the oftener they filtered their wine the weaker it became.

After a short discussion between Mr. SCHACHT and Dr. ATTFIELD on the chemical reaction which caused the precipitation of the ipecacuanhate of emetina, the sitting terminated.

SECOND SITTING.

The members re-assembled on Wednesday, the 6th inst., at 10 a.m., and, after transacting some general business, gave their attention to the Papers named in the day's programme.

ON THE MICROSCOPIC EXAMINATION OF THE OPIATES, CONTINUED. BY HENRY DEANE, F.L.S., AND H. B. BRADY, F.L.S.

The authors stated that although the investigation on which they presented a preliminary paper at the Bath meeting of the Pharmaceutical Conference had been carried on by them during the year, they were not yet prepared to present an epitome of the whole subject, owing to the very complicated nature of some of the experiments they had had to conduct in its elucidation; still they thought it was due to the Conference that they should report progress. They wished in the first place to correct one or two errors which had crept into their former paper. These were chiefly in connection with what they believed to be inaccuracies in the analysis of Turkey opium, published by Mulder, and quoted by Dr. Pereira. They had recently been favoured by Messrs. T. and H. Smith, of Edinburgh, with the actual results obtained in working up large quantities of this drug; and though they would abstain from expressing an opinion on such debated points as the existence and influence of thebolactic acid, they were disposed to adopt the proportions set down by those well-known chemists. From 100 parts of fine opium Messrs. Smith had obtained—

Morphine	10·0	Meconic acid	4·0
Narcotine	6·0	Thebolactic acid	1·25
Thebaine	0·15	Codeine	0·3
Papaverine	1·0	Narceine	0·02
Meconine	0·01		

The most striking difference between these results and those obtained by Mulder was in the proportion of narceine. An average of Mulder's analysis gave about 8 per cent of this alkaloid, or nearly one-twelfth the weight of the crude drug, while the more recent table set down the amount as only one-five thousandth. This difference was most important, as narceine was considered, on the Continent, to be superior to morphine in its sedative effects. The authors then referred to a source of error which they had not guarded against in their first experiments: this was the occasional presence of certain adulterants in many of the Indian opiums. They stated that notwithstanding these drawbacks, they had no reason to alter their conviction of the general trustworthiness of the plan they had detailed, nor to doubt for a moment its applicability for determining the nature and therapeutic value of the various opium preparations. They had nearly completed the examination of the officinal opiates, and they proposed on a future occasion to detail the results more fully. They had obtained, through the influence of one or two friends, interesting specimens of opium, from several localities, not usually met with in commerce, and these had also been carefully worked out. A series of experiments had been made in order to determine the different solvent powers of alcohols of various strengths, of methylic alcohol and methylated spirit, the result of which led them to condemn the use of methylated spirit in any preparation of opium. Another course of inquiry had been entered upon with a view of procuring what they term a synthetical opium—that was a neutral extractive mass impregnated with the opium alkaloids in known proportions, to answer as a standard with which to compare the results of their experiments made with the natural or crude drug. This was a question which they had still in hand. They concluded by stating the objects to be aimed at in preparing medicinal solutions of opium, and gave the following formula, which they believed would be found useful by those desiring an opium sedative, free from some of the objectionable qualities of the ordinary tincture:—

Purified Tincture of Opium (strength Ph. L. 1851).

Take of *dried opium* 96 oz. (Troy); *rectified spirit of wine*, 2 gallons; *distilled water*, q.s. to make 8 gallons of tincture. Exhaust the opium with cold distilled water; evaporate the solution to the consistence of soft extract, and re-dissolve in 4 gallons of distilled water. Set this solution aside for a few hours until all feculence has subsided, then filter and again evaporate to the consistence of treacle, and add carefully and gradually the whole of the spirit. When the gummy matter has perfectly subsided, pour off, and add as much distilled water as will cause the whole to measure exactly 8 gallons.

Mr. BRADY, in reply to a question put by a member, said that the preparation called "Nepenthe" was decidedly not superior to Battley's Sedative. They (Mr. Deane and himself) had been puzzled more than ever by the microscopic appearance of the latter preparation.

Mr. W. E. Heathfield said the peculiarities of Battley's Solution depended on mechanical rather than on chemical operations. Without divulging any secrets he might remark that a very large quantity of common water was used in its preparation. Had the B. Ph. process for "extractum opii liquidum" been carried a little further, it might have produced a very good imitation of "Battley."

Mr. Dymond thought that the liquid extract was a poor representation of Battley's solution. He trusted that the authors of the paper would be able to perfect their plan for determining the value of opium and its preparations. The variation in the quality of the crude drug was very remarkable. Some time ago his firm had purchased at a high price some opium which contained only 5 per cent. of morphine.

Mr. Thonger referring to the unfair imitations of Battley's solution which found their way into the market, instanced a case where a very large quantity of an inferior preparation worth about eight shillings a gallon had been supplied to a dispensary as Battley's.

NOTES ON A COMMERCIAL SAMPLE OF SULPHATE OF QUININE. BY W. W. STODDART, F.G.S., BRISTOL.

The sample in question was received from Dr. Attfield for examination, and was manufactured by a M. Phil, of Paris. It differed in external character from the genuine production of the Howards, Pelletier, and other good makers. A quantitative analysis gave 41·3 per cent. of cinchonine, which would be equivalent to 56·31 of the sulphate of that alkaloid; the remainder was quinidine and quinine, the latter forming about 10 per cent. of the whole, and probably a mixture of hydrochlorates and sulphates. The author, after detailing various experiments, noticed the remarkable fact that the presence of cinchonine masked and interfered with the best quinine tests. He also gave it as his opinion that the pharmacopœia test was a most fallacious one for the general student. He concluded by congratulating the Conference on the general good quality of quinine as sold by the London wholesale houses.

REPORT ON THE PROCESSES FOR THE PREPARATION OF GLACIAL ACETIC ACID. BY W. E. HEATHFIELD, F.R.G.S.

The author, after remarking that acetic acid was generally obtained from wood by the process of destructive distillation, proceeded to describe the methods of preparing the glacial acid from acetate of soda as given in the pharmacopœias of Great Britain, the United States, Prussia, and Hanover. He then gave a detailed account of the process introduced by Melsens, and now adopted by many continental makers. The methods used for estimating the strength of acetic acid were next referred to by the author, who showed that no dependence could be placed on the results obtained by taking the specific gravity, as the monohydrated acid, which had the specific gravity of 1063, and contained 100 per cent. of the aqueous acid, might be mixed with 51½ per cent. of water and yet have the same gravity. The saturating power of the acid was the only safe indication of its strength. These remarks were illustrated by a table, exhibiting some of the relations of specific gravity to strength. In conclusion, the author stated that no process yet devised for preparing the glacial acid appeared to be superior to that of Melsens.

The President, after referring to the fulness of detail which characterized Mr. Heathfield's monograph, stated that the estimation of the strength of acetic acid had received his attention, and he had found that the best results were obtained by saturating the acid with carbonate of baryta.

Mr. T. B. Groves (Weymouth) had found the Dublin process for preparing the glacial acid a very good one. This consisted in decomposing the acetate of lead by hydrochloric acid.

Mr. Heathfield said the product of this process was liable to be contaminated with hydrochloric acid.

ON THE STRENGTH OF SOLUTIONS OF PHOSPHORIC ACID OF VARIOUS DENSITIES. BY MR. JOHN WATTS, SENIOR BELL SCHOLAR.

The author exhibited a table, showing at a glance the strength of any specimen of aqueous phosphoric acid, having a specific gravity ranging from 1·508, which would contain nearly 50 per cent. of acid, down to 1·006, containing less than 1 per cent. Between these extremes nearly fifty different strengths, with the corresponding specific gravities, were given. The production of the table had involved about 150 separate analyses, the analytical process finally adopted, after trying all the known methods, being that of evaporating down a weighed quantity of the acid solution with a known excess of *pure* protoxide of lead.

The President said that the table prepared by his friend Mr. Watts would be of great use to the pharmaceutist, as phosphoric acid and its salts were now largely used in medicine.

Dr. Attfield remarked that the value of the paper just read to all practical chemists could not be overrated. The table included in it had been constructed at the expense of an immense amount of labour, and it would take its place beside the well-known tables of Ure, Mohr, and Fownes. He begged to propose a vote of thanks to Mr. Watts for the great zeal and patience which he had brought to bear upon an unattractive and troublesome investigation.*

The vote of thanks was seconded by Dr. Parkinson.

The President, in putting it to the meeting, said that he could not help thinking that Mr. Watts offered his valuable table as a sort of return for the advantages which he enjoyed as Senior Bell Scholar. It was most gratifying to know that the gentleman whose name was so honourably associated with that of the founder of the Pharmaceutical Society was willing to devote so much time to the service of pharmacy.

The vote was carried by acclamation.

ON THE SOURCE, ANNUAL YIELD, AND CHARACTERISTICS OF THE SO-CALLED VOLCANIC AMMONIA. BY MR. W. D. HOWARD.

The author stated that the source of the volcanic ammonia was the crude boracic acid of those marvellous geological riddles the Lagoons of Tuscany. This crude acid contained various ammonia salts, chiefly sulphate of ammonia, double sulphate of magnesia and ammonia, and the double salts of soda and ammonia. In the manufacture of borax, by the addition of soda-ash to crude boracic acid, these and other less important ammonia salts were decomposed with formation of carbonate of ammonia, which was condensed in suitable vessels and sent into commerce. The characteristic of the ammonia derived from this source was perfect freedom from those traces of evil-smelling compounds which are found in the ammonia salts made from gas liquor or from bones. The annual yield of the lagoons could not be determined.

Mr. Brady remarked that the volcanic ammonia was peculiarly well-adapted for making liquor ammoniæ acetatis, owing to its pure smell.

Dr. Parkinson said that perfectly pure sulphate of ammonia could now be prepared from the product of the gas works.

ON EMULSIONS. BY MR. BARNARD S. PROCTOR.

This communication gave a sketch of a proposed investigation of the laws by which milky fluids are produced, and an account of a few preliminary experiments in which water and oil were found to mix more readily in certain proportions, and were shown to form emulsions of different natures, according to the manner of mixing. It was shown that many principles, mechanical, physical, and chemical, were involved in the question.

The President hoped that Mr. Proctor would continue his investigation, as there was no one better qualified to work out all the minute details of a pharmaceutical subject.

Mr. Schacht referred to some observations he had made on the fluid contained in the ink-bag of the cuttle-fish. This fluid was a natural emulsion, and the microscope showed that its suspended particles were always moving in a strange irregular manner. As Mr. Proctor had asked for any information bearing upon the subject of emulsions, he (Mr. Schacht) would direct his attention to this molecular motion.

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* We may here state that every paper called forth a vote of thanks to the author. We specially notice this vote to Mr. Watts, as it was carried by the meeting with much enthusiasm.

ON AQUEOUS SOLUTIONS OF PERCHLORIDE OF IRON.
BY DR. J. ATTFIELD, F.C.S.

The author said that of all the methods for making solution of perchloride of iron there was only one that yielded it in the pure state, namely, by dissolving the solid crystalline anhydrous salt in water. He gave suggestions concerning the introduction of such a pure preparation into commerce. Meanwhile solution of perchloride of iron made in any other way might be rendered stable by taking care that it contained some free hydrochloric acid, an addition that some medical men seemed to consider to be free from objection. specimens prepared by the several processes were exhibited to the meeting.

ON SPIRITUOUS SOLUTIONS OF PERCHLORIDE OF IRON.
BY DR. J. ATTFIELD, F.C.S.

The use of spirit in making a solution of perchloride of iron was unnecessary, useless, and always productive of instability; moreover, it was not so good a solvent of the salt as water. The author was borne out in his statements by the officers of several of the metropolitan hospitals. At some of those institutions water had been for some time substituted for spirit in making the preparation, and at others the change was contemplated. Dr. Attfield exhibited to the meeting specimens of tincture of perchloride of iron, which had become almost colourless from the reaction of the spirit of wine in them on the dissolved salt.

The PRESIDENT said that the meeting ought to be grateful to Dr. ATTFIELD, for his elucidation of the mysterious and troublesome changes that occurred in solutions of perchloride of iron.

Mr. ATHERTON (Nottingham) had recommended the aqueous solution to prescribers in his neighbourhood, and they had adopted it.

Dr. PARKINSON had tried to introduce it in a large dispensary, but without success, as the doctors did not like it so well as the tincture.

The PRESIDENT hoped that the aqueous solution would be generally adopted by the medical profession. The introduction of medicines that could be prepared cheaply might tend to increase the profits of chemists. At present, when a box of pills had to be sold for sixpence, the cost of the drugs, the box, the label, and the wrapper, left an absurdly small amount to remunerate the chemist for the trouble involved in preparing the pills, in packing them up, and in sending them home to the customer. Some well-digested scheme for regulating the profits on medicines dispensed by chemists was much wanted.

ON THE ESTIMATION OF NITRITES IN THE PRESENCE OF NITRATES. BY C. R. C. TICHBORNE, F.C.S.

The author detailed the results he had obtained on attempting the direct quantitative analysis of nitrites. They were all, he said, most unsatisfactory, because, knowing no easily available precipitant of nitrous acid, we were obliged to fall back on processes of oxidation, and to do this in the presence of such a strong oxidizer as nitric acid was exceedingly difficult, especially in the face of the fact that manipulation must be carried on at a low temperature, to prevent spontaneous decomposition of the nitrous acid. The most successful method was based upon the reduction of chromic acid to chronic oxide by nitrous acid. The instructions given by the author for carrying out this method were most minute.

NOTE ON NITRITE OF SODA. BY MR. W. D. HOWARD.

The author referred to a recent paper by Mr. Warington, in the *Pharmaceutical Journal*, which had almost exhausted the subject of nitrite of soda. In addition, he stated that crude nitrite of soda, containing only 19 per cent. of pure salt, could be concentrated to one containing 40 per cent. by mere recrystallisation, the nitrate crystallising out before the nitrite.

REPORT ON THE PURITY OF COMMERCIAL IODIDES AND BROMIDES OTHER THAN IODIDE OF POTASSIUM. BY HENRY MATTHEWS, F.C.S.

The author gave complete analyses of nineteen specimens of the above-named salts. The results showed that the bromides of ammonium and of cadmium, and also iodide of cadmium were practically pure, but that the same could not be said of the bromide of potassium. Of seven samples of this salt, the contained chloride ranged from 0 to 5 per cent.; the iodide from 0 to 3·88 per cent. Smaller quantities of sulphate and bromate were also present usually. The largest amount of impurity was found in the iodide of ammonium, two samples out of three examined giving from 6 to 7 per cent. of sulphate of ammonia The method of analysis was fully detailed.

Dr. PARKINSON said that the large percentage of sulphate in the iodide of ammonium might be accounted for by the fact that the latter was sometimes prepared from sulphide of ammonium.

ON THE EFFECTS OF SOIL AND CULTIVATION ON THE DEVELOPMENT OF THE ACTIVE PRINCIPLES OF PLANTS. BY MR. T. T. P. B. WARREN.

The author considered the influence of mutilation, soil and situation upon the medicinal properties of plants. The paper was a most elaborate one, and we can give only a few of the facts which it brought forward.

Belladonna, foxglove, and henbane were found to contain the same amount of alkaloids in their leaves before and immediately after flowering, whilst after this period they slightly diminish in the stalks and roots. Observations extending over a series of years would be needful before the influence of chemical differences in soil could be satisfactorily determined. The most experienced growers manured the land heavily with rich stable manure after each crop, in preference to adopting the principle of mere rotation. Parings of horses' hoofs answered admirably for lavender crops. In crops from highly-manured land the phosphates and nitrates were largely increased. The total of active principles and salts found in belladonna after high manuring was much larger than when under ordinary cultivation. Situation affected the quality of medicinal plants very greatly. The finest chamomile flowers were produced from the plants when laid out in rows two feet apart. The author considered that differences in the quality of henbane and foxglove might be caused by too close planting. In cases, especially where the leaves were large, they might mutually interfere with each other so much as to cause marked changes in their properties.

Before the sitting terminated the members had the pleasure of listening to

A FEW REMARKS ON EXTRACTS OF FLESH.
BY H. R. BRADY, F.L.S.

He commenced by stating that he was sorry to occupy the time of the meeting with extempore remarks on this subject, but that, as it did not seem likely to be introduced otherwise, he did so to meet the desire expressed in the President's address that he should speak concerning these meat preparations, in order at least to place the matter in a form in which it might be discussed by the members. Having briefly touched on the fluid essence of beef manufactured by Messrs. Gillon, of Leith, and on the gelatinous concentrated beef teas as sent out by one or two London firms, he then spoke at greater length on the so-called *Extractum carnis* of Liebig, describing its mode of preparation at the Royal Pharmacy at Munich, under the direction of Dr. Pettenkofer, and in Herr Giebert's manufactory at Uraguay. He then made some interesting remarks on its chemical constituents, its importance in a medical aspect, and the variations which occur in its physical condition. He concluded by expressing the hope that so valuable an article would not be lost sight of by capitalists in Australia, who had, possibly, facilities almost equal with the inhabitants of Uraguay for its production, and the at present excessive demand for it might be satisfied by supplies from our own colonies.

The PRESIDENT said that as the new extract of flesh wa now largely sold by chemists the information given by Mr Brady could not fail to interest the Conference. It was n doubt a valuable article of food for those invalids whos stomachs refused to retain solid food.

Mr. BROUGH could speak from personal experience respect ing the remarkable restorative power of beef gravy prepare

in such a way that the whole of the soluble costituents of the beef were present.

Mr. Atkins (Salisbury) remarked that the great want of the day was a cheap form of concentrated animal food which should be within the reach of the sick poor.

Dr. Edwards suggested that experiments should be tried in preparing an extract of fish, as vast quantities of fish were continually being thrown away.

Mr. Schacht regarded the extract of meat as a useful preparation in the treatment of disease, but did not think it would ever become an important article of daily food.

THIRD SITTING.

The Conference met again on Thursday, September 7th, at 7 p.m. The attendance was small, and the papers read gave rise to but little discussion.

ON A NEW FILTER. BY MR. G. F. SCHACHT.

The instrument described by Mr. Schacht was not unlike a flower-pot, into the hole at the bottom of which an india-rubber tube a few feet in length was inserted. Into the lower part of the vessel a filtering medium, such as flannel, etc., properly stretched on a frame, was placed. The liquid to be filtered, on being placed in the upper part of the vessel, soon ran through the flannel, etc., at a much greater rate than it would if the long tube had not been added, on account of the dragging or gravitating action of the column of water water below.

Mr. Evans (Liverpool) said that Mr. Schacht's filter was similar in principle to an oil filter that had been patented by Mr. Britten, of Liverpool, some years ago.

Dr. Attfield explained the action of the filter.

ON THE ADULTERATION OF ESSENTIAL OILS WITH TURPENTINE, AND MEANS OF ITS DETECTION. BY MR. H. SUGDEN EVANS.

The adulteration of essential oils is well known to be extensively practised, and though numerous tests have been proposed for the detection of the fraud, all have proved unsatisfactory, giving at the best, evidence only of the fact of adulteration without indicating its extent. Availing himself of the power most essential oils possess of rotating the plane of a polarised ray of light, Mr. Evans had arranged a polariscope, by means of which the exact amount of this rotatory power could be measured. The application of this test was simple, and the apparatus easily and inexpensively constructed by anyone possessing a microscope provided with polarising prisms. Having determined the amount of rotation in degrees possessed by well-accredited samples of pure oil, and also of the supposed or possible adulterants, it becomes a simple matter of calculation to determine the amount of adulteration; for it is proved by experiment that the degree of rotation recorded is the mean of the combined rotating force of each of the components. The subject was illustrated by tables of values of pure and adulterated samples of various essential oils.

ON COTTON-SEED OIL, AND ITS DETECTION WHEN MIXED WITH OTHER OILS. BY R. REYNOLDS, F.C.S.

The author stated that large quantities of cotton-seed were now being pressed for oil, the whole of this seed having, until the last few years, been thrown away or returned to the soil as a fertiliser. The weight of seed produced by each plant was three times as great as that of the cotton which it yielded. Hence large quantities might always be relied on, and the cheap price of the oil might be expected to continue. The refining of the oil by an alkaline solution presented some singular features, and hopes had been entertained of producing available dyes, but hitherto these had been disappointed. Mr. Reynolds reported his experiments on the detection of this oil when mixed with olive oil, and considered that a solution of nitrate of mercury, known as Poutet's test, was sufficient for this purpose, if certain precautions were taken. With olive oil the test produced a hard friable mass; with olive oil adulterated with the cotton-seed oil it produced a more or less pasty substance.

ON THE QUANTITY OF ALKALOID CONTAINED IN VARIOUS SPECIMENS OF CITRATE OF IRON AND QUININE. BY MR. J. C. BRAITHWAITE.

The author, in a previous paper submitted to the Conference, gave the results of an examination of fifteen samples of citrate of iron and quinine. He found that many of the specimens, which were supposed to contain 25 per cent. of citrate of quinine, really contained a very minute proportion of alkaloid, in two cases only 1½ per cent. He now found that some of these specimens contained quinidine, and that in one of them the alkaloid consisted almost entirely of quinidine. He had also examined eight fresh specimens of commercial citrate of iron and quinine, and had found in them amounts of alkaloid representing very different proportions of the citrate—from 2½ per cent. to nearly 22 per cent. In a specimen prepared by himself he introduced quinine equal to 26·75 per cent. of the citrate, without impairing the appearance or the solubility of the preparation.

ON THE AMOUNT OF TANNIN IN BRITISH GALLS AT VARIOUS PERIODS OF THEIR GROWTH. BY MR. W. JUDD, F.C.S.

Old galls which had remained on the oaks till after Christmas, and had, of course, been perforated by the fly, were found to contain 16 per cent. of tannin. Mature galls, but from which the fly had not escaped, yielded between 17 and 18 per cent., while half-developed galls afforded only 13 to 14 per cent. Though Aleppo galls contain two or three times this amount of tannin, still English galls, the author thought, could be economically used in dyeing, ink-making, tanning, etc., if collected at the proper period of the year.

NOTE ON ITALIAN CASTOR OIL. BY MR. J. PHILLIPS, OF NAPLES.

This colourless, inodorous, and almost tasteless variety of castor oil was prepared, the author said, in the summer time from seeds collected the previous autumn. The outer skin of the seed was removed by slight blows of a hammer, the seed being placed on a marble slab; the decorticated portions were then submitted to gentle and continuous pressure, and the exuding oil filtered with as little exposure to air and light as possible. This oil was expensive, and, therefore, seldom exported. A much cheaper variety, made with far less care, and often partly from East Indian seeds secretly imported for the purpose, was, however, sent to England and elsewhere; even this was a superior article to that sent direct to England from India and America, but far inferior to the genuine Italian oil. Mr. Phillips thought the absence of the usual nauseous flavour in real Itailan castor oil to be simply due to the use of unbruised seeds not older than above mentioned, the avoidance of heat, and the careful manipulation observed in the whole operation.

NOTE ON THE BEST EXCIPIENTS FOR FORMING RESINS OF JALAP AND SCAMMONY INTO PILLS. BY T. J. HASSELBY.

The author's experiments indicated that spirit of wine or mucilage, used in small quantity, and with a warm mortar, yielded good results in the case of jalap resin.

The President thought that the resin should be rubbed up with honey or conserve of roses, so that its particles might be finely divided.

INDUSTRIAL MUSEUM OF PHARMACY.

Dr. J. B. Edwards introduced the subject of the advantage which might arise from a collection of instruments, utensils, and models of apparatus used in pharmacy. Mr. Joseph Ince had drawn the attention of chemists to the subject, and given practical proof of his desire to form such a collection, by presenting to the Museum of the Liverpool Chemists' Association a practical working model of a chemist's dispensing counter, handsomely designed in oak; and it was his wish that similar contributions should be made, and a large collection formed, both in London and in provincial towns, of such apparatus as would afford to a person about to commence business suitable designs and models for his shop and laboratory. Such a collection, if proper and sufficient space were provided for it, would probably be liberally added to by the medical shopfitters, who now had to contend with the inexperience of their customers, and were, as a rule, less acquainted with the details and various wants of the business than the practical experienced chemist. Such a collection would receive the comments and suggestions of men of experience, and many of the ingenious and

inexpensive contrivances of the few would be shared in by dispensers generally. Dr. Edwards thought this subject well deserving of the consideration of members of the Conference, and suggested that the members might assist in the formation of such a collection by presenting to the Pharmaceutical Society, or the Chemists' Association any contrivance they may have found practically useful, and a saving of labour in the ordinary exercise of their business. Each one of such contributions would have its special value, but the chief one would be that a nucleus would thus soon be formed of an Industrial Pharmaceutical Museum, which would represent the mechanical features of the business in different parts of the country, and afford an important feature in pharmaceutical education.

COMMUNICATION FROM GERMANY.

The PRESIDENT informed the meeting that the Pharmaceutical Conference had been invited to send representatives to an International Pharmaceutical Congress to be held at Brunswick on the 15th, 16th, and 17th of the present month. The Pharmaceutical Society had originally been requested to send deputies to Brunswick, but the council had referred the German Union to the Conference as an association that courted correspondence with societies having similar aims in other countries. Since the reply of the Pharmaceutical Council had been sent to Germany, he (Mr. Deane) had been visited at Clapham by one of the promoters of the Brunswick Congress Continental engagements would not allow this gentleman to attend the Birmingham meeting, but he had forwarded a letter of invitation, a literal translation of which he (Mr. Deane) would now read:—

HIGHLY HONOURED ASSEMBLY,—I most extremely regret my inability to accept the invitation of Mr. Henry Deane to be present with you in Birmingham, not that I do not wish to come, but that my journey to certain places—as Paris, Rennes, London, Brussels, Amsterdam, Heilbronn, and Brunswick—is already fixed. Especially, however, am I prevented because the South German Apothecaries' Union holds its general meeting at Heilbronn on the 5th, 6th, and 7th of September, at which time the International Commission (of which I am a member), which was appointed last year at Wiesbaden, to consider the subject of an International Pharmaceutical Congress, will also meet.

This International Pharmaceutical Congress is no special idea of one man, or of any single body of men, but is called into existence by the general relations of pharmacy at the present time. Pharmacy in all countries requires reformation, if we do not wish to be overridden by the professors of medicine, and to be degraded to the level of a mere trading community. Nearly all the European societies have already appointed their delegates. Among the larger states Great Britain alone remains blank.

At the French Congress held in Rennes, the following gentlemen were appointed to represent France at the proposed meeting at Brunswick:—Dr. Robinet, formerly President of the Medical Academy of Paris, now Director of the Pharmaceutical Society of Paris, and the President of the Congress in Rennes: Mr. Schauffele, apothecary in Paris, President of the Congress held at Strasburg; and Mr. Giorgino, apothecary in Colmar.

In Rennes the opinion was universal that there was no doubt but that England would be represented on so important an occasion as the first assembling of an International Pharmaceutical Congress. When the societies in such small states as Denmark and Finland have not neglected to elect representatives to Brunswick, all will ask, Why has Great Britain remained behind?

It is not necessary that three representatives be chosen, inasmuch as the voting will not be by numbers, but each society will have one vote, whether one or more of its delegates be present. On this account several societies have not sent three delegates.

I beg, therefore, that the conference in Birmingham will, on its meeting, transmit by telegraph the names of those chosen to represent it to the address of the Head Director of the South German Apothecaries' Union, Dr. Rieckher, Heilbronn, Wurtemburg.

Truly yours,
Dr. BJOOKLUND,
Apothecary and Secretary of the Pharmaceutical Society of St. Petersburgh.

London, August 25, 1865.

Mr. BRADY feared that the invitation could not be accepted, as the date fixed for the opening of the Congress was too near to that upon which the present meeting would close. Next year, however, some members of the conference might find time to visit Germany to represent British Pharmaceutists, at the annual meeting of the German Apothecaries' Union.

Dr. EDWARDS said that there were a few roving pharmaceutists connected with the Conference who might be willing to act as delegates. He alluded to Mr. Daniel Hanbury, Mr. Ince, and Professor Archer.

Mr. DYMOND suggested that the Secretary in replying to the invitation of their German brethren should invite the Apothecaries' Union to send representatives to the next meeting of the British Pharmaceutical Conference.

COMMUNICATION FROM THE UNITED STATES.

The PRESIDENT read the following letter from the corresponding secretary of the American Pharmaceutical Association:—

American Pharmaceutical Association, New York, July 27, 1865.

Henry Deane, Esq., President, British Pharmaceutical Conference.

DEAR SIR,—The *Proceedings* of the British Pharmaceutical Conference were received some months since, and, on behalf of the American Pharmaceutical Association, I am happy to acknowledge also the receipt of a copy of the resolutions passed at the meeting of the Conference, and forwarded by Dr. John Attfield. The expressions of goodwill towards our Association will find a hearty response from our members.

I have forwarded through Messrs. B. Westermann and Co., a complete set of the *Proceedings* of this Association (except for the year 1855, which is out of print), which is presented to the British Pharmaceutical Conference, of which you have the honour of being the president. Our Association look with pleasure at the result of the first meeting of your body, and anticipate a career of usefulness in the future.

May the respective bodies with which we are connected ever continue their endeavours to advance the cause of pharmacy and its kindred branches, and success be evident in ourselves and those who shall come after us.

I have the honour to be, dear Sir, yours sincerely,
P. W. BEDFORD,
Corresponding Secretary, American Pharmaceutical Association.

A vote of thanks was passed to the Association for their handsome donation.

CONVERSAZIONE.

The Birmingham members invited the other members of the Conference and their friends to a Conversazione, at the Odd Fellows' Hall, on Friday evening.

The room was most tastefully decorated and filled with objects of scientific interest. There were numerous microscopes from London and Birmingham makers; rare chemicals from Mr. G. Gore, and others; illustrations of the manufacture of platinum and magnesium, including a huge sulphuric acid still of the former metal, shown by Messrs. Johnson and Mathey; specimens illustrating the manufacture of Parkesine, that extraordinary new material formed of rags and oil, which seems applicable for every purpose for which gutta-percha, horn, and ebonite can be used; wonderful specimens of the fossils of Dudley, shown by Mr. Hollier; magnets, magneto-electric machines, and a grand set of musical glasses, exhibited by Mr. Bird, of Birmingham; specimens of the patented rough poison labels, exhibited by Mr. Thonger; native manufactures from Bermuda, with a unique specimen of the marbled angler fish, shown by Mr. Musson; samples of the commercial chemicals manufactured in Birmingham and the surrounding district; English and foreign pharmaceutical preparations, rare vegetable products, chemical apparatus, and many other objects, all interesting to the members of the conference.

After spending some time in examining the curious and beautiful things by which they were surrounded, the visitors, at the invitation of the President, crowded round the platform and listened to a brief

REPORT ON THE CHEMICAL MANUFACTURES OF BIRMINGHAM AND THE DISTRICT. BY MR. THOMAS BARCLAY.

The author commenced by referring to the articles manufactured by Chance Brothers and Co., of Oldbury. He called attention to their samples illustrating the manufacture of carbonate of soda, their sample of purified soda ash used in the manufacture of plate glass, and their sample of bicarbonate of soda prepared especially for pharmaceutical purposes. He then referred to the phosphorus, both amorphous and ordinary, the chlorate of potash and the pure precipitated sulphur of Messrs. Albright and Wilsons, of Oldbury. The samples of the common mineral acids shown by Messrs. Shorthouse, of Birmingham, represented an extensive manufacture of the district. The beautiful specimen of Roman vitriol shown by Messrs. Hickling, and the samples of nitrate of strontia and baryta, from Mr. Winder, also represented the manufactures of Birmingham. The large and well-formed crystals of citric acid were from the factory of Messrs. J. and E. Sturge, of Birmingham, who owned a plantation in Montserrat where they cultivated upwards of three hundred acres of lime trees, and whence they obtained the concentrated lime juice used in the manufacture. Cyanide of potassium was manufactured on a very large scale in Birmingham for the use of the electro metallurgists. The samples exhibited were sent by Messrs

Adams. One specimen of grey cyanide was of remarkable beauty, and though a crude product was nearly pure, containing 94 per cent. of the pure salt. This was obtained by fusing prussiate of potash in a close vessel. The pure acids; the acetates of potash, soda, and lead; nitrate and phosphate of soda; the iodides and bromides of potassium, ammonium, and cadmium; and a variety of other articles were also manufactured in the district. Messrs. Clay and Newman, of the Salt Works, Droitwich, had sent specimens illustrating their manufacture—including two forms of crystals, one called the "hopper crystal" being very curious. In conclusion the author remarked that in naming those who had contributed to the collection, he did not wish to give them undue prominence, as there were many other well-known makers in the district.

At nine o'clock the visitors were invited to pass into another room to listen to a lecture

ON THE ELECTRIC DISCHARGE. BY DR. J. B. EDWARDS.

Having explained and exhibited the ordinary forms of the discharge, Dr. Edwards performed a beautiful series of experiments with vacuum tubes and tubes containing different gases in a highly rarified condition. The discharge from the induction coil, on being passed through these tubes, was variously modified, and produced the most striking effects. The action of magnetism on the discharge was illustrated by a very beautiful experiment. The fluorescence of a solution of quinine, when exposed to the light of the discharge, was also exhibited.

On the conclusion of the lecture Dr. Edwards was loudly applauded.

When the company re-assembled in the large hall,

The PRESIDENT proposed a vote of thanks to the Birmingham chemists for the hearty manner in which they had performed the duties of hosts.

The resolution was seconded by Dr. Attfield, and carried by acclamation.

The company then separated.

SUPPER.

After the *conversazione* a large number of members sat down to supper in the large room of the Acorn Hotel.

The chair was taken by Mr. Deane, and the vice-chair by Dr. Edwards. The meeting was a very pleasant one. It had the effect of bringing together many chemists and druggists who had never met before, and, as the chairman remarked, of "rubbing off their sharp corners." Speeches were made by the President, Dr. Attfield, Dr. Edwards, Mr. Brady, Mr. Reynolds, Mr. Wade, Mr. Bremridge, Mr. Thonger and others; and some good songs were sung by Dr. Edwards, Dr. Attfield, Mr. Stanford, and Mr. Brough.

On Tuesday evening, the 12th instant, the members of the Conference met to make arrangements for the next annual meeting and to appoint officers. A report of the meeting will appear in the October number of the CHEMIST AND DRUGGIST.

DR. MILLER ON THE PROGRESS OF CHEMISTRY.

As the President of the Chemical Section at the British Association meeting in Birmingham, Dr. W. A. Miller delivered the following address:—

Interesting historical associations are naturally awakened in the mind of the chemist as he enters upon the business of this section of our scientific gathering in the town whose hospitalities we are now sharing; for he is reminded that on the 1st of August, 1774, only ninety-one years ago, Priestley laid, at Birmingham, the foundation of modern chemistry, by the discovery of oxygen.

Yet it seems difficult to realise the fact that there must be some still living who entered life when the chemical nature of the atmosphere was undiscovered, when water was believed to be an elementary substance; when the composition of the ordinary acids—nitric, hydrochloric, and acetic—was unknown; when the discoveries of Galvani had not been made, and when the battery which perpetuates the name of Volta did not exist.

It requires a considerable mental effort to estimate aright the extraordinary progress which chemistry, both in its scientific and in its practical aspect, has made since that day.

For example, the development of the laws of combination—the determination of the equivalent proportions of the elementary bodies—the art of chemical analysis—the Atomic theory—the isolation of potassium, with the consequent discovery of the compound nature of the alkalies and earths—and the marvellous developments of the organic department of chemistry, exhibit some of the most striking points in the progress of the science; whilst in the chemical arts we may mention gas-lighting—the manufacture of stearic acid and other fatty acids for candles—the industry of petroleum and paraffin—the chemical process of bleaching by chlorine—the preparation of carbonate of soda from common salt—and the extensive alkali trade. The discovery of iodine and bromine, and their varied applications as remedial agents and otherwise—the fascinating processes of photography—the development of the trade in beet-root sugar—the extraction of quinia, morphia, and all the vegetable bases—these and other processes of chemical manufacture too numerous to mention are all subsequent to, and may be said to be in nearly every case consequent on the great discovery of oxygen.

Well may we sympathise, now, in the sanguine anticipations of Priestley himself, expressed in the preface to the volume in which this discovery is recorded, "Experiments and Observations on Different Kinds of Air," vol ii. p. 1:—"In reality, this is not now the business of air only, as it was at first; but appears to be of much greater magnitude and extent, so as to diffuse light upon the most *general principles* of natural knowledge, and especially those about which *chemistry* is particularly conversant. And it will not be now thought very assuming to say, that, by working in a tub of water, or a basin of quicksilver, we may perhaps discover principles of more extensive influence than even that of *gravity* itself, the discovery of which, in its full extent, contributed so much to immortalise the name of Newton."

But it is not alone with the name of Priestley that we associate the progress of chemistry in Birmingham. Grouped around the father of pneumatic chemistry were several remarkable men who then either resided at Birmingham or frequently met there, including Matthew Boulton, James Keir, Dr. Withering, Dr. Darwin, and foremost of them all, James Watt, who here diversified his engineering labours with his famous investigations into the composition of water. It was at the factory at Soho, too, that Murdoch made the first great experiment on gas-lighting, at the illuminations for the short-lived peace of Amiens; and it was in Birmingham that Dr. Roebuck, in the middle of the last century, erected the first leaden chamber for the making of sulphuric acid, and thereby inaugurated the most important of the chemical manufactures of this country.

Nor has Birmingham failed in more modern times to maintain her reputation in connection with the chemical arts. Here, twenty-five years ago, Elkington founded the first establishment in this country for carrying out the processes of electro-plating and electro-gilding. Here Askin made the nickel of commerce, with its companion metal, cobalt, as oxide—articles that might vie in purity with the products of the laboratory. Here Chance has established a manufactory of optical glass, which especially calls for acknowledgment on the part of the student of science; and here Sturge and Albright have erected the only manufactory for red phosphorus which the country contains.

Vast as is the modern development of experimental science, it yet cannot excite much surprise that, with the exception of that portion which falls within the domain of the mathematician, science until recently has been systematically excluded from the general course of education, and has been followed in the majority of instances by those only who commenced its study for professional objects. Yet can we wonder at this, when we remember that the science of chemistry and many entire branches of experimental physics, including voltaic electricity, electro-magnetism, thermo-electricity, the phenomena of polarized light, of photo-chemical action, radiant heat, and others, are, as already stated, less than a century old? But the great strides that they have made in that interval, the social changes that they have introduced, and the additional powers that they have conferred upon man, will vindicate their importance as necessary branches of knowledge to be acquired; whilst the more just appreciation of the methods of investigation which they pursue will establish their claim to be regarded as instru-

ments in training the mind, and shaping the intellectual development of the future.

Those whose education was based upon the linguistic system almost exclusively, as was the case both before and after Priestley's time, could not be expected to realize the magnitude and true bearing of the power of science, and its educational value. Now, however, the case is altered; and it is a subject for congratulation to reflecting men, that the introduction of the scientific element into the ordinary course adopted at our public schools is at length attracting serious attention, and that its importance has been insisted on in both houses of the legislature. The practical instinct of the nation is becoming alive to the necessity of making certain portions of the training of our youth consist in the systematic study of the elementary parts of properly selected branches of science; and it behoves all who are themselves engaged in the pursuit of science to consider in what way they can themselves aid in forwarding this object.

I need not here advert to the exploded notion, that the acquisition of the truths of science can in anywise endanger those of revelation; for truth is ever consistent. But it may not be superfluous to reassure the minds of some who imagine that science, like a fresh invasion of Vandals, will extinguish scholarship and classical learning. Language must indeed ever form the basis of our system of education; for it is the key that unlocks the stores of knowledge: and no languages are so fitting to form the groundwork as the tongues of ancient Greece and Rome, irrespective of the treasures of philosophy, eloquence, poetry, and history which they contain. They have that intellectual finish and completeness which belongs only partially to science. A moderate amount of classical knowledge can be, as indeed it ought to be, attained by every so-called educated mind, while for him who would carry the critical faculty to a high state of cultivation, the study of the classics affords the means. These tongues constitute the basis of many of the modern European languages; and an acquaintance with their literature imparts a cultivation and a polish that it is almost vain to seek from any other source. Just as some minds seek to attain distinction in the wide domain of philology, other minds, as vigorous, though differently constituted, delight in the study of natural laws and affinities. It would be a hard thing to say that provision should not be made in our schools for the latter, as wide and liberal as it has been for the former.

It is not to be supposed that, because science is to form a part of the education of every gentleman, therefore it will constitute the pursuit of his mature years. What is needed is that he possess sufficient knowledge of its principles to qualify him to appreciate the advances which science is making, and to enable him to contribute intelligently towards its progress.

It is certain that if science is to form a useful portion of the education of a boy, it must be undertaken with the determination to deal with it as a matter of study: the same pains must be taken to ascertain that each boy understands the principle, for example, of the air-pump, or the meaning of the thermometric scale, as that he comprehends a rule in syntax or the analysis of a sentence. To do this, however, the instruction given must not be limited to a dry lecture on the principles of some branch of science once a week. These principles must be logically unfolded, and illustrated, when necessary, by experiments, and the structure of machines and apparatus explained by suitable diagrams; the boys must be taught to take notes of each lecture; and the ground covered must be made secure by following up the lectures with frequent examinations, both oral and written. These are as necessary to the successful study of a science as the writing of exercises, or the practice of construing, is to the accurate study of a language. Science is not merely to supply her facts; she is to be employed to develop the powers of the mind, and to discipline them for action. Hence it is of far more importance to instil principles, and to cultivate precision in observation, in thought, and in description, than it is to load the memory with mere facts, however valuable. In short, the system of *cramming* is to be eschewed, while the formation of habits of comparing, reasoning, and judging is to be encouraged in every way.

It may at first be difficult to meet with well-trained and competent teachers; but when once the want of instruction in science is proclaimed, the teachers will soon be forthcoming. Some years will, no doubt, elapse ere science is admitted to take equal rank, as a means of education, with the study of classical literature. Still it is but a question of time; and we cannot but hope that our Universities, following up the commencement which the youngest but not the least active amongst them, the University of London, has made in the establishment of Degrees in Science—we cannot but hope, I say, that the heads of our Universities will ere long feel it to be their duty, as unquestionably it will be their wisdom, to place themselves at the head of this new movement, which is destined to exercise so wide an influence upon the education of our people.

But it is time that we proceed to take a rapid survey of some of the principal points in the progress of chemistry during the last twelve months. The course of chemical discovery since our meeting last year, though not marked by any very striking novelty, has nevertheless been steadily advancing. Ideas previously thrown out have been discussed and developed; and many of them are leading to new discoveries, or are being applied to explain phenomena before wrapped in obscurity.

Amongst the problems which have, for some time past, been engaging the minds of philosophical chemists, few are of greater interest than those connected with the idea of the atomicity of the elements. It is well known that chemists now distinguish between the *atomic weight* and the *equivalent* of an element; also that, owing to the labours of many distinguished men, amongst whom the names of Williamson, Kekulé, Odling, Cannizzaro, and Wurtz are the most prominent, a classification of the elements into families has been made; and that this classification rests upon what is known as the *atomicity* of the elements. One group of the elements, like potassium and chlorine, is regarded as *monatomic*, or usually equivalent in functions to one atom of hydrogen; a second, like oxygen and sulphur, is *diatomic*, or equivalent in functions to two atoms of hydrogen; a third group, like nitrogen, phosphorus, and arsenic, is *triatomic*, or equivalent for the most part to three atoms of hydrogen; while a fourth group, like carbon and silicon, is *tetratomic*, or equivalent in functions to four atoms of hydrogen, and so on.

(To be concluded in our next.)

Correspondence.

PATENT MEDICINE LICENCE.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—The anniversary of this unequally adjusted licence having arrived, I trust you will allow me space in your journal for the following brief remarks. I am said to be within the limits of the "twopenny post," and consequently, have to pay 40s. per annum. A short time since I was living at exactly the same distance from London Bridge, and only paid 5s.! Now, if every vendor of patent medicines within the limits of the "penny post" were charged 10s. per annum, it would bring in a much larger sum to the revenue. As the collecting is now properly in the hands of the Excise, few vendors would escape.

I am, Sir, yours truly,

Enfield, September 1, 1865. ROBERT F. MARTIN

TRADE REPORT.

In the Chemical market business has been more extended and prices, although in many cases rather lower, are better supported than for some time past. A large business has been done in French Quinine at from 4s. 9d. to 4s. 11d. on the spot, and 4s. 10d. to 5s. for forward delivery, the price being now firm at 5s. spot. English is steady at 5s. 3d. to 5s. 4d. More business has been done in Iodine at from 5¾d. to 6¼d.; now 6d. is the price, and the market firm. A good business has been done in Tartaric Acid at 1s. 4½d. to 1s. 5d., the latter price being now the quotation. Citric is steady at 1s. 9d. to 1s. 9½d., according to make and quantity. Moderate sales have been made in Oxalic at 9d. to 9½d. according to quality. Chlorate of Potass is quiet at 13d. A fair business done in Sal Acetos at 11¼d. to 11½d. Bichro-

mate is quiet at 6d. net cash. Prussiate remains nominal at 11¼d. to 11½d. A large business has been done in Soda Crystals at £5 15s. to £5 17s. 6d., now £6 demanded. Ash is scarce at 2 1/16d. to 2¼d. Cream Tartar is dull, and there are sellers at 117s. 6d. A good business has been done in Alum at £7 in barrels, and £7 5s. in tierces. Sulphate of Copper in more demand at the reduced price of 26s. 6d. A moderate business has been done in Sulphate of Ammonia at 13s. to 13s. 6d. More doing in Sal Ammoniac at 35s. 6d. to 37s. 6d., according to quality. Caustic Soda more in demand at 16s. 6d. to 20s. Carbonate of Soda from 13s. 6d. to 14s., and Bicarbonate at 13s. f.o.b. Bleaching Powder is dearer. A fair business done in Brimstone at 12s. to 12s. 3d. for flour, and 10s. for roll. Turpentine is better, last sales made at 48s. to 48s. 6d. A large business done in Petroleum, and the price closes firm at 3s. Ashes are without change. Rosin is 1s. to 2s. dearer, and more doing.

The sales of Drugs has been to a moderate extent at about the former rates. A fair business has been done in Castor Oil at 4¾d. to 5¼d., and some fine Italian at 6½d. to 7¼d. Cod Liver Oil is rather cheaper. Oil Aniseed is rather better; last sales made at 7s. 4d. Oil Cassia steady at 7s. 9d. Several parcels of Citronelle sold at 3¾d. to 4d., and Winters' 4½d. to 4¾d. Jamaica Bees' Wax is 5s. cheaper. A good business has been done in Ipecacuanha at our quotations. Jalap is steady. Cochineal is rather dearer. Tonquin Musk sold steadily. Rhubarb is rather easier. About 150 barrels Tinnevelly Senna sold at 4½d. to 10d., being rather easier. Common Gum Arabic is rather better. Shellac is easier. Animi steady. Gambia is rather more in request. Saltpetre is again rather cheaper. Aloes show no change. In other goods our quotations show few slight variations during the past month.

PRICE CURRENT.

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

	1865.	1865.	1864.	1864.
	s. d.	s. d.	s. d.	s. d.
ARGOL, Cape, per cwt.	80 0 ..	95 0	87 6 ..	101 0
French	58 0 ..	83 0	60 0 ..	85 0
Oporto, red	45 0 ..	47 0	46 0 ..	48 0
Sicily	72 6 ..	75 0	74 0 ..	77 0
Naples, white	68 0 ..	76 0	65 0 ..	80 0
Florence, white	85 0 ..	90 0	85 0 ..	90 0
red	80 0 ..	85 0	80 0 ..	85 0
Bologna, white	90 0 ..	95 0	92 6 ..	97 6
ARROWROOT..(duty 4½ per cwt.)				
Bermuda..per lb.	1 1 ..	1 6	1 6 ..	1 9
St. Vincent	0 2½ ..	0 6½	0 4½ ..	0 7½
Jamaica	0 3 ..	0 5½	0 3½ ..	0 7
Other West India	0 1½ ..	0 3	0 3½ ..	0 4½
Brazil	0 2 ..	0 3½	0 2½ ..	0 3
East India	0 2 ..	0 3½	0 3½ ..	0 6
Natal	0 4 ..	0 8½	0 5½ ..	0 8½
Sierra Leone	0 3½ ..	0 4½	0 4½ ..	0 5½
ASHES....per cwt.				
Pot, Canada, 1st sort	29 6 ..	0 0	31 0 ..	32 0
Pearl, ditto, 1st sort	30 6 ..	31 0	34 0 ..	35 0
BRIMSTONE,				
rough....per ton	140 0 ..	145 0	145 0 ..	150 0
roll	195 0 ..	205 0	195 0 ..	210 0
flour	245 0 ..	250 0	240 0 ..	250 0
CHEMICALS,				
Acid—Acetic, per lb.	0 4 ..	0 0	0 4 ..	0 0
Citric	1 9 ..	1 9½	1 7½ ..	1 7½
Nitric	0 5 ..	0 5½	0 5 ..	0 5½
Oxalic	0 9¼ ..	0 9½	0 10 ..	1 0
Sulphuric	0 0½ ..	0 0	0 0⅜ ..	0 0
Tartaric crystal	1 5 ..	0 0	1 6 ..	0 0
powdered	1 6¼ ..	0 0	1 6½ ..	1 7
Alum ....per ton	140 0 ..	145 0	120 0 ..	125 0
powder	160 0 ..	0 0	140 0 ..	145 0
Ammonia, Carbonate, per lb.	0 5 ..	0 5½	0 5½ ..	0 6
Sulphate ....per ton	260 0 ..	270 0	260 0 ..	290 0
Antimony, ore	160 0 ..	180 0	160 0 ..	180 0
crude ....per cwt	24 0 ..	25 0	26 0 ..	0 0
regulus	34 0 ..	0 0	36 0 ..	37 0
French star	34 0 ..	0 0	36 0 ..	37 0
Arsenic, lump	15 0 ..	0 0	15 0 ..	15 6
powder	6 0 ..	6 3	7 0 ..	7 3
Bleaching powder	10 0 ..	10 6	12 0 ..	12 6
Borax, East India refined..	0 0 ..	0 0	0 0 ..	0 0
British	54 0 ..	0 0	56 0 ..	0 0
Calomel ....per lb.	2 8 ..	0 0	2 10 ..	0 0
Camphor, refined	1 4 ..	0 0	1 3 ..	1 4
Copperas, green ....per ton	50 0 ..	52 6	47 6 ..	50 0
Corrosive Sublimate, per lb.	2 3 ..	0 0	2 4 ..	0 0
Green Emerald	0 0 ..	0 0	0 0 ..	0 0
Brunswick.... per cwt.	0 0 ..	0 0	0 0 ..	0 0

	1865.	1865.	1864.	1864.
	s. d.	s. d.	s. d.	s. d.
CHEMICALS.				
Iodine, dry ..... per oz.	0 5¼ ..	0 6	0 6½ ..	0 6½
Magnesia, Carbon per cwt...	42 6 ..	45 0	42 6 ..	45 0
Calcined . per lb.	1 6 ..	1 8	1 6 ..	1 8
Minium, red ..... per cwt.	21 6 ..	24 6	21 6 ..	24 6
orange	32 6 ..	33 0	32 6 ..	33 0
Potash, Bichromate per lb.	0 6 ..	0 0	0 7 ..	0 0
Chlorate	1 0½ ..	1 1	1 1 ..	0 0
Hydriodate..per oz.	0 5½ ..	0 6¼	0 6 ..	0 6¼
Prussiate....per lb.	0 11¼ ..	0 11½	0 11½ ..	0 11¾
red	1 9 ..	1 9½	1 10 ..	1 11
Precipitate, red .... per lb.	2 9 ..	0 0	2 11 ..	0 0
white	2 9 ..	0 0	2 11 ..	0 0
Prussian Blue	1 0 ..	1 10	1 0 ..	1 10
Rose Pink .....per cwt.	29 0 ..	0 0	29 0 ..	0 0
Sal-Acetos .....per lb.	0 11½ ..	0 0	1 0 ..	0 0
Sal-Ammoniac ....per cwt.				
British	35 6 ..	38 0	35 6 ..	37 6
Salts, Epsom	8 6 ..	0 0	8 0 ..	8 6
Glauber.....	5 0 ..	5 6	5 0 ..	5 6
Soda, Ash.....per deg.	0 2¼ ..	0 2¾	0 2 ..	0 0
Bicarbonate..per cwt.	12 3 ..	12 6	11 9 ..	12 0
Crystals .....per ton	97 6 ..	0 0	0 0 ..	97 6
Sugar Lead, white per cwt.	37 0 ..	37 6	38 0 ..	39 0
brown	26 0 ..	26 6	28 0 ..	29 0
Sulphate Quinine....per oz.				
British, in bottle ..	5 3 ..	5 4	6 3 ..	6 6
Foreign	4 11 ..	5 0	5 10 ..	5 11
Sulphate Zinc.....per cwt.	14 6 ..	15 0	14 6 ..	15 0
Verdigris.....per lb.	0 11 ..	1 0	0 11 ..	1 0
Vermilion, English	2 11 ..	3 0	2 8 ..	3 0
China	2 6 ..	0 0	3 0 ..	3 2
Vitriol, blue or Rom. per ct.	27 0 ..	0 0	31 0 ..	32 0
COCHINEAL, per lb.				
Honduras, black	3 2 ..	5 0	3 1 ..	4 6
silver	2 9 ..	3 5	2 6 ..	3 5
Mexican, black	3 0 ..	3 7	3 2 ..	3 4
silver	2 10 ..	3 2	2 10 ..	3 0
Lima.....	0 0 ..	0 0	0 0 ..	0 0
Teneriffe, black.....	3 2 ..	3 11	3 2 ..	3 10
silver.....	3 0 ..	3 3	3 0 ..	3 2
DRUGS,				
Aloes, Hepatic ....per cwt.	100 0 ..	170 0	100 0 ..	170 0
Socotrine	160 0 ..	290 0	170 0 ..	300 0
Cape, good	41 0 ..	43 0	45 0 ..	47 0
inferior.....	24 0 ..	44 0	30 0 ..	44 0
Barbadoes	40 0 ..	300 0	50 0 ..	320 0
Ambergris, grey ....per oz.	21 0 ..	25 0	16 0 ..	18 0
Angelica Root ....per cwt.	20 0 ..	35 0	20 0 ..	35 0
Aniseed, China star.....	160 0 ..	165 0	107 6 ..	110 0
German, &c.	24 0 ..	40 0	24 0 ..	39 0
Balsam, Canada ....per lb.	0 10 ..	0 11	0 10 ..	0 11
Capivi	1 7 ..	2 0	1 9 ..	1 10
Peru.....	4 4 ..	4 6	4 9 ..	4 11
Tolu.....	3 0 ..	3 2	3 10 ..	3 11
Bark, Cascarilla....per cwt.	24 0 ..	34 0	25 0 ..	36 0
Peru, crown & grey per lb.	0 9 ..	2 0	0 10 ..	2 3
Calisaya, flat	2 2 ..	2 9	3 0 ..	3 6
quill.....	2 0 ..	2 6	2 9 ..	3 3
Carthagena.....	0 10 ..	1 9	1 2 ..	2 8
Pitayo	0 10 ..	2 2	1 7 ..	2 4
Red	1 10 ..	10 0	2 6 ..	9 0
Bay Berries.....per cwt.	0 0 ..	0 0	0 0 ..	0 0
Bucca Leaves.....per lb.	0 4 ..	0 10	0 3 ..	0 11
Camomile Flowers	20 0 ..	65 0	25 0 ..	105 0
Camphor, China	95 0 ..	97 6	85 0 ..	90 0
Canella alba	23 0 ..	33 0	23 0 ..	35 0
Cantharides .....per lb.	2 2 ..	2 3	2 7 ..	2 8
Cardamoms, Malabar, good	6 3 ..	7 0	5 6 ..	6 3
inferior	4 6 ..	6 0	4 0 ..	5 6
Madras	2 9 ..	5 3	2 9 ..	4 6
Ceylon.....	3 3 ..	4 0	5 0 ..	5 5
Cassia Fistula.....per cwt.	25 0 ..	35 0	14 0 ..	22 0
Castor Oil, 1st pale ..per lb.	0 6¼ ..	0 7¼	0 6 ..	0 7¼
2nd	0 5¼ ..	0 6	0 4¾ ..	0 5¼
inferior and dark	0 4¾ ..	0 5	0 4¼ ..	0 4½
Bombay, in casks	0 4½ ..	0 4¾	0 4¼ ..	0 4¾
Castorum.....	1 0 ..	20 0	1 0 ..	20 0
China Root .....per cwt.	0 0 ..	0 0	17 0 ..	24 0
Cocculus Indicus	27 0 ..	28 0	20 0 ..	24 0
Cod Liver Oil .....per gal.	3 6 ..	7 0	6 0 ..	12 0
Colocynth, apple ....per lb.	0 7 ..	1 0	0 6½ ..	0 11
Colombo Root ....per cwt.	140 0 ..	180 0	90 0 ..	120 0
Cream Tartar				
French.....	97 6 ..	0 0	102 6 ..	105 0
Venetian	100 0 ..	0 0	105 0 ..	107 6
grey	90 0 ..	0 0	95 0 ..	100 0
brown	85 0 ..	90 0	85 0 ..	92 6
Croton Seed	400 0 ..	500 0	70 0 ..	80 0
Cubebs.....	80 0 ..	82 6	97 6 ..	100 0
Cummin Seed.....	19 0 ..	23 0	27 0 ..	34 0
Dragon's blood reed.....	200 0 ..	320 0	200 0 ..	300 0
lump	75 0 ..	260 0	90 0 ..	260 0
Galangal Root	12 0 ..	15 0	18 0 ..	20 0
Gentian Root.....	21 0 ..	22 0	23 0 ..	0 0
Guinea Grains .... per cwt.	60 0 ..	65 0	55 0 ..	57 0
Honey, Narbonne	40 0 ..	80 0	40 0 ..	80 0
Cuba	25 0 ..	33 0	26 0 ..	38 0
Jamaica	28 0 ..	58 0	27 0 ..	63 0
Ipecacuanha .....per lb.	7 5 ..	7 9	7 0 ..	7 3
Isinglass, Brazil	2 0 ..	4 11	1 10 ..	4 6
East India	1 0 ..	4 8	0 6 ..	4 8
West India	3 0 ..	3 4	3 2 ..	3 4
Russian	9 6 ..	10 9	9 6 ..	11 0
Jalap.....	1 0 ..	5 3	0 9 ..	5 4

DRUGS—*continued.*	1865. s. d.	1865. s. d.	1864. s. d.	1864. s. d.
Juniper Berries ....per cwt.	7 0 ..	9 0	6 0 ..	9 0
German and French ..	9 0 ..	10 0	8 0 ..	10 0
Italian				
Lemon Juice .....per deg.	0 0¼ ..	0 0¾	0 0½ ..	0 0¾
Liquorice .....per cwt.	..			
Spanish	75 0 ..	80 0	80 0 ..	83 0
Italian	55 0 ..	75 0	55 0 ..	70 0
Manna, flaky	2 0 ..	2 6	2 7 ..	2 9
small	1 2 ..	1 4	1 4 ..	0 0
Musk .....per oz.	22 0 ..	32 0	18 0 ..	34 0
Nux Vomica	11 6 ..	15 0	11 0 ..	15 6
Opium, Turkey	11 0 ..	14 6	16 0 ..	17 6
Egyptian	0 0 ..	0 0	10 0 ..	16 0
Orris Root .....per cwt.	29 0 ..	31 0	28 0 ..	33 0
Pink Root ..... per lb.	3 0 ..	0 0	3 8 ..	4 0
Quassia (bitter wood) per ton	65 0 ..	70 0	85 0 ..	90 0
Rhatany Root .....per lb.	0 5 ..	1 6	1 0 ..	1 8
Rhubarb, China, round	2 9 ..	10 0	2 9 ..	6 0
flat	4 0 ..	9 6	3 6 ..	6 2
Dutch, trimmed ..	10 6 ..	0 0	0 0 ..	0 0
Russian	10 0 ..	12 0	12 6 ..	18 0
Saffron, Spanish	29 0 ..	32 0	28 0 ..	33 0
Salep..... per cwt.	120 0 ..	130 0	140 0 ..	145 0
Sarsaparilla, Lima	1 0 ..	1 4	1 0 ..	1 5
Para	0 11 ..	1 1	0 11 ..	1 2
Honduras	0 9 ..	1 7	0 11 ..	1 6
Jamaica	1 1 ..	2 3	1 6 ..	2 3
Sassafras .....per cwt.	14 6 ..	15 0	14 0 ..	15 0
Scammony, virgin ..per lb.	30 0 ..	35 0	32 0 ..	38 0
second	14 0 ..	23 0	12 0 ..	23 0
Seneka Root	2 10 ..	3 0	3 0 ..	3 3
Senna, Calcutta	0 0 ..	0 0	0 0 ..	0 0
Bombay	0 4 ..	0 6	0 3½ ..	0 5
Tinnevelly	0 4 ..	1 3	0 4 ..	1 6
Alexandria	0 3 ..	0 9	0 3½ ..	0 8
Snake Root	3 0 ..	0 0	4 6 ..	4 9
Spermaceti, refined	0 11 ..	0 0	0 11 ..	1 1
Squills	0 1½ ..	0 3½	0 0¾ ..	0 2¼
Tamarinds, E. India, per cwt.	15 0 ..	16 0	18 0 ..	22 0
West India	10 0 ..	20 0	12 0 ..	24 0
Terra Japonica—				
Gambier ....per cwt.	20 0 ..	27 6	24 0 ..	30 0
Cutch	22 0 ..	26 0	24 0 ..	25 0
Valerian Root, English	20 0 ..	29 0	20 0 ..	30 0
Vanilla, Mexican.....per b.	20 0 ..	35 0	26 0 ..	38 0
Wormseed.....per cwt.	10 0 ..	0 0	11 0 ..	12 0
GUM—Ammoniac, drop, per cwt.	105 0 ..	170 0	95 0 ..	120 0
lump	35 0 ..	85 0	30 0 ..	85 0
Animi, fine pale	200 0 ..	230 0	200 0 ..	210 0
bold amber.....	190 0 ..	220 0	190 0 ..	210 0
medium	160 0 ..	180 0	160 0 ..	180 0
small and dark	100 0 ..	150 0	100 0 ..	155 0
ordinary dark	40 0 ..	95 0	40 0 ..	95 0
Arabic, E. I., fine pale picked	72 0 ..	80 0	85 0 ..	95 0
unsorted, good to fine	62 0 ..	70 0	64 0 ..	76 0
red and mixed	46 0 ..	60 0	50 0 ..	60 0
siftings	25 0 ..	40 0	25 0 ..	40 0
Turkey, picked, good to fine	130 0 ..	180 0	120 0 ..	160 0
second and inferior.	65 0 ..	120 0	65 0 ..	110 0
in sorts	32 0 ..	50 0	32 0 ..	50 0
Gedda.....	40 0 ..	45 0	40 0 ..	42 0
Barbary, white	58 0 ..	73 0	74 0 ..	80 0
brown	45 0 ..	50 0	50 0 ..	55 0
Australian.....	30 0 ..	36 0	30 0 ..	40 0
Assafœtida, fair to good	25 0 ..	55 0	38 0 ..	75 0
Benjamin, 1st quality	340 0 ..	900 0	350 0 ..	850 0
2nd „	240 0 ..	300 0	280 0 ..	300 0
3rd „	50 0 ..	240 0	50 0 ..	240 0
Copal, Angola, red	70 0 ..	80 0	85 0 ..	95 0
pale	70 0 ..	80 0	85 0 ..	90 0
Benguela	60 0 ..	90 0	70 0 ..	90 0
Sierra Leone .. per lb.	0 4 ..	0 11	0 4 ..	1 0
Manilla..... per cwt.	23 0 ..	36 0	25 0 ..	55 0
Dammar, pale .....per cwt.	40 0 ..	51 0	34 0 ..	47 6
Galbanum.....	160 0 ..	170 0	100 0 ..	120 0
Gamboge, picked, pipe	250 0 ..	300 0	150 0 ..	190 0
in sorts	140 0 ..	240 0	80 0 ..	140 0
Gualacum.....per lb,	0 9 ..	1 5	0 6 ..	1 6
Kino ..... per cwt.	340 0 ..	460 0	280 0 ..	450 0
Kowrie	27 0 ..	60 0	20 0 ..	50 0
Mastic, picked ..... per lb.	8 6 ..	9 6	4 6 ..	5 0
Myrrh, gd. and fine, per cwt.	130 0 ..	180 0	140 0 ..	180 0
sorts.....	70 0 ..	120 0	70 0 ..	130 0
Olibanum, pale drop	68 0 ..	78 0	73 0 ..	80 0
amber and yellow	55 0 ..	67 0	58 0 ..	70 0
mixed and dark..	20 0 ..	48 0	18 0 ..	45 0
Senegal	70 0 ..	80 0	75 0 ..	80 0
Sandrac	72 6 ..	95 0	80 0 ..	100 0
Tragacanth, leaf	180 0 ..	260 0	180 0 ..	260 0
in sorts	100 0 ..	130 0	100 0 ..	130 0
OILS.....per tun	£ s.	£ s.	£ s.	£ s.
Seal.....	38 0 ..	44 0	42 0 ..	49 0
Sperm, body.....	10 0 0 ..	0 0	64 0 ..	66 0
Cod	49 0 ..	0 0	51 0 ..	52 0
Whale, Greenland	0 0 ..	0 0	0 0 ..	0 0
South Sea, pale.....	44 0 ..	45 0	42 0 ..	48 0
East India Fish.....	30 0 ..	32 0	36 0 ..	0 0
Olive, Galipoli ..... per ton	53 0 ..	54 0	60 0 ..	61 0
	s. d.	s. d.	s. d.	s. d.
Florence, half-chest ..	20 0 ..	0 0	20 0 ..	21 0
Cocoanut, Cochin ..per cwt.	45 0 ..	46 0	39 6 ..	40 6
Ceylon	42 6 ..	43 6	37 6 ..	38 6
Sydney	36 0 ..	42 0	34 0 ..	37 0
Ground Nut and Gin.				
Bombay	39 0 ..	40 0	38 6 ..	39 0

OILS—*continued.*	1865. s. d.	1865. s. d.	1864. s. d.	1864. s. d.
Madras .....per cwt.	42 6 ..	43 0	37 0 ..	38 0
Palm, fine	37 0 ..	39 0	35 0 ..	36 0
Linseed	35 6 ..	36 0	35 6 ..	0 0
Rapeseed, English, pale	46 6 ..	47 0	44 0 ..	44 6
brown	45 6 ..	46 0	42 0 ..	0 0
Foreign pale	47 0 ..	47 6	46 0 ..	0 0
brown	45 6 ..	44 6	42 0 ..	0 0
Lard	77 0 ..	0 0	36 0 ..	47 0
Tallow	38 0 ..	0 0	41 0 ..	41 6
Rock Crude ..... per ton	0 0 ..	£20 0	£18 0 ..	0 0
Oils, Essential—				
Almond, essential ....per lb.	0 0 ..	0 0	0 0 ..	0 0
expressed	0 10½ ..	0 0	0 0 ..	0 0
Aniseed	7 4 ..	0 0	6 2 ..	6 4
Bay .....per cwt.	0 0 ..	0 0	110 0 ..	120 0
Bergamot .....per lb.	10 0 ..	15 0	7 0 ..	10 0
Cajeputa, (in bond) ..per oz.	0 2 ..	0 2½	0 2½ ..	0 2½
Caraway .....per lb.	5 0 ..	6 6	5 0 ..	6 6
Cassia	7 9 ..	0 0	8 5 ..	8 6
Cinnamon (in bond) ..per oz.	1 2 ..	3 3	0 9 ..	3 0
Cinnamon Leaf	0 5 ..	0 8	0 2 ..	0 4½
Citronel	0 3½ ..	0 4½	0 5½ ..	0 6½
Clove	0 0 ..	0 0	0 2 ..	0 4
Croton	1 6 ..	1 8	0 9 ..	1 0
Juniper.....per lb.	2 0 ..	2 6	1 10 ..	3 0
Lavender	1 9 ..	2 10	2 6 ..	4 6
Lemon	6 9 ..	9 0	5 6 ..	7 0
Lemongrass.....per oz.	1 3 ..	1 6	0 10½ ..	0 11
Mace, ex.	0 1 ..	0 2½	0 2 ..	0 3½
Neroli	5 0 ..	5 9	5 0 ..	7 0
Nutmeg	0 1½ ..	0 3½	0 1 ..	0 2½
Orango .....per lb.	5 6 ..	6 0	5 6 ..	6 9
Otto of Roses .....per oz.	18 0 ..	22 0	16 0 ..	24 0
Peppermint, per lb.				
American	14 0 ..	14 6	12 0 ..	13 0
English	0 0 ..	0 0	34 0 ..	36 0
Rhodium .....per oz.	0 0 ..	0 0	0 0 ..	0 0
Rosemary .....per lb.	2 0 ..	2 3	0 0 ..	0 0
Sassafras	3 3 ..	3 6	3 9 ..	4 0
Spearmint	5 0 ..	8 0	5 0 ..	8 0
Spike	0 0 ..	0 0	0 0 ..	0 0
Thyme	1 9 ..	2 0	0 0 ..	0 0
PITCH, British .....per cwt.	12 0 ..	0 0	12 0 ..	0 0
Swedish	0 0 ..	0 0	0 0 ..	0 0
SALTPETRE, per cwt.				
English, 6 per cent. or under	23 0 ..	23 6	31 0 ..	32 6
over 6 per cent.	22 6 ..	23 0	30 0 ..	30 6
Madras	20 0 ..	22 0	29 6 ..	30 6
Bombay.....	20 0 ..	22 0	28 0 ..	30 0
British-refined	28 6 ..	29 0	35 0 ..	36 0
Nitrate of soda.....	13 6 ..	14 0	15 6 ..	16 6
SEED, Canary .....per qr.	40 0 ..	48 0	0 0 ..	0 0
Caraway, English .. per cwt.	0 0 ..	0 0	0 0 ..	0 0
German, &c.....	0 0 ..	0 0	0 0 ..	0 0
Coriander	0 0 ..	0 0	0 0 ..	0 0
East India.....	0 0 ..	0 0	0 0 ..	0 0
Hemp.....	44 0 ..	46 0	0 0 ..	0 0
Linseed, Black Sea.....	56 0 ..	62 0	64 0 ..	65 0
Calcutta	57 0 ..	60 0	60 0 ..	67 0
Bombay	60 0 ..	61 6	66 0 ..	68 0
Egyptian	54 0 ..	0 0	63 0 ..	0 0
Mustard, brown....per bshl.	6 0 ..	10 0	0 0 ..	0 0
white	11 0 ..	12 0	12 0 ..	13 0
Poppy, East India....per qr.	52 0 ..	52 6	51 0 ..	0 0
Rape, English	0 0 ..	0 0	0 0 ..	0 0
Danube	61 0 ..	62 0	0 0 ..	0 0
Calcutta fine.....	58 0 ..	60 0	56 0 ..	57 0
Bombay	72 0 ..	74 0	66 0 ..	67 0
Teel, Sesmy or Gngy.....	60 0 ..	63 0	60 0 ..	65 0
Cotton .....per ton	150 0 ..	155 0	140 0 ..	0 0
Ground Nut Kernels per ton	270 0 ..	0 0	280 0 ..	260 0
SOAP, London yel. .. per cwt.	28 0 ..	32 0	20 0 ..	34 0
mottled	32 0 ..	36 0	24 0 ..	30 0
curd	46 0 ..	50 0	46 0 ..	50 0
Castile	40 0 ..	42 0	40 0 ..	41 0
Marseilles	40 0 ..	42 0	40 0 ..	42 0
Soy, China .....per gal.	3 3 ..	3 6	2 10 ..	3 0
Japan	1 6 ..	0 0	1 5 ..	0 0
Sponge, Turkey, fine picked	19 0 ..	23 0	19 0 ..	20 0
fair to good	7 0 ..	17 0	7 0 ..	17 0
ordinary ..	2 6 ..	6 0	2 6 ..	6 0
Bahama ..	0 4 ..	1 3	0 4 ..	1 3
TURPENTINE, Rough, per ct.	0 0 ..	0 0	0 0 ..	0 0
Spirits, French	48 0 ..	0 0	66 6 ..	67 0
American, in casks	0 0 ..	0 0	0 0 ..	0 0
WAX, Bees, English	180 0 ..	185 0	170 0 ..	175 0
German	190 0 ..	200 0	162 6 ..	185 0
American	185 0 ..	0 0	175 0 ..	0 0
white fine.....	0 0 ..	0 0	0 0 ..	0 0
Jamaica	180 0 ..	190 0	185 0 ..	192 6
Gambia	190 0 ..	195 0	175 0 ..	195 0
Mogadore	130 0 ..	170 0	130 0 ..	167 6
East India.....	150 0 ..	190 0	150 0 ..	180 0
ditto, bleached	200 0 ..	220 0	200 0 ..	240 0
vegetable, Japan	56 0 ..	68 0	56 0 ..	66 0
WOOD, Dye, per ton				
Fustic, Cuba.....	160 0 ..	180 0	170 0 ..	180 0
Jamaica	105 0 ..	110 0	140 0 ..	145 0
Savanilla	120 0 ..	0 0	0 0 ..	0 0
Zante	0 0 ..	0 0	0 0 ..	0 0
Logwood, Campeachy	180 0 ..	190 0	190 0 ..	210 0
Honduras ..	100 0 ..	0 0	100 0 ..	105 0
St. Domingo	75 0 ..	85 0	87 6 ..	0 0
Jamaica	75 0 ..	0 0	82 0 ..	85 0