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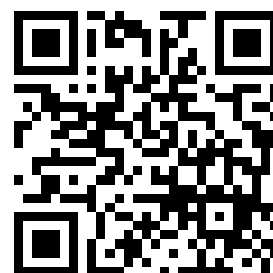
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All communications for the Editor to be addressed—Editor, FOOD AND SANITATION, Ivy Lodge, Streatham-place, London, S.W.

Bound volumes of Vol. I., II., III., and IV., with Index, may be obtained from E. W. ALLEN, 4, Ave Maria-lane, Paternoster-row, London, E.C. Price 10/- each.

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Food and Sanitation.

SATURDAY, JANUARY 5TH, 1895.

THE LONDON CHAMBER OF COMMERCE AND A NEW FOOD AND DRUGS ACT.

It is well for the public that the London Chamber of Commerce has a great deal more talk than power, and a bad thing for the Chamber itself that upon important questions it is at the mercy of cliques interested each in conserving the adulteration out of which they make the most profit. The following resolutions passed at the annual meeting of the Chamber condemn themselves and conclusively prove that the Select Committee of the House of Commons ought to regard with grave distrust any recommendations the Chamber may make.

The Chairman submitted the following motion for adoption:—

"That in the opinion of the Chemical Section of this Chamber, in order to make the Sale of Food and Drugs Act more efficient in its working, it is desirable that drugs should be treated in a separate section of the Act and not in the Act itself, as at present associated with foods, and that a sub-committee, consisting of the chairman and Mr. H. Preston, be appointed, subject to the approval of the Council, to confer with the Committee of the House of Commons."

Mr. Howard moved this as a resolution, and remarked on the fact that their goods were often judged on the report of an analyst who knew nothing about drugs, and by a magistrate who knew less. It was impossible to imagine what would be done in

any given circumstances, as their Pharmacopœia was the most extraordinary in any civilised country. If a conviction could be secured by using it, it was used, if, better, by ignoring it, it was ignored accordingly. They ought to have some definite standard to go by. A clause which might be exceedingly just as applied to food might be most unjust as applied to drugs.

This resolution having been assented to, the Chairman stated that there was a feeling that there ought to be some authority to appeal to in case of doubt or dispute. He therefore submitted the following resolution for adoption:—

"That in the opinion of the Chemical Trade Section of this Chamber the Council of the Chamber should, upon the re-assembling of Parliament, put itself in communication with the Select Committee of the House of Commons, having under its consideration the revision of the Sale of Food and Drugs Act, with the object of urging that a Board of Reference for appeal in cases of disputed analyses should be constituted, such Board of Reference, so far as drugs are concerned, to consist of at least four persons, being the nominees of (1) Inland Revenue Authorities, Somerset House; (2) Society of Public Analysts; (3) Medical Council of Great Britain and Ireland; (4) Pharmaceutical Society of Great Britain."

Some considerable discussion ensued, but the resolution was ultimately adopted on the motion of Mr. J. C. Preston and seconded by Mr. Howard, it being amended in the direction of five persons instead of four, the substitution of the Institute of Chemistry for the Society of Public Analysts and the addition of the London Chamber of Commerce.

These resolutions show that the Chamber is not so anxious to suppress adulteration as to shield certain ingenious dodges now being profitably practiced by its most important members.

COCOA ADULTERATION.

At the Marylebone Police-court, on December 27th, before Mr. Cooke, Mrs. Sarah Wale (trading as Wale and Co.), carrying on business at 83, Highgate-road, St. Pancras, was summoned by the St. Pancras Vestry for selling cocoa which was adulterated by the admixture of starch-farina to the extent of 20 per cent. and sugar to the amount of 35 per cent. Mr. Ricketts, solicitor, prosecuted on behalf of the Vestry, and the case was watched by a representative of Messrs. Fry and Sons. The defendant did not appear. Mr. Ricketts pointed out that the "cocoa" in question contained but 45 per cent. of the actual article. It was obvious, therefore, that the defendant, selling the article at the rate of 1s. per lb., made a very considerable profit.—Mr. Cooke: Of course cocoa is not sold pure.—Mr. Ricketts: Oh yes, sir, it is.—Mr. Cooke:—For use, is it?—Mr. Ricketts: Oh yes.—Annie Emily Davy said she was an assistant to Mr. Hartnoll, sanitary inspector to the St. Pancras Vestry. Acting under Mr. Hartnoll's directions, she went to the defendant's shop on November 22nd and asked for three-quarters of a pound of cocoa. She was served by Mr. Wale, and paid him 9d. Francis Hartnoll deposed that upon the purchase being completed he entered the defendant's shop and, having received the "cocoa" from the previous witness, told the defendant that he was an inspector under the Food and Drugs Act, and that the article had been purchased for the purpose of analysis. He then offered to divide the "cocoa" into three parts, and subsequently did so, and left one part with the defendant, submitted the second to the public analyst (Dr. Stevenson), and kept the third himself. The result of the analysis was as given in the summons.—By the Magistrate

defendant kept a small shop in the main road.—Mr. Cooke: I don't suppose they sell actual cocoa, but still this is a great adulteration.—Messrs. Fry's representative: Pure cocoa is 1s. 8d. per lb.—Mr. Cooke: I fine the defendant 30s. and 12s. 6d. costs.

MARGARINE REPRESSION IN AMERICA.

By a recent decision of the United States Supreme Court through Justice Harlan the following point was set forth. The Boston agent of a Chicago butterine manufacturer introduced into Massachusetts oleo said to imitate butter in colour. The State Law prohibits the use of any such compound coloured in that way, but allows the use of oleo in a separate and distinct form free from colouring or any ingredient that makes it look like butter. The Supreme Court of Massachusetts upheld the judgment of inferior courts to the effect that the said selling was illegal in the State, and the United States Supreme Court has now confirmed that view. To some extent this does away with the protection hitherto afforded to oleo manufacturers by the original package decision.—*National Provisioner*.

PRESERVATIVES IN CANNED GOODS.

THE *American Grocers* says that the report of the Department of Agriculture, known as Bulletin No. 13, Part VIII., bearing upon canned vegetables, caused much adverse criticism and called forth many protests from packers whose goods were reported as containing salicylic acid. Since then further investigations have been made and reported upon by the chief chemist, who sums up his investigations as follows:—

"First, that the use of added preservatives is, upon the whole, objectionable; second, that their absolute inhibition is not warranted by the facts which have come to our knowledge, but in all cases their presence should be marked upon the label of the can.

There can be no possible objection, however, to the moderate use of common salt or sugar where the addition will tend either to improve the flavour or the keeping quality of the goods; nor, on the other hand, should there be any objection to the use of copper in greening, as, for instance, with canned peas, if the consumer be plainly informed of the fact.

"There is no doubt of the fact that vegetables can be well preserved without the use of salicylic acid. There is, therefore, no necessity for its employment, and it is hoped that packers in general will exclude it from the list of materials added to their preserved goods."

TRICKS OF PUBLICANS.

AT Manchester, on December 20th, before Mr. J. M. Yates, Q.C., and Mr. J. Scott Lings, a number of publicans were summoned at the instance of the Excise authorities for diluting beer. It is the first prosecution of the kind in the country. The charge alleged against the defendants was that they used what is known as a "union." This is done by two pipes being attached to one pump, so that, for instance, a person asking for 6d. beer would be served with 6d. beer and 4d. beer, and this offence was alleged to be a fraud upon the Revenue. The first case taken was that of John M'Bride, beer and wine retailer, at Withington. Mr. Dennis, in opening the case, said that James Lockyer, an officer of the Inland Revenue, went to the defendant's house on October 11th, and there found two casks of 36 gallons connected with one pipe. He traced that pipe to the bar, and took samples from the two barrels, and also from the pipe. They were afterwards forwarded to Somerset House. James Lockyer was called and confirmed this statement. In answer to Mr. Beaumont, who defended, the officer stated that the defendant was not in the house at the time. He took three samples of beer and paid 6d. for them. He told them it was wrong, and that the "union" would have to be removed. James Robbins, analyst at Somerset House, said that he received the samples marked A B C,

and the result of his analysis was that the sample marked B had been diluted by the addition of A. The sample marked C, which was taken from the pipe, showed a dilution equal to 5½ gallons in a barrel of 36 gallons. Mr. Beaumont said that according to the analyst the defendant was working against himself, for the officer had three pints of beer for 6d. which showed that the beer was sold for 4d.—Mr. Yates said to mix beer was illegal and publicans ought to know that it was not allowed. They would inflict a minimum penalty of 20s. and costs.—William Garner, Ship Hotel, Irlam; John Hatton, Levenshulme; John Chapman, Talbot Hotel, Stretford; G. Bostock, Chorlton-cum-Hardy; and J. W. J. Coombes, Midland Hotel, Withington, were each fined 20s. and costs for similar offences. The cases were proved by James Lockyer. In the case of Garner and Hatton the officers found three casks attached to one pipe. On behalf of the defendants it was pointed out that on some occasions they were the losers. It was a practice which had been carried on for some time, and the defendants thought that dilution, the offence with which they were charged, meant adulteration. The practice would be discontinued in future. Mr. Yates said if this did not put a stop to the matter, the Bench would be more severe in future cases.

WHAT IS MALT VINEGAR?

THE past fortnight has seen this question once more brought prominently to the notice of magistrates. At Bradford, on December 20th, the stipendiary, Mr. C. Skidmore, gave judgment in the case which he heard a week ago in which Harriet Clough, of Mildred-street, Bradford, was summoned under the Food and Drugs Act with selling adulterated vinegar as pure malt vinegar. The Stipendiary found that the vinegar was not a vinegar produced by fermentation, and had come to the conclusion that it was sold in the same state as received from the wholesale dealers. On the question of guarantee, in which the defendant endeavoured to evade responsibility by pleading that the invoice was a sufficient guarantee as to the quality of the vinegar, he thought the invoice did not constitute a guarantee that the vinegar was pure. The barrel containing the vinegar bore the label "French vinegar; free from any added acid." After quoting previous decisions on the point he dismissed the case, but ordered the defendant to pay 18s. costs towards the expenses of the prosecution.—The Town Clerk: That 18s. will suit the public immensely.

Our readers will no doubt be as puzzled as we are to understand the grounds for this decision. The substance admittedly was not malt vinegar, and the invoice did not constitute a warranty. It is contrary, therefore, to law that the case should be dismissed. But the Bradford Stipendiary has been giving very curious decisions of late, grounded apparently more on a desire to annoy and thwart the town clerk and local officials than in common sense or legal knowledge, and in the public interest it is time farcical justice of this character came to an end. There has been no decision upon the question that in any way justifies the Bradford Stipendiary's action, and it is decidedly against the public welfare that adulteration should be thus encouraged.—In another case, heard at Thames Police-court, on December 21st, William Meachem, of 50, Three Colt-street, Limehouse, appeared to answer an adjourned summons, taken out at the instance of the Limehouse District Board of Works, for selling vinegar deficient in acetic acid to the extent of 40 per cent. Dr. Rogers was called for the prosecution, and in answer to Mr. Young, who appeared for the Board of Works, said he was not able to say there had been an abstraction of acetic acid; but the sample of vinegar contained less than 40 per cent. of the limit allowed by the Society of Public Analysts. He knew of no other way than by chemical process that acetic acid could be abstracted from vinegar. Mr. Dickinson said he was prepared to hold, as a matter of law, that dilution was not abstraction. He

must hold the summons must fail, as dilution by water was not abstraction under the 9th section. If the certificate had been in a different form, Mr. Young might have proceeded under the 6th section. Addition to anything did not make subtraction. Mr. Young asked if his Worship would be willing to grant a case if he asked for one. Mr. Dickinson said he would not be justified in granting a case, as the English language was very plain. The Board of Works would have to pay defendant £1 1s. costs.

In this case the vexed question of strengths is once more raised, and the point is of so much importance to manufacturers that we hope it will not be lost sight of in the inquiry by the Select Committee of the House of Commons which will doubtless be appointed next session.

CONFECTIONERS' BUTTER.

In an action at the Whitechapel County-court, on December 20th, for £11, for goods sold, brought by Abraham Lewinsohn, of Greenfield-street, E., against Jacob Grunberg, of Middlesex-street, it was stated that the article supplied was 10 tons of dirty butter, which was sold to defendant at 22s. a ton.—Judge Bacon: Dirty butter? Was it margarine?—The Plaintiff: No, some of it was. It was very dirty, it was the scrapings of butter and margarine barrels.—Judge Bacon: Is such filth sold to be eaten?—The Plaintiff: Yes, I believe so, and for confectioners.—Judge Bacon: Is anything done to it? How is it cleaned?—The Witness: I don't know.—Judgment was eventually given for the plaintiff.

MR. STEVENS AGAIN!

AT West London, on December 23rd, Thomas F. Stevens, of Leyton, appeared to answer three summonses in respect of the sale of milk from which a considerable portion of the fat had been abstracted. Mr. Blanco White supported the summonses on behalf of the Fulham Vestry. The defence was that Stevens sold separated milk, and had labels on his barrows to that effect. He said the men for their own purposes tore the labels off, but to prevent that practice he had caused the words to be painted. Previous convictions having been proved, Mr. Curtis Bennett imposed a penalty of £10, with 37s. 6d. costs in the first case, and in the others adjourned the summonses *sine die*, binding him over in recognisances to come up for judgment if called upon.

CLERKENWELL VESTRY.

FINES FOR ADULTERATION.—A WORD FOR THE MAGISTRATES.

MR. WALTON remarked on the summonses in the parish for milk adulteration, and on the uniform fines of 10s. 6d. and 2s. costs. He thought this was a kind of premium to milkmen to water their milk, because 10s. 6d. and 2s. costs was not a considerable sum per annum. The magistrates, he further considered, ought to have this put before them.

Mr. Scheib was of opinion that the best thing to do was to write to the Home Secretary on the subject; the vestry had no power with the magistrates.

SPENT GINGER IN CASSIA.

AT the Gateshead County Police-court, on December 27th, Wm. Winham, manager of the Blaydon Co-operative Store, was charged under the Food and Drugs Act with having sold cassia adulterated with 30 per cent. of spent ginger. Mr. Laidlaw, inspector under the Food and Drugs Act, prosecuted, and Mr. J. G. Hewell defended. John W. Wilson, Mr. Laidlaw's assistant, said on the 9th ult. he went to the grocery department of the Blaydon Co-operative Store, and there purchased four ounces of ground cassia, for which he paid 1s. 6d. The cassia was analysed, and was found to contain 30 per cent. of spent ginger. For the defence it was stated that the cassia was bought two years ago and a warranty was given with it. The Bench said the matter was a very important one for both manufacturer and the retailer. But the public must be protected, and a fine of £1 and costs was inflicted.

PUTRID RABBITS IN SOUTH SHIELDS MARKET.

A TRADESMAN HEAVILY FINED.

AT South Shields Police-court, on December 21st, before Ald. Wardle and Dr. Crisp, James Bone, 16, Hedley-street, Newcastle; Alex. Curry, 132, Stevenson-street, Westoe; and Daniel Robertson, fruit and potato merchant, Butcher Market, Newcastle, were charged with exposing for sale 162 rabbits in the South Shields Market-place, which were unfit for human food. The Town Clerk prosecuted, and Mr. Gee, of Newcastle, defended.

The Town Clerk opened the case by saying that the defendants on Monday last exposed rabbits for sale in the Market-place which were stinking and unfit for human food. The rabbits were taken before a magistrate the same evening and ordered to be destroyed.

Michael Pollock, meat inspector, said he was on duty in the Market-place on the date in question, and there saw the defendants selling rabbits. He could smell that the rabbits were but a few yards off, and after inspecting them, informed defendants that they were all unfit for food. He seized them that night and took them before a magistrate, who examined them carefully and ordered them to be destroyed. He could not say they were shot rabbits. Some of them were black and putrid.

Mr. Grayson and Detective Cowe, both deposed to having seen the rabbits, and expressed an opinion that the rabbits were putrid and unfit for human food.

Mr. Gee, for the defence, stated that his instructions were that the rabbits were received on Monday direct from Scotland, and were taken possession of in the absence of Mr. Robertson. He would, therefore, prove that Mr. Robertson had no guilty knowledge of the condition of the rabbits, which he contended would justify the Bench in dismissing the charge against him.

Matthew Nicholson, clerk of Mr. Robertson, fruiterer, Newcastle, stated that the rabbits arrived on the morning of the 10th inst., direct from Scotland. At the time of their receipt he had no other rabbits in stock. Mr. Robertson was not present when the rabbits arrived, and though he gave instructions for some of them to be sent to South Shields, he did not see them. In witness's opinion the rabbits were good and quite saleable, and a very large number of the same consignment were sold in Newcastle on the Monday. Mr. Robertson only received commission on the sales effected in South Shields. Cross-examined by the Town Clerk, witness stated that he didn't examine the cases when they arrived, but he saw the rabbits being put into the baskets before they were sent to South Shields.

In reply to the Chairman, witness said his master only sent rabbits down to South Shields when they had a very heavy consignment, as they usually fetched better prices in Newcastle market.

The Chairman said the Bench were of opinion that the case was a severe one. The two defendants Bone and Curry would be discharged, as they were only the servants of Robertson, but the latter would be fined £20 and costs.

CORRESPONDENCE.

ALCOHOL AND WATER.

To the Editor of FOOD AND SANITATION.

December 28th, 1894.

SIR,—In the Pharmacopoeia we have nearly one hundred alcoholic tinctures and preparations, and we consume about half a dozen more obtained from publicans and others. We need not be cheated in any of these alcoholic preparations, for we can ascertain in less than one minute the alcoholic strength of any of them. We simply take one table-spoonful of water in a wineglass or phial, and one table-spoonful of the whiskey, etc., in another wineglass, both being of the same temperature—we ascertain that temperature by a small sensitive thermometer (a bath thermometer with a scale inside and out of its case will do in an emergency); we then mix the table-spoonful of whiskey with the table-spoonful of water, and the heat of the mixture in a few seconds is in ratio to the amount of alcohol. Proof spirit gives from 7 to 8 degrees of heat, spirit 25 under proof gives 5 degrees of heat.—Yours faithfully,

*J. BARKER SMITH, L.R.C.P.

Dulwich, S.E.

*Author of the test and inventor of the Biological Thermometer for this and similar tests.

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Published by M. Henry,
18, Streatham Place, London, S.W.
Subscriptions, 6s. 6d. per annum, post ^{fr}

PROSECUTION CASES.

At Edgware Petty Sessions, on December 19th, John Pitkin, of Great Stanmore, was summoned for selling as new milk, milk adulterated with 20 per cent. of added water. Mr. Robert Watts, inspector under the Food and Drugs Act, stated that while in Great Stanmore, on November 21st, he bought of defendant a pint of new milk, telling him afterwards that it was for public analysis. It was divided, and defendant then said he knew it was all right, as it was from his own cows, milked by his own hands. The milk was submitted for analysis, and the certificate showed that it was adulterated with 20 per cent. of added water. Defendant said his cows had been giving short measure, and he purchased about six gallons daily and mixed it with his own. When he spoke of the milk being good, he referred to his own portion. The Chairman said the Bench were satisfied that something was wrong with the milk, and as it was the first case, he would be fined 40s. and costs.

At Kesteven Petty Sessions, at the Town Hall, Bourne, on December 20th, Henry Garton, landlord of the Plough Inn, Horbling, Trolley; Thomas Houghton, landlord of the Fortescue Arms, Billingborough; Mark Mansfield, of the Grapes Inn, Billingborough; and Elizabeth Maples, of the George and Dragon Inn, Billingborough, were fined £2 and 11s. 3d. costs each, for offences under the Adulteration Act by selling gin and whiskey which were under proof. The cases were proved by Superintendent Brown, the inspector under the Food and Drugs Act.

At Long Ashton Petty Sessions, Isaac Cooksley, milk seller, of Bedminster Down, was summoned by Sergeant Windmill for refusing to supply him with a pint of milk for the purposes of analysis. Fined £2 and costs.—Cecilia Baker, grocer, of Bedminster Down, was also summoned by Sergeant Windmill for refusing to sell him, for the purposes of analysis, half a pound of tea. Fined £2 and costs. Mr. Swann said that cases of refusing to supply an officer with goods for analysis were bad ones, and the Bench hoped these convictions would prove a caution to other shopkeepers. They were determined to inflict heavy penalties upon such offenders as came before them.—Edward Edmonds, of the Telegraph Hotel, Bedminster Down, was summoned for selling rum which was 30 under proof. Sergeant Windmill proved the case, and said that 25 under proof was that which was allowed by statute. Fined £1 and costs.

At Sheffield, on December 21st, Albert Greaves, a boy of 14, of 367, Abbeydale-road, was summoned for selling adulterated milk. Mr. H. Sayer, deputy town clerk, prosecuted. The milk contained 12 per cent. of added water. Defendant's employer, Richard White, 367, Abbeydale-road, appeared, took the boy's responsibility, and was fined 40s., including costs. The defence was that White bought the milk from another dealer.

At Brierley Hill, on December 27th, Thomas Ernest Tyler, manager of Messrs. Wood and Son's branch provision shop, High-street, was summoned under the Margarine Act for exposing for sale a parcel of margarine which had no label attached. Mr. Harold Van Tromp prosecuted, and Mr. W. Waldron defended. Mr. Van Tromp deposed to purchasing some margarine which, on analysis, was found to contain only 3 per cent. of butter. Some of the margarine had the proper label across it. Mr. Waldron contended that the label, which was admitted by Mr. Van Tromp, was quite sufficient to indicate the nature of the article within the meaning of the Act of Parliament. The Stipendiary said an offence had been committed, but it was not so serious as others he had had at that court. Defendant was fined £2 and £2 3s. 6d. costs.

At Smethwick, on December 19th, Walter Atkins, grocer, of Montague-road, Smethwick, was summoned by Mr. Van Tromp, inspector under the Food and Drugs Act, for selling coffee adulterated with 62 per cent. of chicory. Defendant pleaded that he sold the coffee as he bought it. Mr. Harley said defendant had a remedy against the person who sold it to him. The Bench imposed a fine of 10s. and costs, in all £1 16s. 6d.—Edwin Robinson, grocer, of Montague-road, was also summoned for a similar offence on the same date. Mr. Van Tromp said the

circumstances were similar, but in this case the coffee was adulterated with 83 per cent. of chicory. Defendant pleaded that he bought the coffee for 10d. and sold it at a shilling a pound. He had only been in business a fortnight. In reply to a question Mr. Van Tromp said that pure coffee was selling at 1s. 7d. or 1s. 8d. a pound, and chicory at 4d. or 5d. a pound. Defendant was also fined £1 16s. 6d. including costs, and Mr. Harley said defendant ought to get proper paper to wrap it up, and if it was sold to him as a mixture he ought to sell it as a mixture. He did not think there was any fraudulent intention, it was more a matter of ignorance, but still he was responsible to the law for it.

At Liverpool, on December 24th, William Potts, grocer, Walton, was summoned at the instance of the police for having sold at his Aintree branch shop margarine as butter. The defendant himself, under a section of the Act, summoned one of his assistants, James Grounds, for having committed the offence without his knowledge or consent. Mr. Rudd appeared for the defendant Potts. On visiting the shop, a police-sergeant in plain clothes was assured by Grounds that a lump labelled "Sure to please," was butter, at 1s. 2d. a pound. The officer ordered a pound of it, and Grounds, after weighing it, wrapped it in a margarine paper, remarking that the article was margarine, and was 1s. a pound. Grounds, upon being called as a witness, said that he did not know why he charged as much as 1s. a pound for margarine, which, on being analysed, was declared to contain 70 per cent. of fats other than butter, and 11 per cent. of water. The magistrates dismissed the charge against the master, but fined the assistant Grounds 40s. and costs, or a month's imprisonment in default of payment.

At Derby County Police-court, on December 23th, Esther Baker, shopkeeper, was summoned for selling half-a-pound of butter which contained 20 per cent. of water, contrary to the provisions of the Food and Drugs Act, at Draycott. Captain Sandys, inspector under the Act, proved purchasing the sample, and the county analyst said he found that the same sample contained 25 per cent. of water and 75 per cent. of fat. Experts fixed the standard of water allowed at 16 per cent., but really good butter should not contain more than 12 per cent. In answer to the Bench, witness said there was no legal standard fixed at all, only in the case of spirits. A fine of 1s. and costs was imposed, in all £1 2s. Mr. John White, F.I.C., county analyst, gave evidence that the sample contained 20 per cent. of water and only 74 per cent. of actual butter-fat. Defendant's excuse was that she was short of her regular supply, and bought the butter from another source. In answer to the Bench the analyst said there was no legal limit laid down in respect to the question as to how much water butter may contain. Captain Sandys added that he had known the defendant for many years, and had always had a high opinion of her. He did not believe she had done wrong intentionally. Fined 1s. and costs.

At Neath, on December 24th, Watkin Price, landlord of the Lambs Inn, Neath, was charged with selling adulterated whiskey. Defendant was fined 10s. and costs.

Samuel Wroth, dairyman, of Maderia-place, Torquay, was summoned before the Torquay magistrates, on December 24th, for selling adulterated milk. A sample was taken on the 11th and sent to Dr. Winter Blyth, the county analyst, who certified that it was adulterated to the extent of at least 7 per cent. of water. Mr. Shea, for the defence, contended that the adulteration was infinitesimal, and that two ounces was not a fair quantity on which to base an analysis. Fined £1 and 13s. 6d. costs.

At Tregaron Petty Sessions, on December 18th, Ann Morgans, Fountain Inn, inn-keeper, was charged by Chief Constable Howell Evans, inspector under the Food and Drugs Act, with having sold whiskey adulterated with 48 per cent. of added water to P. c. Richard Jones, of Aberystwyth, on the 13th of November. The certificate of Dr. Snape, the public analyst for the county, showed that the whiskey was adulterated with 48 per cent. of water, this being 23 per cent. below the mark, 25 per cent. of water being the amount allowed. Defendant admitted the offence. The Chief Constable applied for the expenses of the witness,

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P.-c. Richard Jones. The Bench granted the application, together with the fee of the public analyst, and fined the defendant 10s. and costs, the total amounting to £1 8s. 4d.—Mary Rowlands, Railway Hotel, Tregaron, inn-keeper, was charged by Chief Constable Howell Evans with refusing to sell half a pint of whiskey to P.-c. Richard Jones, which he required for the purposes of analysis, on November 13th. Mr. W. Hughes Jones, solicitor, Aberystwyth, appeared for defendant. P.-c. Richard Jones said that in company with a young man he went into the Railway Hotel on November 13th. Called for two glasses of whiskey which were supplied by Mrs. Rowlands out of a bottle on a shelf in the bar. Afterwards asked for a pint of the same whiskey which was refused. Witness then informed her that he was a police-constable, and that he had been sent there by the Chief Constable to procure a sample of whiskey which was to be sent to the public analyst to be analysed. She again refused to supply him from that bottle, even when he informed her that she was liable to be fined. At this stage her husband came in and informed witness that he could not have the whiskey from that bottle, but could get it from any of the other bottles. The husband told defendant (his wife) that if she supplied the whiskey from that bottle she would be fined; if she refused she would not be fined. He (witness) then left the premises. Mr. W. Hughes Jones said that the defendant's reason for not supplying witness with that particular whiskey was because he had no other whiskey of that brand in the house. On the other hand, the defendant was perfectly willing that all the whiskey in the other bottles, 29 bottles in all, should be subjected to analysis. The Chief Constable said it would be quite a farce to test the other bottles. So long as the defendant refused to supply the whiskey asked for (the speaker) had cases in point, and referred to *Horder v. Scott*, 5 Q. D., 552; *Smith v. Stace*, 45 J. P., 141; and *Payne v. Hack*, 58 J. P., 165. It was the defendant's duty to supply the constable with the whiskey asked for. Thomas Rowlands, defendant's husband, said he was present when the police-constable came there and asked for the whiskey. The reason for their refusal was because that was the only remaining bottle of that kind of Scotch whiskey. P.-c. Richard Jones and his companion had a glass each from another bottle of whiskey, but this was not paid for. In reply to the Chief Constable, Rowlands said he was in the bar before his wife came in to serve P.-c. R. Jones and his companion. He was prepared to swear to that; but he did not notice the label on that particular bottle. He did not know what was in the bottle. The reason he knew that this was wanted was because it was kept on the window by itself. This bottle did contain Scotch whiskey, while the other bottles contained brandies and other kinds of whiskeys. Denied having told the defendant that she would be fined if she supplied the whiskey. The Bench fined defendant £1 and costs, together with the police-constable's expenses, the total amounting to £2 0s. 4d.—David Davies, New Lamb, inn-keeper, Tregaron, was charged by Chief Constable Howell Evans with a similar offence committed on the same date. P.-c. Richard Jones giving evidence said that in company with a young man he went to defendant's house. Witness called for two 2d. glasses of whiskey, and was supplied with the whiskey by defendant's sister, who was in the bar. The defendant was also present at the time. The whiskey was supplied to them from a bottle on one of the shelves in the bar, the said bottle being about three-parts full. Witness asked the sister for half-a-pint of that whiskey to be poured into an empty bottle in his (witness's) possession. She took the bottle and filled it with half-a-pint of whiskey from another. Witness said he did not order that, and in reply the sister said that he would have to pay 2s. for the whiskey which had been supplied. She added that the whiskey which had been given to witness and his companion was one which had been prepared exclusively for the fair people. Witness then informed her that he had been sent there by the Chief Constable to obtain the whiskey in order that it might be analysed by the public analyst. She then exclaimed "Well! You will have to take it now, and you will have to pay 2s. for it." Witness then left the house. Defendant

said that witness came there with a companion and asked for two glasses of whiskey, which were supplied to him. He then asked for half-a-pint of whiskey in a bottle which he had with him, but refused to take it on the ground that he asked for some whiskey from another bottle. The witness did not state any particular bottle. The Bench inflicted a fine of £1 and costs, and granted the expenses of the witness in this case again, the total amounting to £1 19s. 4d.

At Woolwich, on December 23rd, Walter Wagon, grocer, 225, High-street, Plumstead, was summoned before Mr. Marsham for exposing for sale as butter a substance composed of six parts butter and 94 parts margarine, such substance not being labelled margarine. William Welsh, officer of the Plumstead Vestry, said that he went to the defendant's shop and asked for a pound of butter. He was served and paid 1s. When defendant noticed his bag he said "That is sold as margarine." The tub he cut it from was not labelled margarine. The defendant, who said the ticket had been taken off whilst the counter was being scrubbed, was fined £1 and costs.

At Birmingham Police-court, on December 28th, Percy Bradley, milk-dealer, of Summer-lane, trading as the United Supply Company, was fined 10s. and costs for selling milk which contained 10 per cent. of added water.—C. F. Newey, provision dealer, Newtown-row, was fined 10s. and costs for selling margarine as butter. The defence was that a lad of fifteen had supplied the margarine in mistake. The cases were proved by Mr. Davis, inspector under the Food and Drugs Act.

Mrs. Laws, a general-shop keeper, of Hornsey-vale, was summoned at Highgate, on December 31st, for selling butter containing 60 per cent. of foreign fat, and with not labelling margarine. The evidence showed that on analysis the butter turned out to be margarine. The defendant proved that she sold it just as she had received it, and Mr. Bridge, who appeared for the Middlesex County Council, decided to take the opinion of the solicitor to the Council as to whether he could not take proceedings against the wholesale dealer, under the Merchandise Marks Act, for selling an article different from the one described in the invoice, which stated that it was butter. Under the circumstances he asked the Bench only to order costs. This the Bench consented to, and ordered defendant to pay 5s. 6d. costs on both summonses. Mr. Forbes, for the defence, said his client would take proceedings against the wholesale trader, and render all the assistance she could to the Council.

At Melford Petty Sessions, on December 28th, Superintendent W. G. Emmerson summoned William T. Mullen, grocer, Melford, for selling 1lb. of coffee, the same being adulterated. He produced the analyst's certificate, from which it appeared that the coffee contained 6 per cent. of chicory. The defendant deposed that the coffee was ground in his presence, and there was no chicory in it. He had a sample analysed and there was no chicory mixed with it. Defendant's assistant deposed that he asked complainant if he wanted pure coffee or coffee and chicory mixed, and he said he would have pure coffee. Witness then took some coffee berries and ground them in the mill. He swore positively there was no chicory mixed with it. Superintendent Emmerson said he simply asked for a pound of coffee, but there was nothing said about "pure" coffee, as there was no necessity for him to do so. The Chairman said as there was a difference of opinion he thought it would be just to all parties that the sample in the hands of the Superintendent should be sent to Somerset House for analysis, and this course was adopted. The case was adjourned.

William Lovell, of Oxford-road, Reading, was summoned on December 29th, for selling milk, which was found to be adulterated. The Deputy Town Clerk (Mr. Frederick Stevens) appeared for the prosecution, and stated that the analysis showed 10 per cent. of added water. Defendant pleaded guilty, and said he could not explain how the adulteration happened. It was stated that the Inspector (Mr. Robertson) had had many samples from the shop before and had no reason to complain. The Bench inflicted a penalty of 20s. and costs. (The Mayor did not adjudicate in this case.)



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A VEXED QUESTION WITH PROVISION MERCHANTS.

At Luton Police-court, on December 19th, the World's Tea Company, George-street, Luton, were summoned for unlawfully selling margarine by retail and not delivering the same to the purchaser in a paper wrapper on which was printed in capital letters not less than a quarter of an inch square, "Margarine," on November 19th. There was a second summons for unlawfully offering for sale a quantity of margarine under a name other than margarine, i.e., under the name of "Kylos Creamery."

Mr. Beck said he was not going to dispute that when the sale actually took place the vendor told the purchaser that it was margarine, but they were not there under the Food and Drugs Act. Taking the second summons first, in which it was alleged that the defendants sold margarine, which they offered for sale under another name other than margarine, he asked them to refer to the third section of the Act. That section said, "the word margarine shall mean all substances, whether compound or otherwise prepared, and whether mixed with butter or not, and no such substance shall be lawfully sold except under the name of margarine, and under the conditions set forth in this Act." Therefore, Mr. Beck went on, any substance having the appearance of butter, but having any other substance in it must be sold under the name of margarine. Section 6 provided that all casks must be branded, that margarine, when exposed for sale, must be labelled with the word in letters an inch and a half long, and in addition to that it was to be delivered to customers in wrappers bearing the words in letters not less than a quarter of an inch square. Those were the provisions for storage and sale. The seventh Section went on: "Every person dealing with, selling, or exposing, or offering for sale any quantity of margarine, contrary to the provisions of this Act, shall be liable to the penalties of the Act." The defendants advertised broadcast by circular that a sample pound of "Kylos Creamery" would be given away with every two lbs. purchased. "Kylos Creamery" was offered at 8d. per lb., and was described as "equal in every way to dairy butter." That, he suggested, was the offering for sale of a substance described as "Kylos Creamery," but which he should prove to them was simply margarine and nothing else. Another circular issued by the firm read, "To be given away, 500 tons of the new delicious butter," in very big letters, and then in perhaps the smallest type the printer could find was "substitute," and again in large letters, "the renowned Kylos Creamery," which showed it was perfectly evident those people were trying to deceive the public, for had there been any other intention it would be perfectly honest to put the word "substitute" in as large type as the rest of that handbill. He should ask their worships to hold that that was offering for sale margarine under the name of "Kylos Creamery." Then came the other question, in the first summons, as to whether they had complied with the regulations of Section 6, as to the delivery of the margarine in a proper wrapper; which should bear the word margarine in letters a quarter of an inch square. Having offered the article for sale under the name and in the manner he had described, when the customer took away the parcel it was delivered to him in the wrapper he (Mr. Beck) now produced. He should ask them to say that that wrapper was not a wrapper which complied with the requirements of the Margarine Act. There was no doubt the intention of the Margarine Act was that the purchaser should have a distinct notice in that way that the substance in the wrapper was margarine, and the universal custom among traders was to have no word other than the word margarine, and if any person desired honestly to comply with the provisions of the Margarine Act, he was perfectly certain he would have nothing else upon that wrapper.

Mr. Davey pointed out that the word margarine appeared on the wrapper in the prescribed size. The Mayor said that the letters were a quarter of an inch square or a little more. Mr. Beck said that he did not dispute that the word margarine was fully in compliance with regard to the size of the letters, but he did say the intention of the Margarine Act was that the wrapper should bear no more words upon it other than margarine. Ninety-nine persons out of a hundred, who sold margarine in this country, he was proceeding, when Mr. Davey interrupted that Mr. Beck had no right to introduce into his speech what other people were accustomed to do in this or any other place.—The Mayor: I think Mr. Beck will leave it to me to understand the customs of the trade in that matter.—Mr. Beck: I am entitled to say what in my opinion was the intention of the Margarine Act, and I say the intention was that a clear notice should be given and that no other matter should appear on the label that should deceive the people who purchased. He then went on to say that when the substance was sold it was wrapped up in a paper on which the most prominent words were "Kylos Creamery," together with a trademark and other reading matter to attract the purchaser's attention from the statutory provisions of the Act. After having put the margarine into that wrapper they had put the package into another plain wrapper, and consequently did not permit the customer when he received his purchase to see what it contained, and in those two respects he said the defendants had offended against the statute. That prosecution was instituted not by the local authority, but by a number of eminent butter merchants in the city in the interests of honest traders who were loyally complying with the provisions of the Act, against this unfair competition, beyond which he added it was a serious thing that margarine should be palmed off on the

public in a manner intended to deceive them. He then called James Humphries, 36, Langley-street, a labourer, who said that on the day in question he went to the World's Tea Company establishment in George-street by instructions from Mr. Gardner. He took the circular produced, and asked for "half-a-pound of that," for which he paid 4d., and he was given half-a-pound of margarine, the manager informing him that it was margarine. He came out of the shop, and gave the parcel to Mr. Gardner.—By Mr. Davey: He quite understood that it was margarine he was buying, though he was not in the habit of buying margarine. William Gardner, insurance broker, Oxford-road, deposed to sending Humphries to purchase the creamery and receiving the parcel from him. He returned to the shop and spoke to the manager, drawing his attention to the manner in which it was wrapped up, the margarine being first wrapped in the "Kylos Creamery" wrapper and afterwards enclosed in a plain sheet of paper. On the package as he received it from Humphries, the wording of the "Kylos Creamery" wrapper was not visible, as the plain paper wrapper covered it. He told the manager he had purchased the butter for analysis by the public analyst, and said, "Where shall I divide it?" He afterwards divided it into three parts and left one part with him sealed up. He delivered another part to the public analyst, Mr. A. E. Ekins, at St. Albans, and received from him the certificate produced. Mr. Davey objected to the production of the certificate or any evidence relating to the analysis as being irrelevant. Mr. Beck said section 12 was quite clear on this point. The witness then went on to state that the analyst certified that the substance contained 90 per cent. of margarine.—By Mr. Davey: The witness did not send the man Humphries in to ask for a half-pound of butter, he sent him in consequence of instructions from a solicitor. Humphries, being further examined, said he did not ask for another wrapper to be put on nor did the assistant suggest it to him; nothing whatever was said about a second wrapper.—Re-examined by Mr. Beck: The witness did not see any printed matter on the wrapper until Mr. Gardner had gone into the shop and opened the package.—For the defence Mr. Davey called T. R. Clayton, who, on the date in question, was in the employ of the defendants. He remembered serving Humphries with half-a-pound of margarine, and he asked him if he would have it wrapped in another piece as his hands were not very clean, and he said "Yes."—By Mr. Beck: When Mr. Gardner came into the shop he told him he had wrapped it up in the second piece as the purchaser had asked him to. He told the manager that he had said that to Gardner. He had heard Humphries deny that he assented to have this wrapper, and he was lying. He knew he was going to be a witness when he came into court, but was not in court when the witnesses were ordered out. They never wrapped the margarine in a second wrapper unless asked to do it; Humphries did not ask him, he asked Humphries, but it was not his custom to ask persons if they wished it wrapped up in a second wrapper. Before he put it into the second wrapper he did not hand it over to Humphries. He also admitted that the firm had issued handbills similar to the one produced, referring to the "Kylos Creamery" substitute for butter.—Re-examined by Mr. Davey: He was carrying out instructions in wrapping the margarine in a second wrapper when the purchaser wished it. Mr. Davey, for the defence, argued that in the summons for selling margarine under a name other than margarine, there was absolutely no offence created by Section 7 of the Act, and that there was no offence under the Act as described by that summons in any shape or form. Section 6 gave regulations which must be conformed with, and these were the only regulations creating the only offences under the Statute. Mr. Beck had himself tried to create or manufacture under Section 7 an offence in addition to those indicted under Section 6. Section 7 was not intended for that, and could not possibly bear the construction Mr. Beck had put upon it; it was an imaginary offence in the mind of some person and not based upon any offence defined by the Statute. With regard to the advertisements his friend said a man had no right whatever to send out, he admitted that the circular at some date or another was issued from their premises, but said that the offer made on that circular was not held out as an inducement to purchase at the time the alleged offence was committed. He submitted there was no evidence in that case for a conviction, and with regard to the other case he pointed out that the wrapper contained the word margarine printed in letters slightly exceeding the size prescribed by the Statute. His friend seemed to think nothing else should be put upon that paper, but the Statute said nothing of the sort, and it would be ridiculous to suppose it said so. Mr. Davey dwelt at length upon this point, pleading that there was no word in the Statute prohibiting a grocer from putting his name or anything else he chose upon the wrapper. The Clerk said it seemed to him that the question for the Bench was whether in saying "Kylos Creamery" margarine was calling it margarine within the meaning of the Act.—The Mayor: That is what it hinges upon.—Mr. Davey argued at length that those words were descriptive adjectives, and reverting again to the summons of offering for sale, he said that whatever might have been the thought of the person who saw the advertisement the whole transaction took place in the shop, and the man could not be deceived, as he was told it was margarine. He asked them to dismiss both summonses. Mr. Beck, in reply, pointed to the third clause in Section 6, which said of margarine that "no such substance shall be sold under any other name," and in regard to the wrapper case, said Mr. Davey's defence was that they might put anything they pleased upon the wrapper so long as they put the word margarine upon it. It might even lead to an advertisement of this kind being printed upon the wrapper:

"Try our 1s. 4d. farm dairy butter; don't use margarine;" so long as the word margarine was in the prescribed size of letters. Would that be within the meaning of the Act as his friend suggested? They had got to look at it in a common-sense way and find out what the Legislature meant, and in his opinion it meant that the wrapper should bear the word margarine and nothing else, so that the purchaser should have a clear intimation that it contained margarine. The magistrates retired, and after consideration they decided in the case of the wrapper, that the circular paper in which the margarine was wrapped was not in compliance with the statutory requirements, and for that they imposed a fine of three guineas including costs. In the second case they were also of opinion that the circular was an offer for sale of margarine under another name, and they imposed a fine of three guineas including costs in this case. The Bench has made the fines light as these were the first offences, otherwise they thought these were two cases which would really call for heavier penalties. Mr. Davey asked to be allowed to state a case for appeal against the decision in the Queen's Bench Division, and this was granted.

THE SELECT COMMITTEE ON ADULTERATION. CONTINUATION OF MR. C. MIDDLETON'S EVIDENCE.

XXVII.

(Continued from page 416.)

YOU are satisfied that there is no such thing as a standard of water in Irish butter?—I have answered that question before in that way. I believe myself that it will soon be settled commercially. Do you think that the public taste ought to be allowed to settle these things for itself?—I think that that is scarcely for me to answer.—Was it you or Mr. Thomas who spoke about some instructions that were sent from Somerset House to Dublin Castle in this connection?—I think I spoke about that.—The letter was from the Chief Secretary, I think?—I will read you an extract from the reply.—What I want to know is what instructions were sent?—I have the letter here; I will read an extract from the letter. It is an extract from a letter sent to the Under-Secretary for Ireland in reply to inquiries respecting the adulteration of butter by the addition of water; it is dated March 23rd, 1893: "The conditions, however, of butter manufacture, are such that a reasonable limit for water in commercial butters may be indicated, taking also into consideration the results of numerous analyses of fairly-made samples. Such a limit might be found at 16 per cent., though in practice an excess over this figure, amounting to fractional parts of 1 per cent. would not necessarily become the subject of proceedings. I do not suggest 16 in the nature of a standard, as it is obvious that if it could be proved that any water had been added to a made butter, an offence may be held to have been committed, though the total amount did not reach 16 per cent. If in any case where the amount exceeded 16 per cent. it could be shown that the undue proportion of water arose from want of skill in the manipulation of the butter, and that there had been no intention to defraud, it would, in my opinion, be a question for the magistrates to consider whether the defence was a valid one or not."—Mr. Frye: Are you in favour of coffee and chicory being sold as a mixture so long as it is described as such?—Yes.—Would you be in favour of a mixture of butter and butterine being sold as a mixture?—But what is it to be called; because I think I have explained before there is rather a difference.—A butter mixture?—In the face of the present legislative enactments I think it would be better to leave the thing exactly as it is.—Is it not the fact that in the case of cocoa and starch, and sugar, the mixture is allowed to be sold as chocolate powder?—It is.—Do not you think it is a hardship upon the manufacturers of margarine and butter mixtures that they have to sell their product as margarine, and not as a mixture?—There is no doubt it is not logical, but at the same time it is the law.—Does it not strike you that there would be less incentive to adulteration if it were sold as a mixture?—I think at the present time, when you consider the conditions of the market, and everything connected with the sale and of the supply of margarine, it will be very desirable for you to go on the present system, and to have no changes of any kind.—In your evidence of last Wednesday you stated that the imports of margarine were increasing?—The last Wednesday but one I think it was.—Would you refer to your statistics and inform me what the imports were of margarine in weight and value in the year 1887?—In 1887 the importations of margarine in weight and value were 1,276,140 cwt., and the value was £3,890,327.—Now give me last years, 1893?—In 1893 1,300,033 cwt., and the value £3,656,224.—Does not that show that the imports of margarine remain stationary?—I think that is scarcely a fair way of putting it, and I will tell you why; because on the 1st of January, 1888, we have the Margarine Act, and it followed as a matter of course that in 1887 the importation would very likely be increased; and thereupon when I said that there had been an increase, I took those two together for the purpose of what I may call making a fair comparison. But the increase altogether is this: the margarine increase from 1888 to 1893 is 10·1 per cent., that is, taking the average for a number of years, 1·6 per cent. per year; and of butter in the same period, 1888 to 1893, there was an increase of 39·3 per cent., or an average of 6·5 per cent. per year.—And from 1887 butter has increased about 50 per cent?—Very nearly that.—Mr. Preston Thomas in his evidence

told the Committee that the separator skims the milk much more completely and takes the solids much more completely than by skimming. Is not this a mistake; does not the separator take out the fat and not solids?—It takes out the fat and not the solids; it takes out the fat and not the solids not fat. I daresay Mr. Preston Thomas meant that it diminished the amount of total solids in the milk.—In your analysis of condensed skimmed milk, do you not find a percentage of fats still left and all the other solids left?—Yes; there is always a small percentage of fat left.—Is not the process of manufacturing condensed skimmed milk the driving-off water and the addition only of sugar?—Yes.—Does not the addition of sugar to skimmed or separated milk replace to some extent the fat extracted, inasmuch as it supplies heat-producing qualities?—In the physiological effect, yes.—Is not condensed skimmed milk sold in tins bearing labels describing it as skimmed?—Yes.—Has it not been held that this was a proper and sufficient notice to the purchaser of the alteration in the article?—Yes; the prosecution, I think, was really on account of the quantity of fat that was shown to be in the separated milk; and I think the prosecution was that calling it skimmed milk did not properly designate this particular kind of milk, that it ought to have been called separated condensed milk. But when the case came before the higher courts they ruled that it was simple nonsense to make a distinction. It seemed to me a waste of money altogether to go on with such a prosecution.—Sir Mark Stewart: In regard to margarine, can you give the Committee any evidence as to its taste?—As it is without any admixture of butter, do you mean?—Yes, margarine pure?—It tastes very pleasant; it does not taste like a hard fat at all, because it had been worked up with butter.—Is there any resemblance to dripping?—No, not at all.—There is a question to which I should like to call your attention in the report of the Select Committee on Butter Substitutes for 1887, which Mr. Gurdon put to Sir Frederick Abel: "Is oleo-margarine by itself in an adulterated state perfectly wholesome?—Yes, if it is prepared from carefully selected and sweet fat.—And is it palatable to the taste?—It is not unpalatable; with salt it would be very similar to dripping without the flavour peculiar to the roast meat from which the dripping has been prepared." That is oleo-margarine?—But this margarine derives a flavour from being worked up with milk, so it gets a flavour in that way. It is altogether different from dripping. You have to be careful that it does not granulate like dripping, because if it does its commercial quality is impaired very greatly.—Has margarine undergone any difference in manufacture to make it more palatable do you suppose since 1887?—Yes, there has been great progress made since then.—You do not consider that it is any way injurious to health?—Not the slightest.—It is a perfectly wholesome commodity?—It is a perfectly wholesome commodity, so long as it is made from sound materials.—And you also stated fully that the colouring matter is in no way deleterious?—That is my opinion.—I want to ask you a question in regard to separated milk, and the answer which I think you gave. You were asked: "Can you give the Committee any information as to the nutritive value of separated milk?" and the answer you gave was: "The nutritive value of separated milk is high; what you want in connection with that is an addition of fat; and it is a capital thing for bone and tissue?"—Yes, because the fat that is taken away from the separated milk is really for the purpose of giving fat to the body; but when you come to what is left in it, that is for the purpose of building up the body in the way of bone and tissue.—That is practically not of much account to infants and young children?—Not to a young child; it would be to infants, because an infant could not get food from any other source; but to a young child you can give milk plus what it gets from something else.—So that separated milk would not be a bad diet for a young child?—No, and for another reason too; because the separated milk at the time of condensation is perfectly sweet, and skim milk is not; therefore it would be fit for children, while skim milk might not agree with them.—So that it might be really fit for children if other food were given in addition, to make up the total fat?—Yes.—You stated that the cheese which contained the greatest quantity of water was Cheshire cheese. Do you know how Cheddar cheese stands with regard to Cheshire cheese?—Cheddar cheese is lower; that is a tough curd, because the curd has been heated at the table. I can tell you in a moment. The Cheddar is 35·60, that is a little under the Cheshire, but very little.—Cheshire was 37?—37·11.—Cheddar cheese also contains the whole product of a cow, does it not?—Yes, it should.—Did you make any suggestion in regard to any popular kind of milk tester such as a farmer could make use of without knowing much about chemistry?—Yes; if the farmer would do two things, take the density of his milk and also take the quantity of the cream, that would assist him materially in seeing how he was getting on with his milk produce; but the misfortune is that they very often use a tester and they do not take off the quantity of fat; and it follows, as a matter of course, that if you get a milk that contains no fat, the specific quantity is higher than in a milk containing a large quantity of fat.—How would he test the milk after having taken off the cream?—What he would do would be this: he would have a little lactometer for the purpose of taking the specific gravity; he would then have some long tubes which should be kept at a certain temperature, marked at the top, giving the percentage of cream or fat.—After the cream is taken off?—No, the whole milk; all would be put in the tester and it would keep rising.—In regard to analysing milk, I suppose you naturally would not incline to that being taken up by the Board of Agriculture in

A VEXED QUESTION WITH PROVISION MERCHANTS.

AT Luton Police-court, on December 10th, the World's Tea Company, George-street, Luton, were summoned for unlawfully selling margarine by retail and not delivering the same to the purchaser in a paper wrapper on which was printed in capital letters not less than a quarter of an inch square, "Margarine," on November 19th. There was a second summons for unlawfully offering for sale a quantity of margarine under a name other than margarine, *i.e.*, under the name of "Kylos Creamery."

Mr. Beck said he was not going to dispute that when the sale actually took place the vendor told the purchaser that it was margarine, but they were not there under the Food and Drugs Act. Taking the second summons first, in which it was alleged that the defendants sold margarine, which they offered for sale under another name other than margarine, he asked them to refer to the third section of the Act. That section said, "the word margarine shall mean all substances, whether compound or otherwise prepared, and whether mixed with butter or not, and no such substance shall be lawfully sold except under the name of margarine, and under the conditions set forth in this Act." Therefore, Mr. Beck went on, any substance having the appearance of butter, but having any other substance in it must be sold under the name of margarine. Section 6 provided that all casks must be branded, that margarine, when exposed for sale, must be labelled with the word in letters an inch and a half long, and in addition to that it was to be delivered to customers in wrappers bearing the words in letters not less than a quarter of an inch square. Those were the provisions for storage and sale. The seventh Section went on: "Every person dealing with, selling, or exposing, or offering for sale any quantity of margarine, contrary to the provisions of this Act, shall be liable to the penalties of the Act." The defendants advertised broadcast by circular that a sample pound of "Kylos Creamery" would be given away with every two lbs. purchased. "Kylos Creamery" was offered at 8d. per lb., and was described as "equal in every way to dairy butter." That, he suggested, was the offering for sale of a substance described as "Kylos Creamery," but which he should prove to them was simply margarine and nothing else. Another circular issued by the firm read, "To be given away, 500 tons of the new delicious butter," in very big letters, and then in perhaps the smallest type the printer could find was "substitute," and again in large letters, "the renowned Kylos Creamery," which showed it was perfectly evident those people were trying to deceive the public, for had there been any other intention it would be perfectly honest to put the word "substitute" in as large type as the rest of that handbill. He should ask their worships to hold that that was offering for sale margarine under the name of "Kylos Creamery." Then came the other question, in the first summons, as to whether they had complied with the regulations of Section 6, as to the delivery of the margarine in a proper wrapper; which should bear the word margarine in letters a quarter of an inch square. Having offered the article for sale under the name and in the manner he had described, when the customer took away the parcel it was delivered to him in the wrapper he (Mr. Beck) now produced. He should ask them to say that that wrapper was not a wrapper which complied with the requirements of the Margarine Act. There was no doubt the intention of the Margarine Act was that the purchaser should have a distinct notice in that way that the substance in the wrapper was margarine, and the universal custom among traders was to have no word other than the word margarine, and if any person desired honestly to comply with the provisions of the Margarine Act, he was perfectly certain he would have nothing else upon that wrapper.

Mr. Davey pointed out that the word margarine appeared on the wrapper in the prescribed size. The Mayor said that the letters were a quarter of an inch square or a little more. Mr. Beck said that he did not dispute that the word margarine was fully in compliance with regard to the size of the letters, but he did say the intention of the Margarine Act was that the wrapper should bear no more words upon it other than margarine. Ninety-nine persons out of a hundred, who sold margarine in this country, he was proceeding, when Mr. Davey interrupted that Mr. Beck had no right to introduce into his speech what other people were accustomed to do in this or any other place.—The Mayor: I think Mr. Beck will leave it to me to understand the customs of the trade in that matter.—Mr. Beck: I am entitled to say what in my opinion was the intention of the Margarine Act, and I say the intention was that a clear notice should be given and that no other matter should appear on the label that should deceive the people who purchased. He then went on to say that when the substance was sold it was wrapped up in a paper on which the most prominent words were "Kylos Creamery," together with a trademark and other reading matter to attract the purchaser's attention from the statutory provisions of the Act. After having put the margarine into that wrapper they had put the package into another plain wrapper, and consequently did not permit the customer when he received his purchase to see what it contained, and in those two respects he said the defendants had offended against the statute. That prosecution was instituted not by the local authority, but by a number of eminent butter merchants in the city in the interests of honest traders who were loyally complying with the provisions of the Act, against this unfair competition, beyond which he added it was a serious thing that margarine should be palmed off on the

public in a manner intended to deceive them. He then called James Humphries, 36, Langley-street, a labourer, who said that on the day in question he went to the World's Tea Company establishment in George-street by instructions from Mr. Gardner. He took the circular produced, and asked for "half-a-pound of that," for which he paid 4d., and he was given half-a-pound of margarine, the manager informing him that it was margarine. He came out of the shop, and gave the parcel to Mr. Gardner.—By Mr. Davey: He quite understood that it was margarine he was buying, though he was not in the habit of buying margarine. William Gardner, insurance broker, Oxford-road, deposed to sending Humphries to purchase the creamery and receiving the parcel from him. He returned to the shop and spoke to the manager, drawing his attention to the manner in which it was wrapped up, the margarine being first wrapped in the "Kylos Creamery" wrapper and afterwards enclosed in a plain sheet of paper. On the package as he received it from Humphries, the wording of the "Kylos Creamery" wrapper was not visible, as the plain paper wrapper covered it. He told the manager he had purchased the butter for analysis by the public analyst, and said, "Where shall I divide it?" He afterwards divided it into three parts and left one part with him sealed up. He delivered another part to the public analyst, Mr. A. E. Ekins, at St. Albans, and received from him the certificate produced. Mr. Davey objected to the production of the certificate or any evidence relating to the analysis as being irrelevant. Mr. Beck said section 12 was quite clear on this point. The witness then went on to state that the analyst certified that the substance contained 90 per cent. of margarine.—By Mr. Davey: The witness did not send the man Humphries in to ask for a half-pound of butter, he sent him in consequence of instructions from a solicitor. Humphries, being further examined, said he did not ask for another wrapper to be put on nor did the assistant suggest it to him; nothing whatever was said about a second wrapper.—Re-examined by Mr. Beck: The witness did not see any printed matter on the wrapper until Mr. Gardner had gone into the shop and opened the package.—For the defence Mr. Davey called T. R. Clayton, who, on the date in question, was in the employ of the defendants. He remembered serving Humphries with half-a-pound of margarine, and he asked him if he would have it wrapped in another piece as his hands were not very clean, and he said "Yes."—By Mr. Beck: When Mr. Gardner came into the shop he told him he had wrapped it up in the second piece as the purchaser had asked him to. He told the manager that he had said that to Gardner. He had heard Humphries deny that he assented to have this wrapper, and he was lying. He knew he was going to be a witness when he came into court, but was not in court when the witnesses were ordered out. They never wrapped the margarine in a second wrapper unless asked to do it; Humphries did not ask him, he asked Humphries, but it was not his custom to ask persons if they wished it wrapped up in a second wrapper. Before he put it into the second wrapper he did not hand it over to Humphries. He also admitted that the firm had issued handbills similar to the one produced, referring to the "Kylos Creamery" substitute for butter.—Re-examined by Mr. Davey: He was carrying out instructions in wrapping the margarine in a second wrapper when the purchaser wished it. Mr. Davey, for the defence, argued that in the summons for selling margarine under a name other than margarine, there was absolutely no offence created by Section 7 of the Act, and that there was no offence under the Act as described by that summons in any shape or form. Section 6 gave regulations which must be conformed with, and these were the only regulations creating the only offences under the Statute. Mr. Beck had himself tried to create or manufacture under Section 7 an offence in addition to those indicted under Section 6. Section 7 was not intended for that, and could not possibly bear the construction Mr. Beck had put upon it; it was an imaginary offence in the mind of some person and not based upon any offence defined by the Statute. With regard to the advertisements his friend said a man had no right whatever to send out, he admitted that the circular at some date or another was issued from their premises, but said that the offer made on that circular was not held out as an inducement to purchase at the time the alleged offence was committed. He submitted there was no evidence in that case for a conviction, and with regard to the other case he pointed out that the wrapper contained the word margarine printed in letters slightly exceeding the size prescribed by the Statute. His friend seemed to think nothing else should be put upon that paper, but the Statute said nothing of the sort, and it would be ridiculous to suppose it said so. Mr. Davey dwelt at length upon this point, pleading that there was no word in the Statute prohibiting a grocer from putting his name or anything else he chose upon the wrapper. The Clerk said it seemed to him that the question for the Bench was whether in saying "Kylos Creamery" margarine was calling it margarine within the meaning of the Act.—The Mayor: That is what it hinges upon.—Mr. Davey argued at length that those words were descriptive adjectives, and reverting again to the summons of offering for sale, he said that whatever might have been the thought of the person who saw the advertisement the whole transaction took place in the shop, and the man could not be deceived, as he was told it was margarine. He asked them to dismiss both summonses. Mr. Beck, in reply, pointed to the third clause in Section 6, which said of margarine that "no such substance shall be sold under any other name," and in regard to the wrapper case, said Mr. Davey's defence was that they might put anything they pleased upon the wrapper so long as they put the word margarine upon it. It might even lead to an advertisement of this kind being printed upon the wrapper:

"Try our 1s. 4d. farm dairy butter; don't use margarine." so long as the word margarine was in the prescribed size of letters. Would that be within the meaning of the Act as his friend suggested? They had got to look at it in a common-sense way and find out what the Legislature meant, and in his opinion it meant that the wrapper should bear the word margarine and nothing else, so that the purchaser should have a clear intimation that it contained margarine. The magistrates retired, and after consideration they decided in the case of the wrapper, that the circular paper in which the margarine was wrapped was not in compliance with the statutory requirements, and for that they imposed a fine of three guineas including costs. In the second case they were also of opinion that the circular was an offer for sale of margarine under another name, and they imposed a fine of three guineas including costs in this case. The Bench has made the fines light as these were the first offences, otherwise they thought these were two cases which would really call for heavier penalties. Mr. Davey asked to be allowed to state a case for appeal against the decision in the Queen's Bench Division, and this was granted.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. C. MIDDLETON'S EVIDENCE.

XXVII.

(Continued from page 416.)

You are satisfied that there is no such thing as a standard of water in Irish butter?—I have answered that question before in that way. I believe myself that it will soon be settled commercially. Do you think that the public taste ought to be allowed to settle these things for itself?—I think that that is scarcely for me to answer.—Was it you or Mr. Thomas who spoke about some instructions that were sent from Somerset House to Dublin Castle in this connection?—I think I spoke about that.—The letter was from the Chief Secretary, I think?—I will read you an extract from the reply.—What I want to know is what instructions were sent?—I have the letter here; I will read an extract from the letter. It is an extract from a letter sent to the Under-Secretary for Ireland in reply to inquiries respecting the adulteration of butter by the addition of water; it is dated March 23rd, 1893: "The conditions, however, of butter manufacture, are such that a reasonable limit for water in commercial butters may be indicated, taking also into consideration the results of numerous analyses of fairly-made samples. Such a limit might be found at 16 per cent., though in practice an excess over this figure, amounting to fractional parts of 1 per cent. would not necessarily become the subject of proceedings. I do not suggest 16 in the nature of a standard, as it is obvious that if it could be proved that any water had been added to a made butter, an offence may be held to have been committed, though the total amount did not reach 16 per cent. If in any case where the amount exceeded 16 per cent. it could be shown that the undue proportion of water arose from want of skill in the manipulation of the butter, and that there had been no intention to defraud, it would, in my opinion, be a question for the magistrates to consider whether the defence was a valid one or not."—Mr. Frye: Are you in favour of coffee and chicory being sold as a mixture so long as it is described as such?—Yes.—Would you be in favour of a mixture of butter and butterine being sold as a mixture?—But what is it to be called; because I think I have explained before there is rather a difference.—A butter mixture?—In the face of the present legislative enactments I think it would be better to leave the thing exactly as it is.—Is it not the fact that in the case of cocoa and starch, and sugar, the mixture is allowed to be sold as chocolate powder?—It is.—Do not you think it is a hardship upon the manufacturers of margarine and butter mixtures that they have to sell their product as margarine, and not as a mixture?—There is no doubt it is not logical, but at the same time it is the law.—Does it not strike you that there would be less incentive to adulteration if it were sold as a mixture?—I think at the present time, when you consider the conditions of the market, and everything connected with the sale and of the supply of margarine, it will be very desirable for you to go on the present system, and to have no changes of any kind.—In your evidence of last Wednesday you stated that the imports of margarine were increasing?—The last Wednesday but one I think it was.—Would you refer to your statistics and inform me what the imports were of margarine in weight and value in the year 1887?—In 1887 the importations of margarine in weight and value were 1,276,140 cwts., and the value was £3,890,327.—Now give me last years, 1893?—In 1893 1,300,033 cwts., and the value £3,656,224.—Does not that show that the imports of margarine remain stationary?—I think that is scarcely a fair way of putting it, and I will tell you why; because on the 1st of January, 1888, we have the Margarine Act, and it followed as a matter of course that in 1887 the importation would very likely be increased; and thereupon when I said that there had been an increase, I took those two together for the purpose of what I may call making a fair comparison. But the increase altogether is this: the margarine increase from 1888 to 1893 is 10·1 per cent., that is, taking the average for a number of years, 1·6 per cent. per year; and of butter in the same period, 1888 to 1893, there was an increase of 39·3 per cent., or an average of 6·5 per cent. per year.—And from 1887 butter has increased about 50 per cent?—Very nearly that.—Mr. Preston Thomas in his evidence

told the Committee that the separator skims the milk much more completely and takes the solids much more completely than by skimming. Is not this a mistake; does not the separator take out the fat and not solids?—It takes out the fat and not the solids; it takes out the fat and not the solids not fat. I daresay Mr. Preston Thomas meant that it diminished the amount of total solids in the milk.—In your analysis of condensed skimmed milk, do you not find a percentage of fats still left and all the other solids left?—Yes; there is always a small percentage of fat left.—Is not the process of manufacturing condensed skimmed milk the driving-off water and the addition only of sugar?—Yes.—Does not the addition of sugar to skimmed or separated milk replace to some extent the fat extracted, inasmuch as it supplies heat-producing qualities?—In the physiological effect, yes.—Is not condensed skimmed milk sold in tins bearing labels describing it as skimmed?—Yes.—Has it not been held that this was a proper and sufficient notice to the purchaser of the alteration in the article?—Yes; the prosecution, I think, was really on account of the quantity of fat that was shown to be in the separated milk; and I think the prosecution was that calling it skimmed milk did not properly designate this particular kind of milk, that it ought to have been called separated condensed milk. But when the case came before the higher courts they ruled that it was simple nonsense to make a distinction. It seemed to me a waste of money altogether to go on with such a prosecution.—Sir Mark Stewart: In regard to margarine, can you give the Committee any evidence as to its taste?—As it is without any admixture of butter, do you mean?—Yes, margarine pure?—It tastes very pleasant; it does not taste like a hard fat at all, because it had been worked up with butter.—Is there any resemblance to dripping?—No, not at all.—There is a question to which I should like to call your attention in the report of the Select Committee on Butter Substitutes for 1887, which Mr. Gurdon put to Sir Frederick Abel: "Is oleo-margarine by itself in an adulterated state perfectly wholesome?—Yes, if it is prepared from carefully selected and sweet fat.—And is it palatable to the taste?—It is not unpalatable; with salt it would be very similar to dripping without the flavour peculiar to the roast meat from which the dripping has been prepared." That is oleo-margarine?—But this margarine derives a flavour from being worked up with milk, so it gets a flavour in that way. It is altogether different from dripping. You have to be careful that it does not granulate like dripping, because if it does its commercial quality is impaired very greatly.—Has margarine undergone any difference in manufacture to make it more palatable do you suppose since 1887?—Yes, there has been great progress made since then.—You do not consider that it is any way injurious to health?—Not the slightest.—It is a perfectly wholesome commodity?—It is a perfectly wholesome commodity, so long as it is made from sound materials.—And you also stated fully that the colouring matter is in no way deleterious?—That is my opinion.—I want to ask you a question in regard to separated milk, and the answer which I think you gave. You were asked: "Can you give the Committee any information as to the nutritive value of separated milk?" and the answer you gave was: "The nutritive value of separated milk is high; what you want in connection with that is an addition of fat; and it is a capital thing for bone and tissue?"—Yes, because the fat that is taken away from the separated milk is really for the purpose of giving fat to the body; but when you come to what is left in it, that is for the purpose of building up the body in the way of bone and tissue.—That is practically not of much account to infants and young children?—Not to a young child; it would be to infants, because an infant could not get food from any other source; but to a young child you can give milk plus what it gets from something else.—So that separated milk would not be a bad diet for a young child?—No, and for another reason too; because the separated milk at the time of condensation is perfectly sweet, and skim milk is not; therefore it would be fit for children, while skim milk might not agree with them.—So that it might be really fit for children if other food were given in addition, to make up the total fat?—Yes.—You stated that the cheese which contained the greatest quantity of water was Cheshire cheese. Do you know how Cheddar cheese stands with regard to Cheshire cheese?—Cheddar cheese is lower; that is a tough curd, because the curd has been heated at the table. I can tell you in a moment. The Cheddar is 35·60, that is a little under the Cheshire, but very little.—Cheshire was 37?—37·11.—Cheddar cheese also contains the whole product of a cow, does it not?—Yes, it should.—Did you make any suggestion in regard to any popular kind of milk tester such as a farmer could make use of without knowing much about chemistry?—Yes; if the farmer would do two things, take the density of his milk and also take the quantity of the cream, that would assist him materially in seeing how he was getting on with his milk produce; but the misfortune is that they very often use a tester and they do not take off the quantity of fat; and it follows, as a matter of course, that if you get a milk that contains no fat, the specific quantity is higher than in a milk containing a large quantity of fat.—How would he test the milk after having taken off the cream?—What he would do would be this: he would have a little lactometer for the purpose of taking the specific gravity; he would then have some long tubes which should be kept at a certain temperature, marked at the top, giving the percentage of cream or fat.—After the cream is taken off?—No, the whole milk; all would be put in the tester and it would keep rising.—In regard to analysing milk, I suppose you naturally would not incline to that being taken up by the Board of Agriculture in

respect that it is an agricultural commodity rather than that it should remain at Somerset House?—It is rather curious, but we are connected with the Board of Agriculture as well as with the Local Government Board.—Mr. Channing: Both as regards these Acts and as regards the Fertilizers Acts?—Yes.—Sir Mark Stewart: Would you recommend more inspectors being employed, or more inspections taking place?—My opinion is that if you take your present Act and work it out in detail, that is enough.—Do you mean the present Margarine Act?—The present Sale of Food and Drugs Act. If you take that and work it out in detail, and compel local bodies to have their analysts and inspectors, and have the Act carried out rigidly, there would be very little difficulty in getting pure food to the consumer.—You rather imply a censure on the local bodies for not attending to that?—It is practically impossible for you to do much good in that direction, because if you get one end of London, where they are very diligent in carrying out the regulations of the Sale of Food and Drugs Act, and in the next parish they do nothing, it follows as a matter of course that adulteration must go on.—In regard to a systematic method of analysing, what do you say upon that point?—Do you mean of milk?—Milk and margarine and dairy products?—I think that, so far as systematic examination of milk is concerned, we have got almost to that point at the present time. There is very little variation in the examination of milk samples, I think.—My impression was that if you sent to different chemists very often they arrived at very likely the same conclusion, or practically the same conclusion, only by different methods; whilst some, on the other hand, arrived at different conclusions, and in consequence did not give satisfaction to those who consigned samples to them?—There is no doubt that there have been great difficulties in the way of milk analysis; but at the same time, when we get competent chemists examining a sample of milk, even although they examine the sample by the coil process, or whether they examine the sample by the maceration process, the differences between the two will not be so great as the differences are very frequently between two different operators. Thus, for instance, I give you a case in point. I have some figures before me where there were nine public analysts and Dr. Veith; they examined two kinds of milk, one containing a large quantity of fat and another containing a small quantity of fat. These milks were sent from one particular source, and the samples of milk were examined at the same time and under the same conditions. When we came to look at the total solids, we found between the ten different operators the following differences: The highest 15·07, and the lowest 14·76, that is a difference of 31·100ths per cent.; in the fat, the highest was 6·71, and the lowest 6·20, giving a difference of 51·100ths per cent.; in solids not fat the highest was 8·62 and the lowest 8·08, giving a difference of 54·100ths per cent. In the poor milk, of the total solids the highest was 9·87, and the lowest 9·43, giving a difference of 44·100ths per cent.; in the fat the highest was 83, and the lowest 29 giving a difference of 54·100ths; in the solids not fat the highest was 8·15, and the lowest 8·14, giving a difference of 61·100ths. Now, expressed in percentage of adulteration, the difference in the rich milk in the solids not fat would be equivalent to 54·100ths of one per cent., or 6 per cent. of water in the fat the difference would be 51·100ths, or an abstraction of 16 per cent. of fat. In the poor milk in the solids not fat there would be 9·5 per cent. of water (if we take a three per cent.), and of fat 54·100ths, or 18 per cent. abstraction of fat. Now those experiments were made as carefully as they could be made, and we can easily see that the difference is very great; so when we come to look at ordinary analysts at the present time we shall find that the ordinary analysts will come far below those limits.—When was that taken?—In 1885.—And science has progressed since 1885?—Yes.—Mr. Channing: Have you Dr. Veith's separate from the rest; you mentioned his name separately?—If you will allow me I will put this table in altogether; because in the first part it is an extract from an adjourned discussion on the report of the milk committee in the *Analyst* for 1886, Vol. XI., pp. 62 and 63; and then on the same page you have another examination of milks, and you will see there about what the differences are. If you would like to have that paper I will hand it in. (*The Witness delivered in the same*).—Just one more question: in your experience is there much inferior margarine sold?—I am not able to speak of that, because the inferior margarine is sold in low districts, and I am not acquainted with that.—It does not come under your observation at Somerset House?—I see a large quantity of margarine, but it is of better quality.—Is that generally imported from abroad, or manufactured in this country?—From abroad.—What is the casein in the milk?—That is the curd.—What are the ingredients composing it?—I scarcely understand what you mean.—My point refers to cheese-making, and I rather wanted to ask you what is the principal matter in cheese-making?—That is the nitrogenous matter that gives the tissue.—What is the principal matter in the milk that produces cheese?—I think, from a cheese manufacturer's point of view, he likes a milk that contains not too much fat, because it is rather difficult to work if it does, and he also likes a milk that does not easily throw up fat; that is to say, that the fat globules shall not be very large.—Where does the casein come in there; in the ingredient of milk?—It comes in the curd.—Which is the most useful part for cheese-making?—Yes.—But not for butter-making?—If you have casein in butter it follows, as a matter of course, that it will soon begin to decay.—Mr. Colston: I suppose that is why sometimes the very best cheese is made off inferior lands?—Exactly; it keeps better; it matures better.—Sir Mark Stewart:

—Is there anything else that you wish to say?—There is one matter that I wish to bring before the Committee, if you will allow me. A fortnight ago I told the Committee that I had written to France for information about milk limits or standards in Paris. I have that information here, if you can give me time to detail it.—Mr. Frye: Is there not more information to be obtained?—Yes.—Had we better take it all together?—If the Committee will allow me I will hand it in; because it is most valuable information.—Sir Mark Stewart: I think you undertook to bring it to an honourable member of the Committee?—I undertook to bring it to the Committee itself.—Mr. Channing: Could you put upon the notes of evidence the essential point of what the standard is?—If you will allow me to do so, I will prepare a paper that can be handed in. Then there is another matter. On Wednesday last I was asked two or three questions, one of which was about the Merthyr Tydvil vinegar case and another about the Derby case. I think Mr. Kearley asked me about the Derby case; and I have the information for Mr. Colman to-day about the Merthyr Tydvil case.—Mr. Colman: Will you read it now or will you hand it in?—If it is agreeable to you I will prepare a paper and hand it in in the same way.—Have you any opinion as to whether in future legislation it would be well to separate food from drugs?—I think there is no difficulty at the present time in working them together.—There is a standard of purity for drugs necessarily; there may not be for food; but I ask the question; you do not think that there is any need for separating them?—I think there is not the slightest difficulty in working them together now.—Do you know anything about the Act of 1872?—Yes, I know about the Act of 1872.—The reason of the alteration recommended by the Committee that sat afterwards, I think, was because there was a good deal of complaint as to the way in which the Act of 1872 affected traders?—There is no doubt that at that time, in the two years between 1872 and 1874, the analytical knowledge of the composition of foods and drinks was small, and there is no doubt also that prosecutions were instituted which were very tyrannical, especially as to the facing of tea, which so incensed the different merchants that there was such a commotion that at last they were compelled to have a Committee of Inquiry of 1874; and out of that Committee of Inquiry of 1874 we had the Sale of Food and Drugs Act, 1875, under which Act we first had reference.—Somerset House really, practically, became the referee out of the Committee of 1874?—Exactly.—You told the Committee some time ago that you had 23 samples of lard referred to Somerset House; do you know at all in how many instances you disagreed with the certificates sent up with the report?—I can tell you in a moment. In the case of lard we had 12 agreements and 10 disagreements, and one sample was sent up not for a case of prosecution.—In those disagreements there was some particular point of disagreement common to the whole of the samples?—The disagreement generally was as to the presence or absence of beef stearine in the lard.—Is there much difficulty in distinguishing beef stearine in lard?—There is considerable difficulty in distinguishing beef stearine.—In your opinion is the use of a moderate quantity of beef stearine, say 10 per cent., for the purpose of stiffening lard, an adulteration?—At home in the summer we always used to put a small quantity of mutton suet into the lard to keep it hard, and make it convenient to work for domestic purposes. But there is another point in connection with the addition of stearine to lard, which has to be considered. There is no doubt that some time ago a large quantity of lard that came from America, not only contained beef stearine on the one hand to harden it, but contained cotton-seed oil on the other hand as an adulteration; and a very large quantity of that adulterated lard came into this country with the addition of cotton-seed oil. Now I very seldom meet with that at all. At Chicago they have taken the matter up very strongly, and that is now under the control of the Board of Trade. At the present time the chief disagreement as to the adulteration of lard is on the assumption that beef stearine is present in the samples. In many cases that we have had we were not able to confirm the conclusions of the analyst in that particular.—In other words, in some of the cases beef stearine was in, and you did not consider it an adulterant?—No, in some cases we did not find beef stearine in the samples; they were sent up as adulterated with beef stearine and we could not find beef stearine present in those samples.—Mr. Channing: Just one or two questions on this particular point. You speak of the referees disagreeing with the analyst, but they may be said, may they not, to agree with the analyst, even where they find a minimum proportion of water in milk which is lower than what the public analyst has certified?—That would be an agreement.—Where they specified a lower amount?—Yes; the disagreement would be as to the percentage, but there would be a distinct agreement that added water was present.—You would describe that as an agreement?—Yes.—Are you aware that a case was recently dismissed owing to the magistrate noticing the difference between the percentage of water certified by the public analyst and that named as probably present by the referees, that therefore the prosecution was dismissed?—That might be so, but I should like to know all the particulars of the case. If the magistrate did dismiss the case I think it would be rather a high proceeding for him to take.—It is my information that such a case was dismissed. Would that make it desirable, in your opinion, that the statement of the percentage by the referee should be more precise?—We are as precise as we can be in the examination of the sample.

(To be continued.)

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Food and Sanitation.

SATURDAY, JANUARY 12TH, 1895.

THE SALE OF COCOA.

THE Westminster Vestry prosecuted three grocers at the local police-court on January 1st. John Fielder, grocer and provision dealer, of 50, Romney-street, first appeared to a summons for selling a quantity of cocoa to Thomas Young, the agent of John Wright Kirk, which was not of the nature, substance, and quality demanded. Mr. Warrington Rogers, solicitor, appeared for the Vestry. Thomas Young deposed that he lived at 7, Regency-street, Westminster. On November 23rd he was instructed by

Mr. Kirk, one of the inspectors appointed under the Sale of Food and Drugs Act, to obtain a quarter of a pound of cocoa from the defendant, and, on being served, he was asked for twopence. The inspector, who was waiting outside, then stepped in, took the cocoa, and stated that it had been purchased for the purpose of analysis. John Wright Kirk deposed that he was the inspector alluded to. After the purchase had been completed he divided the cocoa into three parts, one of which he left with the defendant. The analyst had since certified that the cocoa was adulterated to the extent of 68 per cent., 32 being starch and 36 sugar. Defendant said he had suddenly fallen into error. When the young man entered the shop and asked for the cocoa he gave him the soluble preparation instead of the real cocoa.—Mr. de Rutzen: What is soluble cocoa?—Mr. Rogers: A preparation, Sir.—Defendant: I keep papers which say it isn't sold as pure cocoa, and on this occasion I foolishly omitted to use one.—Inspector Kirk: There was no mark on the paper that I received.—Defendant: No, I only say that is what I should have given you.—Mr. de Rutzen: What is cocoa a pound?—Inspector Kirk: Well, you can get it at 10d.—Defendant: Nonsense. You can't get it in the market under 1s. 4d.—Mr. de Rutzen: Has there been any complaint before?—Inspector Kirk: No, sir.—Mr. de Rutzen: It is quite clear that you did not give him cocoa. It was 68 per cent. of something else. You sold this prepared stuff as cocoa, knowing full well that you could have protected yourself by using the papers. You're fined 40s., with 12s. 6d. costs.—Cecilia Appleby, grocer, of 13, Romney-street, Westminster, was summoned for selling cocoa adulterated to the extent of 64 per cent. Thomas Young stated that on November 23rd he entered the defendant's shop and asked to be served with a quarter of a pound of cocoa. He paid 2d. for it, and when the transaction was completed the inspector took possession of the article, and stated in the usual way that it would be analysed according to the provisions of the Sale of Food and Drugs Act. Kirk, the inspector, confirmed the evidence of the first witness. He forwarded a portion of the compound in the usual way to the analyst, and subsequently received a certificate which showed that the preparation contained 22 per cent. of starch and 42 per cent. of sugar.—Mr. de Rutzen: Do you wish to ask him anything?—Defendant: No. I only wish to say that the affair came about by a pure mistake. My daughter, who generally attends to domestic matters, was in the shop when the inspector's assistant entered. She served him, and did not take the proper precaution of telling him that at 8d. we sold a mixture. I have been unfortunate with this cocoa all along. I ordered it from the manufacturers, intending to be supplied with the packets, and then received it in bulk.—Mr. de Rutzen: You don't wish to call a witness?—Defendant: No.—Mr. de Rutzen: Well, whatever the mistake may have been, the upshot is that the inspector did not receive what he wanted. What kind of shop is this, inspector?—Kirk: A large shop, sir.—Mr. de Rutzen: Fined 40s. and 12s. 6d., costs. The public must be protected against fraud of this kind.—The third and last summons was against Mr. M. Brooman, of 2, Carey-street, Westminster, who had been summoned for selling cocoa containing 21 per cent. of added starch and 27 per cent. of added sugar. Young again said that he purchased a quarter of a pound of cocoa, for which he paid 2d., on November 23rd. Inspector Kirk deposed that he waited outside the shop, and suddenly appeared when the bargain had been made. He told the defendant who he was, and added that the cocoa was intended for analysis. Defendant then said "Oh, it's quite a mistake. I intended to put the cocoa in a wrapper, and did not do so."—Defendant: When your man came into my shop I was very busy, was I not?—Inspector Kirk: Yes.—Mr. de Rutzen: Do you wish to ask him any other questions?—Defendant: No. When he came in and took the cocoa I told him that it was good value for money, and that I had obtained it from a large and respectable firm. I sold it just as I got it, and I say again that I have done nothing dishonest.—Mr. de Rutzen: I question that. If anyone goes into a shop and asks for cocoa he does not expect to receive a mixture instead. It is not such a bad case as the others, however, so the fine will only be 20s. and costs. Defendant protested that it was ridiculous to fine people for selling an adulterated article at half the price of the pure article. How could anyone sell at eightpence what cost double the money?—Mr. de Rutzen: That is my decision.

MONTGOMERY COUNTY COUNCIL AND FOOD AND DRUGS ADULTERATION.

THE Clerk of this Council received a communication from the Leicestershire County Council asking for its support to the following resolutions—(1) "That the Council approves of the action of the Local Government Board with regard to the inquiry before the Parliamentary Committee respecting the Adulteration of Food and Drugs Act, Dairy Produce, and Drugs, and the working of the Food and Drugs Act, and the Margarine Acts, and expresses a hope that the recommendation of the Board's inspector, Mr. Preston Thomas, made to the said Committee will be embodied in a Bill, and introduced into Parliament. (2) That, in the opinion of the Council, all vessels containing skimmed milk should be labelled as such in letters an inch long, that a standard for water in butter be fixed, and that margarine should either be sold in a separate shape or coloured differently from butter." A draft was also submitted of the procedure of the Leicester County Council, with a view to secure to agriculturists in the county the advantages conferred by the Fertilizers and Feeding Stuffs Act of last year. The decisions of the Councils empowered the Chief Constable, the superintendents, and inspectors in charge of petty-sessional divisions to take samples on behalf of the buyers, the cost being included in the charge fixed to be paid to the county analyst for analysing on behalf of the buyers. It was decided to adopt the resolutions of the Leicestershire County Council, also its procedure in the matter of the Fertilizers and Feeding Stuffs Act, but the latter was referred to the Technical Instruction Committee for such alteration as local circumstances may require.

A QUEER DECISION.

AT Spalding Petty Sessions, Jacob Balham, of Swan-street, Spalding, milkman, was summoned by Superintendent Osborn, under the Adulteration Act, for selling a pint of milk adulterated with not less than 5 per cent. of water, on November 17th. Mr. Stiles appeared for the defendant, the charge being denied. Inspector Swaby and Superintendent Osborn spoke to purchasing the milk, and it being forwarded for analysis; and the certificate of the analyst (Mr. C. H. Southwell, of Boston) was put in, in which the adulteration was put at not less than 5 per cent., taking the lowest standard of pure milk. Mr. Stiles objected to the certificate of the analyst as being indefinite, but the Bench held that the case must go on. Mr. Stiles, for the defence, quoted several scientific works to show that the milk of cows varied, and was liable to depreciate in quality. He called the defendant to prove that the cows were brought from an eddish on November 12th, and upon being put into a shed, were fed upon a newly-cut haystack, the top of which had been much exposed to the weather and had lost much of its goodness. He stated that the milk from the cows had fallen off in quantity and quality, and the condition of the cows had also depreciated. He denied that any water had been added to the milk; and Mrs. Belsham and a son of the defendant were also called and corroborated this statement. Mr. Stiles reminded the Bench that in May, 1893, two similar cases were brought before them from Long Sutton, wherein the alleged adulteration was 5 and 6 per cent. respectively. Upon the facts, the Bench dismissed the case, and he asked them to take a similar course in the present instance. After conferring together, the Chairman announced that the Bench were unanimous in dismissing the case.

DISEASED MEAT AT SOUTH SHIELDS.

AT the South Shields Police-court, on the 19th ulto, James McKenzie was summoned for depositing for sale diseased meat. The Town Clerk prosecuted and Mr. C. W. Newlands defended. Mr. Pollock, meat inspector, stated that he visited the defendant's slaughter-house in Saltwell-lane, and saw, deposited for sale, fifty-four small pieces of meat, five forequarters, four and a half livers, two rumps and sirloins, one sirloin and three heads. On one of the livers he found an abscess containing at least a gill of matter; all the livers were more or less affected the same. The forequarters were stripped, the meat was soft, flabby, and emaciated, and all was affected with tuberculosis, and in his opinion was unfit for human food. It was afterwards examined by the medical officer of health, and a magistrate, who made an order for its destruction. Dr. Turnbull (medical officer of health) also gave evidence, describing minutely the condition of the meat which he considered diseased and unfit for the food of man. Mr. Newlands contended that it had not been shown that the meat, was intended for sale, that there had not been any deliberate offence, and that the defendant did not have any actual knowledge of the disease. The magistrates considered their decision in private and fined the defendant £5 and costs. The Mayor said the public must be defended against the sale of diseased meat.

At South Shields, on December 28th, Wm. Davidson was charged with preparing and exposing for sale a quantity of unsound beef. Mr. J. Moore Hayton, town clerk, prosecuted, and Mr. C. W. Newlands defended. Mr. Hayton said the defendant was a butcher in South Shields, and had a stall in the Market-place and a slaughter-house in Coronation-street. On the 14th inst., Mr. Pollock, the meat inspector, visited the latter-named premises and found four

carcasses of beef. Two of these were cut up and quartered, and he examined one of the quarters and found it was affected with tuberculosis. He asked for the lungs of the beast, and the boy in charge handed them to him, and he found indications of the same disease. Mr. Pollock gave evidence in support of this statement. He said that the medical officer also saw the beef, which was afterwards destroyed on a magistrate's order. By Mr. Newlands: The meat was unfit for food, but he had seen worse. Dr. Turnbull corroborated as to the condition of the beef, and described it as quite unfit for food. Cross-examined: There had apparently been no attempt to wilfully hide the diseased portions of the beef. Mr. Newlands, for the defence, said that his client had had his doubts about certain portions of the meat when it was quartered, and he gave instructions to his men not to touch it until the inspector saw it. It would have been destroyed immediately but they were not aware that its condition was so bad. Evidence was called to this effect. Mr. Pollock, recalled by Mr. Newlands, said that up to a certain point this disease did not render the beef unfit for food. A fine of £5 and costs was imposed.

RAILWAY REFRESHMENT-ROOM MILK.

AT Southampton, on December 27th, Albert R. Pettitt, contractor to the London and South-Western Railway, was summoned under the Food and Drugs Act for having, on December 18th, at Eastleigh, sold new milk not of the nature, substance, and quality demanded, namely, from which cream had been extracted to the prejudice of the purchaser. Mr. J. P. Grain, barrister-at-law, instructed by Messrs. H. J. and T. Child, solicitors, Doctors' Commons, appeared for the defence, and at the outset said this was an important case to the defendant, and he must take advantage of every technicality. He raised the preliminary objection that the provisions of what was called Jarvis's Act had been broken by two clear and distinct offences having been joined in one summons, and therefore the summons should be dismissed as being bad. The complainant might have issued two summonses, one for selling milk not of the nature, substance, and quality demanded, and the other for selling milk from which cream had been extracted. There had been an endeavour to have two strings to the bow, which was contrary to the law, and as this might be a test case he was obliged to take advantage of every technicality. The Chairman said it was an important point, the Bench were not inclined to accede to the application, and they would proceed under section 6. Mr. Grain asked for a note to be taken of his objection, and this was done. P.-a. Jacobs, stationed at Shirley, said he was an inspector under the Food and Drugs Act, and about noon on December 8th he visited the refreshment-room on the up platform of the Eastleigh railway station, and asked for a pint of new milk, with which he was supplied by a barmaid, and he paid 6d. for it. He informed her that he had purchased the milk with the intention of having it analysed, and offered to divide it into three parts, which was accepted. He divided the milk and left one portion, the other being directed to the public analyst, handing it to him the same day, and the third he kept and produced. The witness was about to put in the analyst's certificate, when Mr. Grain raised the objection that notice had been given requiring the analyst to give evidence, and Superintendent Matthews said he would call the public analyst. Arthur Angell deposed that he was county analyst, and the certificate as to his analysis was before him. The result of it was: solids, minus fat, 9.33 per cent.; butter fat, 2.13; ash, or mineral matter, .74. No change had taken place with the condition to interfere with the analysis. He said as a fact that cream had been extracted. It was not new milk, but milk minus something. In cross-examination witness said that the Society of Public Analysts, of which he was a member, had suggested that the limits of 9 per cent. for non-fatty solids and 2.5 for fatty should be adopted. Large quantities of milk had been collected by the Local Government Board years ago, and the mean result was about the figures suggested by the Society. Mr. Bannister, the second in command at Somerset House, had fixed the amount for fat at 2.75. The quality of fatty matter in milk depended on the breed of the cow, its health, and the nature of its pasture. A portion of the cream would adhere to the vessel if allowed to stand when milk was drawn from the bottom of the churn, as he understood was the case here. The lowest percentage of fat he had found in new milk was not far below 2.5, certainly not below 2.4. Public analysts did not vary like doctors in their opinion, but they were getting to be a happy family with regard to their standard. Mr. Grain asked the Bench, in order to have an absolutely independent opinion, to cause the third sample to be sent to be analysed at Somerset House, stating that the one left with the defendant had been analysed by a gentleman of considerable eminence, and it varied most materially from that of the last witness. The defendant and those he represented had a warranty from a farmer in the neighbourhood, and it was sold as it came in, and it was a most important matter to them. The Bench acceded to the request, as it was an important case, but expressed their confidence in the ability of the county analyst. Mr. Grain said he did not wish to dispute that, but analysts differed in opinion. The Chairman said it was an important matter to him personally, and he should be interested to see how the figures came out, as he had many a glass of milk at the same bar. The summons was adjourned for a fortnight, to enable the analysis to be made at Somerset House.

KEIGHLEY MAGISTRATES IMPROVE.

AT the Keighley Police-court, on January 4th, Cornelius Dixon, grocer, High-street, Keighley, was summoned for exposing margarine for sale without a proper label being affixed. Mr. Randerson gave evidence, and said that Mr. Dixon told him that the article was margarine. As he was leaving the shop the defendant, referring to the margarine, said, "It has come from that lump there; I could not help it; I can't deny it that it was exposed for sale." The Bench said it was clear that there had been, at any rate, gross carelessness on the part of the defendant. He would be fined £5 and costs.

THE WARRANTY GAME.

AT Brentford Petty Sessions, on December 29th, Chief-Inspector Tyler, of the Middlesex County Council, prosecuted in two important adulteration cases. Messrs. Pentelow, grocers, of Hounslow, were fined £3 and costs for selling butter containing twenty-five per cent. of foreign fat. The defence was that the words "pure butter" burnt on the box in which the butter was sent to defendants was a warranty, thus relieving the retailer from all responsibility. The Bench decided to the contrary, and refused to grant a case.—The Metropolitan and Suburban Supply Association, Limited, were summoned for selling milk 10 per cent. deficient in butter fat. In reply to Inspector Tyler, William Bass, a Brentford milkman, said he had done business with the Supply people for years. "You have cows of your own?" said Mr. Tyler.—"Yes, sir."—"Do you ever mix your own milk with the Supply people's?"—"No, sir."—"Why?"—"Because I would not depend on it." Defendants, however, proved that they were supplied by a Bath dairy farmer named Bull, on whose warranty they relied. The Bench in the end decided in favour of the defendants.

MARGARINE AGAIN.

"MY acquaintance, Commissioner Van Valkenburgh, who afforded me so much information with regard to the adulteration of milk and butter in New York State, has recently mentioned some facts which are worthy of notice. He says that during the past year his officers have found, in a number of samples of margarine, from 5 to 11 per cent. of paraffin wax. In his office there are sworn statements by Professors Waller and Love, and the chemists to the New York Produce Exchange and the New York Mercantile Exchange—all men of the highest standing—to this effect:—They have found in samples delivered to them by this Department of Agriculture paraffin varying from 5 to 11·25 per cent. Each chemist received a different sample, and each found in some cases higher, in some cases lower amounts. So far it has not been determined who is the manufacturer of the material in which the adulteration was present, inasmuch as the stamps indicating such details had been obliterated, thus preventing the detection of the fact that the purchaser of butter had been furnished with margarine. Paraffin can be dissolved by no known acid or alkali, hence the deduction that it is dangerous as an article of food. Mr. Van Valkenburgh says, what he has often remarked before, that he has yet to learn of a single citizen of the State of New York who has or who will knowingly consume margarine as an article of food; and he asserts that it has no sale, unless it be to the grocer, who sells it to the consumer as and for butter, or the hotel, restaurant, or boarding-house keeper, who supplies it to his customers as butter. I hope this fact will be brought to the notice of the commission, which has not completed its labours; and I am sorry it was not in my power to have mentioned it in giving my own evidence."—JAMES LONG, in the *Farmer's Gazette*.

TYPHOID IN THE OYSTER.

DR. C. J. FOOTE, the Yale demonstrator in bacteriology, to whom was assigned by the State Board of Health, after the outbreak of typhoid at Wesleyan University, the investigation of the life of typhoid germs in the oyster, has conducted the experiments along two lines. In the one case he bored a hole through the shell of a living oyster and inserted the germs; in the other case he placed the germs with the opened oyster. In both cases the germs were found alive after a number of days. The State Board of Health, therefore, has concluded that the germ lives in the oyster long enough at least to have caused the disease in the Wesleyan University victims. Dr. Foote is now investigating the power of the germ to propagate itself in the oyster.

In one case at Wesleyan it was found that a typhoid patient had not eaten the raw oysters at the initiation suppers. Investigation of this instance, however, has shown that the patient had eaten raw oysters at the establishment where those had been sold for the suppers and at about the same time.

In the case of the private entertainment in this city which preceded certain typhoid outbreaks, the State Board of Health has found that of twenty-one persons present, six took the disease. The investigation left only the raw oysters under suspicion. Through the caterer the oysters were traced to the seller, who declares that he bought them at New York from an oyster boat which he cannot identify. The oysters were alleged to be "blue points," but that term is very generally used here for all small oysters from local beds, and sold to be served raw.

In consequence of the disclosures, it is estimated that since they were made, some three weeks ago, oyster sales in this city and neighbourhood have already fallen off to the amount of more than 100,000dols. The disclosures came at a time of the year when sales are usually large.

**HARRIS v. LONDON COUNTY COUNCIL.
IMPORTANT CASE.**

THE appellant, who resided near Stoke-on-Trent, supplied milk under a contract to a dairyman in London. This was despatched in churns or cans and so delivered to the railway company. Each can was supposed to contain about 16 gallons of milk, but as the railway company charges by measure in these cases, a gauge was fixed inside each can so as to show the number of gallons which it contained. It appears to have been the custom of the appellant to affix a ticket to one of the cans stating the total number of gallons sent. In April last four cans were despatched, containing in all 66 gallons. These were inspected by an official of the County Council, who found that the cans contained two pints less than 66 gallons. The same thing happening upon a subsequent occasion, the County Council instructed their officials to commence proceedings, and a summons was taken out under section 27 of the Weights and Measures Act of 1878. At the trial it was proved in evidence that the cans were filled by means of a gallon measure, but the magistrates convicted on the ground that the cans in question were "measures" within the meaning of the Act, and that they were not merely receptacles for the carriage of the milk, the gauge being placed inside to enable the railway company to fix the charge for carriage. The case came before the Divisional Court by way of appeal, and the appellant contended that the cans were not measures, but merely for the purpose of sending the milk by train, and that, therefore, the conviction was wrong. It was also pointed out that cans such as these were frequently much knocked about, and that they suffered considerable damage, that they became indented, and consequently could not be taken as accurate measure. It was also contended that the gauge was only intended to approximately ascertain the number of gallons for the purpose of paying the carriage, and of acting as a guide to the dairyman in London. It was also pointed out that the milk was measured carefully into the cans, and that the gauge was not relied upon. The Court, however, came to the conclusion that the conviction was right, and therefore dismissed the appeal. The cans, said the judges, were in the appellant's possession "for use for trade" within the meaning of the Act, that they were used as measures by the railway company and also by the purchaser, and that as they were found to be "false or unjust" the fine was rightly inflicted.

THE ADULTERATION OF GINGER.

BEFORE the Pottories Stipendiary (Mr. Harold Wright), at Hanley, on December 31st, Edwin Crabtree, manager of the People's Tea Company's establishment in St. John's-square, Burslem, and Thomas Henry Pennington, Clarendon-place, Hyde, Manchester, the proprietor of the business, were summoned under the Food and Drugs Act for selling lump ginger from which a portion of its pungent and aromatic properties had been abstracted, so as to injuriously affect its quality, without making disclosure of such adulteration to the purchaser. Mr. E. W. H. Knight (inspector under the Act) prosecuted, and Mr. F. S. Leak, Manchester, appeared for the defence. It was stated that on November 10th two samples of root ginger were purchased from the defendant Crabtree, 3d. being the price of one and 2d. the other. These were submitted to the county analyst, who certified that the cheaper ginger was genuine, while the higher-priced sample had been exhausted by a solvent whereby its aromatic and pungent qualities had been abstracted, so that it was almost tasteless. Mr. E. T. W. Jones, county analyst, gave evidence in support of his certificate, and, in reply to Mr. Leak, said he had never heard of a prosecution for adulteration of lump or root ginger before. He could not say that the two samples of ginger were of the same growth. He gave details of his analysis, and said that the essential oil was just one half of the very lowest quantity which should be found in genuine ginger. He did not think this could happen naturally. The amount of potash should have been 1·0 per cent. at the lowest estimate, whereas it was only 0·24. In fact, the sample was nothing but woodified matter, tasteless and odourless. The aromatic and pungent qualities could be extracted without crushing, but he could not say that to extract those qualities without crushing would be too expensive to make it worth a dealer's while to do it. For the defence Mr. Leak said he could understand crushed ginger, from which the aromatic and pungent qualities had been extracted, being ground and used to adulterate genuine ginger, but he contended that to extract those qualities from root ginger would be so expensive and costly a process that it would not pay to do it. This was the first prosecution of the kind that had been taken in the country, and it had come as a shock to the trade, who had been under the impression that lump ginger could not be adulterated. There were poor or bad specimens of all natural products, and he asked the Court to believe that this was genuine ginger, although it was a bad sample. The Stipendiary said the prosecution had brought to light a new opening for fraud, and he was very glad they had been able to nip it in the bud. Under the circumstances he would impose upon the defendant Pennington, the nominal penalty of £5, with £2 10s. 6d. costs. The summons against Crabtree was withdrawn.

MONTGOMERY COUNTY COUNCIL AND FOOD AND DRUGS ADULTERATION.

THE Clerk of this Council received a communication from the Leicestershire County Council asking for its support to the following resolutions—(1) "That the Council approves of the action of the Local Government Board with regard to the inquiry before the Parliamentary Committee respecting the Adulteration of Food and Drugs Act, Dairy Produce, and Drugs, and the working of the Food and Drugs Act, and the Margarine Acts, and expresses a hope that the recommendation of the Board's inspector, Mr. Preston Thomas, made to the said Committee will be embodied in a Bill, and introduced into Parliament. (2) That, in the opinion of the Council, all vessels containing skimmed milk should be labelled as such in letters an inch long, that a standard for water in butter be fixed, and that margarine should either be sold in a separate shape or coloured differently from butter." A draft was also submitted of the procedure of the Leicester County Council, with a view to secure to agriculturists in the county the advantages conferred by the Fertilizers and Feeding Stuffs Act of last year. The decisions of the Councils empowered the Chief Constable, the superintendents, and inspectors in charge of petty-sessional divisions to take samples on behalf of the buyers, the cost being included in the charge fixed to be paid to the county analyst for analysing on behalf of the buyers. It was decided to adopt the resolutions of the Leicestershire County Council, also its procedure in the matter of the Fertilizers and Feeding Stuffs Act, but the latter was referred to the Technical Instruction Committee for such alteration as local circumstances may require.

A QUEER DECISION.

AT Spalding Petty Sessions, Jacob Balsham, of Swan-street, Spalding, milkman, was summoned by Superintendent Osborn, under the Adulteration Act, for selling a pint of milk adulterated with not less than 5 per cent. of water, on November 17th. Mr. Stiles appeared for the defendant, the charge being denied. Inspector Swaby and Superintendent Osborn spoke to purchasing the milk, and it being forwarded for analysis; and the certificate of the analyst (Mr. C. H. Southwell, of Boston) was put in, in which the adulteration was put at not less than 5 per cent., taking the lowest standard of pure milk. Mr. Stiles objected to the certificate of the analyst as being indefinite, but the Bench held that the case must go on. Mr. Stiles, for the defence, quoted several scientific works to show that the milk of cows varied, and was liable to depreciate in quality. He called the defendant to prove that the cows were brought from an eddish on November 12th, and upon being put into a shed, were fed upon a newly-cut haystack, the top of which had been much exposed to the weather and had lost much of its goodness. He stated that the milk from the cows had fallen off in quantity and quality, and the condition of the cows had also depreciated. He denied that any water had been added to the milk; and Mrs. Belsham and a son of the defendant were also called and corroborated this statement. Mr. Stiles reminded the Bench that in May, 1893, two similar cases were brought before them from Long Sutton, wherein the alleged adulteration was 5 and 6 per cent. respectively. Upon the facts, the Bench dismissed the case, and he asked them to take a similar course in the present instance. After conferring together, the Chairman announced that the Bench were unanimous in dismissing the case.

DISEASED MEAT AT SOUTH SHIELDS.

AT the South Shields Police-court, on the 19th ulto, James McKenzie was summoned for depositing for sale diseased meat. The Town Clerk prosecuted and Mr. C. W. Newlands defended. Mr. Pollock, meat inspector, stated that he visited the defendant's slaughter-house in Saltwell-lane, and saw, deposited for sale, fifty-four small pieces of meat, five forequarters, four and a half livers, two rumps and sirloins, one sirloin and three heads. On one of the livers he found an abscess containing at least a gill of matter; all the livers were more or less affected the same. The forequarters were stripped, the meat was soft, flabby, and emaciated, and all was affected with tuberculosis, and in his opinion was unfit for human food. It was afterwards examined by the medical officer of health, and a magistrate, who made an order for its destruction. Dr. Turnbull (medical officer of health) also gave evidence, describing minutely the condition of the meat which he considered diseased and unfit for the food of man. Mr. Newlands contended that it had not been shown that the meat was intended for sale, that there had not been any deliberate offence, and that the defendant did not have any actual knowledge of the disease. The magistrates considered their decision in private and fined the defendant £5 and costs. The Mayor said the public must be defended against the sale of diseased meat.

At South Shields, on December 28th, Wm. Davidson was charged with preparing and exposing for sale a quantity of unsound beef. Mr. J. Moore Hayton, town clerk, prosecuted, and Mr. C. W. Newlands defended. Mr. Hayton said the defendant was a butcher in South Shields, and had a stall in the Market-place and a slaughter-house in Coronation-street. On the 14th inst., Mr. Pollock, the meat inspector, visited the latter-named premises and found four

carcasses of beef. Two of these were cut up and quartered, and he examined one of the quarters and found it was affected with tuberculosis. He asked for the lungs of the beast, and the boy in charge handed them to him, and he found indications of the same disease. Mr. Pollock gave evidence in support of this statement. He said that the medical officer also saw the beef, which was afterwards destroyed on a magistrate's order. By Mr. Newlands: The meat was unfit for food, but he had seen worse. Dr. Turnbull corroborated as to the condition of the beef, and described it as quite unfit for food. Cross-examined: There had apparently been no attempt to wilfully hide the diseased portions of the beef. Mr. Newlands, for the defence, said that his client had had his doubts about certain portions of the meat when it was quartered, and he gave instructions to his men not to touch it until the inspector saw it. It would have been destroyed immediately but they were not aware that its condition was so bad. Evidence was called to this effect. Mr. Pollock, recalled by Mr. Newlands, said that up to a certain point this disease did not render the beef unfit for food. A fine of £5 and costs was imposed.

RAILWAY REFRESHMENT-ROOM MILK.

AT Southampton, on December 27th, Albert R. Pettitt, contractor to the London and South-Western Railway, was summoned under the Food and Drugs Act for having, on December 18th, at Eastleigh, sold new milk not of the nature, substance, and quality demanded, namely, from which cream had been extracted to the prejudice of the purchaser. Mr. J. P. Grain, barrister-at-law, instructed by Messrs. H. J. and T. Child, solicitors, Doctors' Commons, appeared for the defence, and at the outset said this was an important case to the defendant, and he must take advantage of every technicality. He raised the preliminary objection that the provisions of what was called Jarvis's Act had been broken by two clear and distinct offences having been joined in one summons, and therefore the summons should be dismissed as being bad. The complainant might have issued two summonses, one for selling milk not of the nature, substance, and quality demanded, and the other for selling milk from which cream had been extracted. There had been an endeavour to have two strings to the bow, which was contrary to the law, and as this might be a test case he was obliged to take advantage of every technicality. The Chairman said it was an important point, the Bench were not inclined to accede to the application, and they would proceed under section 6. Mr. Grain asked for a note to be taken of his objection, and this was done. P.-s. Jacobs, stationed at Shirley, said he was an inspector under the Food and Drugs Act, and about noon on December 8th he visited the refreshment-room on the up platform of the Eastleigh railway station, and asked for a pint of new milk, with which he was supplied by a barmaid, and he paid 6d. for it. He informed her that he had purchased the milk with the intention of having it analysed, and offered to divide it into three parts, which was accepted. He divided the milk and left one portion, the other being directed to the public analyst, handing it to him the same day, and the third he kept and produced. The witness was about to put in the analyst's certificate, when Mr. Grain raised the objection that notice had been given requiring the analyst to give evidence, and Superintendent Matthews said he would call the public analyst. Arthur Angell deposed that he was county analyst, and the certificate as to his analysis was before him. The result of it was: solids, minus fat, 9.33 per cent.; butter fat, 2.13; ash, or mineral matter, .74. No change had taken place with the condition to interfere with the analysis. He said as a fact that cream had been extracted. It was not new milk, but milk minus something. In cross-examination witness said that the Society of Public Analysts, of which he was a member, had suggested that the limits of 9 per cent. for non-fatty solids and 2.5 for fatty should be adopted. Large quantities of milk had been collected by the Local Government Board years ago, and the mean result was about the figures suggested by the Society. Mr. Bannister, the second in command at Somerset House, had fixed the amount for fat at 2.75. The quality of fatty matter in milk depended on the breed of the cow, its health, and the nature of its pasture. A portion of the cream would adhere to the vessel if allowed to stand when milk was drawn from the bottom of the churn, as he understood was the case here. The lowest percentage of fat he had found in new milk was not far below 2.5, certainly not below 2.4. Public analysts did not vary like doctors in their opinion, but they were getting to be a happy family with regard to their standard. Mr. Grain asked the Bench, in order to have an absolutely independent opinion, to cause the third sample to be sent to be analysed at Somerset House, stating that the one left with the defendant had been analysed by a gentleman of considerable eminence, and it varied most materially from that of the last witness. The defendant and those he represented had a warranty from a farmer in the neighbourhood, and it was sold as it came in, and it was a most important matter to them. The Bench acceded to the request, as it was an important case, but expressed their confidence in the ability of the county analyst. Mr. Grain said he did not wish to dispute that, but analysts differed in opinion. The Chairman said it was an important matter to him personally, and he should be interested to see how the figures came out, as he had many a glass of milk at the same bar. The summons was adjourned for a fortnight, to enable the analysis to be made at Somerset House.

KEIGHLEY MAGISTRATES IMPROVE.

At the Keighley Police-court, on January 4th, Cornelius Dixon, grocer, High-street, Keighley, was summoned for exposing margarine for sale without a proper label being affixed. Mr. Randerson gave evidence, and said that Mr. Dixon told him that the article was margarine. As he was leaving the shop the defendant, referring to the margarine, said, "It has come from that lump there; I could not help it; I can't deny it that it was exposed for sale." The Bench said it was clear that there had been, at any rate, gross carelessness on the part of the defendant. He would be fined £5 and costs.

THE WARRANTY GAME.

At Brentford Petty Sessions, on December 29th, Chief-Inspector Tyler, of the Middlesex County Council, prosecuted in two important adulteration cases. Messrs. Pentelow, grocers, of Hounslow, were fined £3 and costs for selling butter containing twenty-five per cent. of foreign fat. The defence was that the words "pure butter" burnt on the box in which the butter was sent to defendants was a warranty, thus relieving the retailer from all responsibility. The Bench decided to the contrary, and refused to grant a case.—The Metropolitan and Suburban Supply Association, Limited, were summoned for selling milk 10 per cent. deficient in butter fat. In reply to Inspector Tyler, William Bass, a Brentford milkman, said he had done business with the Supply people for years. "You have cows of your own?" said Mr. Tyler.—"Yes, sir."—"Do you ever mix your own milk with the Supply people's?"—"No, sir."—"Why?"—"Because I would not depend on it." Defendants, however, proved that they were supplied by a Bath dairy farmer named Bull, on whose warranty they relied. The Bench in the end decided in favour of the defendants.

MARGARINE AGAIN.

"My acquaintance, Commissioner Van Valkenburgh, who afforded me so much information with regard to the adulteration of milk and butter in New York State, has recently mentioned some facts which are worthy of notice. He says that during the past year his officers have found, in a number of samples of margarine, from 5 to 11 per cent. of paraffin wax. In his office there are sworn statements by Professors Waller and Love, and the chemists to the New York Produce Exchange and the New York Mercantile Exchange—all men of the highest standing—to this effect:—They have found in samples delivered to them by this Department of Agriculture paraffin varying from 5 to 11·25 per cent. Each chemist received a different sample, and each found in some cases higher, in some cases lower amounts. So far it has not been determined who is the manufacturer of the material in which the adulteration was present, inasmuch as the stamps indicating such details had been obliterated, thus preventing the detection of the fact that the purchaser of butter had been furnished with margarine. Paraffin can be dissolved by no known acid or alkali, hence the deduction that it is dangerous as an article of food. Mr. Van Valkenburgh says, what he has often remarked before, that he has yet to learn of a single citizen of the State of New York who has or who will knowingly consume margarine as an article of food; and he asserts that it has no sale, unless it be to the grocer, who sells it to the consumer as and for butter, or the hotel, restaurant, or boarding-house keeper, who supplies it to his customers as butter. I hope this fact will be brought to the notice of the commission, which has not completed its labours; and I am sorry it was not in my power to have mentioned it in giving my own evidence."—JAMES LONG, in the *Farmer's Gazette*.

TYPHOID IN THE OYSTER.

DR. C. J. FOOTE, the Yale demonstrator in bacteriology, to whom was assigned by the State Board of Health, after the outbreak of typhoid at Wesleyan University, the investigation of the life of typhoid germs in the oyster, has conducted the experiments along two lines. In the one case he bored a hole through the shell of a living oyster and inserted the germs; in the other case he placed the germs with the opened oyster. In both cases the germs were found alive after a number of days. The State Board of Health, therefore, has concluded that the germ lives in the oyster long enough at least to have caused the disease in the Wesleyan University victims. Dr. Foote is now investigating the power of the germ to propagate itself in the oyster.

In one case at Wesleyan it was found that a typhoid patient had not eaten of the raw oysters at the initiation suppers. Investigation of this instance, however, has shown that the patient had eaten raw oysters at the establishment where those had been sold for the suppers and at about the same time.

In the case of the private entertainment in this city which preceded certain typhoid outbreaks, the State Board of Health has found that of twenty-one persons present, six took the disease. The investigation left only the raw oysters under suspicion. Through the caterer the oysters were traced to the seller, who declares that he bought them at New York from an oyster boat which he cannot identify. The oysters were alleged to be "blue points," but that term is very generally used here for all small oysters from local beds, and sold to be served raw.

In consequence of the disclosures, it is estimated that since they were made, some three weeks ago, oyster sales in this city and neighbourhood have already fallen off to the amount of more than 100,000dols. The disclosures came at a time of the year when sales are usually large.

**HARRIS v. LONDON COUNTY COUNCIL.
IMPORTANT CASE.**

THE appellant, who resided near Stoke-on-Trent, supplied milk under a contract to a dairyman in London. This was despatched in churns or cans and so delivered to the railway company. Each can was supposed to contain about 16 gallons of milk, but as the railway company charges by measure in these cases, a gauge was fixed inside each can so as to show the number of gallons which it contained. It appears to have been the custom of the appellant to affix a ticket to one of the cans stating the total number of gallons sent. In April last four cans were despatched, containing in all 66 gallons. These were inspected by an official of the County Council, who found that the cans contained two pints less than 66 gallons. The same thing happening upon a subsequent occasion, the County Council instructed their officials to commence proceedings, and a summons was taken out under section 27 of the Weights and Measures Act of 1878. At the trial it was proved in evidence that the cans were filled by means of a gallon measure, but the magistrates convicted on the ground that the cans in question were "measures" within the meaning of the Act, and that they were not merely receptacles for the carriage of the milk, the gauge being placed inside to enable the railway company to fix the charge for carriage. The case came before the Divisional Court by way of appeal, and the appellant contended that the cans were not measures, but merely for the purpose of sending the milk by train, and that, therefore, the conviction was wrong. It was also pointed out that cans such as these were frequently much knocked about, and that they suffered considerable damage, that they became indented, and consequently could not be taken as accurate measure. It was also contended that the gauge was only intended to approximately ascertain the number of gallons for the purpose of paying the carriage, and of acting as a guide to the dairyman in London. It was also pointed out that the milk was measured carefully into the cans, and that the gauge was not relied upon. The Court, however, came to the conclusion that the conviction was right, and therefore dismissed the appeal. The cans, said the judges, were in the appellant's possession "for use for trade" within the meaning of the Act, that they were used as measures by the railway company and also by the purchaser, and that as they were found to be "false or unjust" the fine was rightly inflicted.

THE ADULTERATION OF GINGER.

BEFORE the Potteries Stipendiary (Mr. Harold Wright), at Hanley, on December 31st, Edwin Crabtree, manager of the People's Tea Company's establishment in St. John's-square, Burslem, and Thomas Henry Pennington, Clarendon-place, Hyde, Manchester, the proprietor of the business, were summoned under the Food and Drugs Act for selling lump ginger from which a portion of its pungent and aromatic properties had been abstracted, so as to injuriously affect its quality, without making disclosure of such adulteration to the purchaser. Mr. E. W. H. Knight (inspector under the Act) prosecuted, and Mr. F. S. Leak, Manchester, appeared for the defence. It was stated that on November 10th two samples of root ginger were purchased from the defendant Crabtree, 3d. being the price of one and 2d. the other. These were submitted to the county analyst, who certified that the cheaper ginger was genuine, while the higher-priced sample had been exhausted by a solvent whereby its aromatic and pungent qualities had been abstracted, so that it was almost tasteless. Mr. E. T. W. Jones, county analyst, gave evidence in support of his certificate, and, in reply to Mr. Leak, said he had never heard of a prosecution for adulteration of lump or root ginger before. He could not say that the two samples of ginger were of the same growth. He gave details of his analysis, and said that the essential oil was just one half of the very lowest quantity which should be found in genuine ginger. He did not think this could happen naturally. The amount of potash should have been 1·0 per cent. at the lowest estimate, whereas it was only 0·24. In fact, the sample was nothing but woodified matter, tasteless and odourless. The aromatic and pungent qualities could be extracted without crushing, but he could not say that to extract those qualities without crushing would be too expensive to make it worth a dealer's while to do it. For the defence Mr. Leak said he could understand crushed ginger, from which the aromatic and pungent qualities had been extracted, being ground and used to adulterate genuine ginger, but he contended that to extract those qualities from root ginger would be so expensive and costly a process that it would not pay to do it. This was the first prosecution of the kind that had been taken in the country, and it had come as a shock to the trade, who had been under the impression that lump ginger could not be adulterated. There were poor or bad specimens of all natural products, and he asked the Court to believe that this was genuine ginger, although it was a bad sample. The Stipendiary said the prosecution had brought to light a new opening for fraud, and he was very glad they had been able to nip it in the bud. Under the circumstances he would impose upon the defendant Pennington, the nominal penalty of £5, with £2 19s. 6d. costs. The summons against Crabtree was withdrawn.

PROSECUTION CASES.

At Southwark, on January 3rd, a buttermilk, named Thomas Hawkes, in a large way of business at 34, Bermondsey New-road, appeared to a summons taken out by Chief Sanitary Inspector Thomas, at the instance of the Bermondsey Vestry, charging him with having, on November 29th last, exposed for sale a tub of margarine without being labelled in conformity with the Act. Mr. Armstrong defended. Mr. Thomas's assistant entered the shop, and seeing a tub, said he wanted some butter, but the defendant's employée told him it was only margarine, whereupon Mr. Thomas drew attention to the fact that the tub was not labelled. All the witnesses were severely cross-examined, and for the defence Mr. Armstrong said the defendant's employée was clearing up and had only temporarily removed the label. Mr. Thomas said the defendant did a very large business in margarine. He had already been twice convicted under the Act. Mr. Slade told the defendant that for the third offence he was liable to a £100 fine. He would be fined £20 and costs. Notice of appeal was given.

At Lambeth, William Morgan, of Sutherland-square, Walworth, was summoned by Inspector Selby, on behalf of the Newington Vestry, on January 2nd, for selling milk containing 20 per cent. of added water. The milk was purchased from one of the defendant's assistant's, who was hawking it in the streets. The defendant pleaded that he had no knowledge of the dilution, and handed in a medical certificate showing that at the time the sample was taken he was in ill-health and unable to attend to business. Mr. Hopkins said he would only impose a nominal penalty, 20s. and costs.—A boy named Henry Faldo, of Bolton-street, Kennington, was also fined 20s. and costs for selling milk containing 15 per cent. of added water. It was stated that the lad had been conducting business on his own account for some time, but had now sold his connection.

At Linlithgow, George Thomson, dairyman, Old Town, Broxburn, was charged with having, on December 11th, sold to John Frew, sanitary inspector, two pennyworth of sweet milk, which was found to have been adulterated with water. Accused pleaded guilty, and was fined £3.—Robert Galloway, dairyman, East Norton, Mid-Lothian, pleaded guilty to a similar charge, and was also fined £3.

Thomas H. Goodwin, trading as the Danish Dairy Company, was summoned before the Croydon Borough Magistrates, on January 2nd, for selling, to the prejudice of the purchaser, butter which was not of the nature and substance demanded, contrary to the Food and Drugs Act. Miss Kate Gardner, the daughter of the informant, stated that on November 20th she went to the defendant's shop in Church-street, Croydon, and asked for half a pound of "shilling butter." Mr. M'Donald, the manager, served her, and handed her the article wrapped in brown paper. She paid 6d. for it. He made no remark to her. She was met at the door by her father, for whom she had purchased the butter. William Gardner, who said he was the complainant in the case, stated that he accompanied the previous witness to defendant's shop, where he received the parcel from her. He asked the manager if he had served "this butter," and he replied, "Yes." On learning that the "butter" had been bought for analysis, the manager said, "Did you buy it for butter?" Witness replied, "Certainly." M'Donald then said, "It is not butter; it is margarine." Witness retorted, "It is not in a margarine paper, whereupon he said, "No, I ought to have told the young woman. I am very sorry." Witness then divided it in the usual way, and sent a sample to Dr. Stevenson, the county analyst, whose certificate (produced) was as follows:—"Foreign fat, 73 per cent.; water, salt, and curd, 16 per cent.; butter fat, 11 per cent." The Mayor fined the defendant £10 and 7s. 6d. costs, which was paid. Mr. Beck, who prosecuted, intimated that as evidence of the *bona-fides* of his client, he would not ask for costs, or for a moiety of the penalty.

At Marylebone, on January 5th, Mrs. E. Holloway, of Manor Farm, Soulbury, Leighton Buzzard, appeared to two summonses

for sending to London milk which was adulterated to the extent of 10 and 15 per cent. respectively. Mr. Blythe appeared to prosecute on behalf of the Hampstead Vestry. Wm. Edmunds, sanitary inspector, spoke to taking samples of milk from two churns upon their arrival at Kilburn station (London and North-Western Railway Company) from Leighton Buzzard. These samples were subsequently submitted to the public analyst, who certified that the milk had been adulterated with water to the extent of 10 and 15 per cent. The defendant said she could not account for the adulteration, as the milk when it left her farm was perfectly pure. The poorness of the milk might, however, be accounted for by the fact that her cows had just finished calving. Mr. Cooke imposed a fine of £5 and 9s. costs.

At North London, Mr. John Sinton, a wine and spirit merchant of Stroud Green-road, Hornsey, was summoned, on January 5th, by the Middlesex County Council for selling without disclosure a bottle of whiskey 28½deg. below proof, which was 3½deg. below the limit of 25degs. below proof allowed by the Adulteration of Food and Drugs Act. Mr. Forbes defended. Mr. A. L. Bridge, the Council inspector, said that on the 17th he instructed his assistant to purchase a bottle of whiskey at the defendant's premises. He did so, and witness submitted the sample to the analyst, with the result that it was found to be 28½deg. below proof. The defence set up was that the whiskey in question had been bottled on the morning of the 17th, and brought from the cellar to the shop before the label stating that it was "about 30 below proof" had been placed upon the bottle.—The defendant said that all his servants were instructed to see that the bottles were properly labelled, but in this instance the manager and the lady clerk were away from the shop at the moment, and the inspector's assistant was served by the cellerman with one of the bottles he had just brought into the shop. Mr. Fenwick said the evidence of the defendant's witnesses was not satisfactory, and he imposed a fine of £10, with 12s. 6d. costs.

At Grantham, on December 31st, Francis John Brown, milk-seller, of No. 1, Brownlow-street, was summoned for selling milk which was not of the nature, substance, and quality demanded. Mr. G. W. G. Beaumont appeared for the defendant. Mr. Jas. Barnacle, sanitary inspector for the borough of Grantham, stated that on December 4th he was engaged in taking samples of food for analysis. A youth named William Kidd, in the employ of the defendant, was selling milk in Sidney-street, and complainant purchased from him a pint of new milk, for which he paid three-halfpence. He told the young man that he was buying it for the purpose of analysis. Having put the milk into three separate bottles, he sealed them up, handed one to Kidd, retained one himself, and sent the other subsequently to the public analyst. On the 19th ult. he received a certificate to the effect that 10 per cent. of the fat natural to milk had been abstracted from it. He thereupon took these proceedings. By Mr. Beaumont: I received a written notice that the defendant had received a written warranty with the milk, and that it was sold in the same state as it was received. Mr. Beaumont stated that the defendant could prove, to the satisfaction of the Court, that he purchased the milk as the same in nature, substance, and quality as that demanded, with a written warranty to that effect, and if there was reason to believe that he had sold it in the condition in which it was received, he would be entitled to his dismissal. Defendant then entered the witness-box, and stated that he bought the milk in question from Mr. Thomas Shipman, of Muston. The milk in question came in a churn, to which a guarantee of its purity was attached. This he now produced. It was a usual thing in the trade to require a guarantee to be sent with the milk. When the churn arrived he locked it up in the dairy, and the following morning it was sent round for delivery in exactly the same state as when it was received. No one touched the milk until he gave it to the boy for distribution. Milk intended to stand for cream was put in open pans. Mr. Barnacle had taken several samples before, and had not complained about them. By Mr. Barnacle: I fetch the milk every day from Muston. The cart leaves my house at four, and returns to Grantham between six and seven o'clock. I

CHAMPION'S MUSTARD

MANUFACTURED AND MILLED FROM

MUSTARD SEED ONLY.

CHAMPION & CO., so far as they are aware, are the only makers of importance who **DO NOT MAKE AN ADULTERATED MUSTARD.**

CHAMPION & Co. confine their attention to selling only Genuine Mustard Flour, milled and manufactured from Mustard Seed. They frequently sell 20,000 tins of such Mustard in a day in London alone.

To make **CHAMPION'S Mustard**, it is essential to use only the finest Mustard Seeds, inasmuch as chillies or ginger cannot be employed to produce pungency, nor can turmeric be utilised to secure high colour; consequently ripe and perfectly-coloured Mustard Seed only can be used.

sometimes fetch it myself. I get three or four churns, and a warranty is attached to each. The milk is not sold the same night; it is locked up in the dairy, and stands in the same churns until next morning. Besides milk, I also sell cream, but not a large quantity. I never sell more than two gallons per week. We have to make butter of it. William Kidd, a youth employed by the defendant, said he remembered three churns of milk coming from Muston on December 3rd. There was a label attached to each of them guaranteeing the purity, similar to the one produced. Mr. Brown put them in the dairy.—By Mr. Wilson: The churns were fastened when they came.—By Mr. Jeans: I took out two gallons of milk the next morning. The milk was taken out of one of the three churns that came from Muston the previous night.—Mr. Jeans (who presided during the hearing of this case) said that in the face of the certificate produced by Mr. Barnacle, the Bench had decided to impose a fine of £1 and 13s. expenses.

James Eastwood, grocer, Low Moor, was summoned at the Bradford West Riding-court, on December 31st, for having exposed margarine for sale in his shop without a proper label. Mr. Alexander Quinlan, the local inspector, stated that on visiting the defendant's shop on November 19th last he saw a pile of "butter" on the counter, and asked to be supplied with a pound. The defendant at first refused, but afterwards consented, stating that the material was margarine, but he supplied it without a label indicating that it was margarine. The defendant stated that his daughter had mislaid the margarine label in her hurry to go to a tea-party. Defendant was fined 20s. and costs.

The defence raised by William Hitchman, of South Lambeth-road, to a summons by the Lee Board of Works for selling milk admixed with 22 per cent. of added water, was that the milk was watered by an employée, whose instructions were to sell it at 3½d. per quart, and who explained the fact that he sold it at 3d by saying that he had to keep a connection together. Mr. Kennedy said that he did not suppose the defendant himself adulterated the milk, but he was responsible for the acts of his servants. He had been before this court several times, and would be fined £10.

Thomas Henry Goodwin, of Dudley, trading as the Danish Dairy Company, was fined by the Banbury magistrates, on January 7, £10 and costs for selling butter adulterated with 41 per cent. of foreign fat as "pure." The defence was that a mistake had been made by a shopman.

WELL-WATERED MILK AT MIDDLESBOROUGH.

AT the Middlesborough Police-court, before Mr. C. J. Coleman, stipendiary, Ann Walshaw, farmer, Homington, who did not appear, was summoned by Mr. George Anderson, sanitary inspector, for selling adulterated milk. Mr. George E. Barnley appeared for the prosecution, and stated that there were one or two circumstances of a rather peculiar nature in regard to the case. Although the inspector had regularly taken samples of milk from the farmers coming into the town, not one had been found adulterated for nearly two years; however, on Sunday morning, December 2nd, Mr. Anderson decided to take a turn round among the farmers, with the result that a sample of milk taken from defendant's cart was found to be adulterated with 13 per cent. of added water. The Stipendiary said that he looked upon milk adulteration as the meanest and most dangerous of all frauds, when he considered that the lives of a large number of invalids and infants depended upon the nourishment they received from milk. He felt it his duty to severely punish every person detected in such an offence. However, as the defendant had lived many years in the district and had not been previously convicted, she would be fined £2 10s. including costs.

WHAT IS COCOA P

MR. WM. TEETGEN, cocoa manufacturer, writes:—

Sir,—Will you permit me to make a few comments on your little notice of the Gosport decision on packet cocoa? I am a cocoa manufacturer and a retailer, so ought to know something of both sides of the matter. 1. The public will not buy cocoa nibs even when they are "flaked" (making them easier to stew); the trouble and waste is too great. 2. Cocoa compounds, i.e., a quickly-made beverage, of cocoa, arrowroot, cruelly called starch, and sugar (are not these all beneficial articles of food?), are as well established a favourite with consumers as the immemorial plum-pudding itself. 3. The public cannot get out of the habit of asking for such cocoa compounds as "cocoa." Is a counterman on every occasion to enter into a long explanation as to the distinction between "pure cocoa" and the article required? We have tried to do this; what is the result? "Oh, get along," says the customer, "you know what I want, I don't mean those nibs." 4. Cocoa compounds should be and generally are, distinctly labelled as such; is not that enough? 5. Here comes in a trouble which neither the Queen's horses nor all the Queen's men, seem able to settle. Is the manufacturer to state his proportions of cocoa, arrowroot, and sugar respectively? The Act not only does not tell him to, but by implication rather tells him not to. Would to goodness this matter were settled! Manufacturers and retailers, especially the latter, have been driven to distraction by conflicting decisions in courts low and high; don't add to our everlasting worry unless you are prepared to offer us a final solution. I am quite prepared to state proportions on the packet, but I am by no means sure it would be fair, in all cases, to be compelled to do so. By skill, good honest food beverages can be made to retail at from 6d. to 1s. a pound (pure cocoa, nibbed or flaked, costs about 1s. 4d.); do you say that every maker must be

compelled to say how it is done? Protect the consumer against fraud as effectually as you can; punish every rogue you can lay hold of, by all means; but don't add to the confusion by a question as to the "manufacturer's conscience"! Let the law distinctly say that a manufacturer must state his proportions, or even his ingredients, and he will have to do so; meantime, his proportions are almost exactly measured by the proportional prices he offers his article at.

THE MERCHANDISE MARKS ACT.

FLANNELETTE OR COTTONETTE?

THE further hearing of the summons against Mr. W. Whiteley, of Westbourne-grove, for an alleged infringement of the Merchandise Marks Act, on December 18th, was resumed before Mr. Plowden, at the Marylebone Police-court, on January 1st. This is an important test case affecting the interests of those engaged in the extensive business of the woollen trade and of the public. Mr. Grain had the conduct of the case; and Mr. H. Avory was for the defence. Mr. Hamilton, from Slater's Private Detective Association, said that in passing along Westbourne-grove he saw flannelette ticketed up and exposed for sale in the defendant's window. He purchased several samples, which were afterwards submitted to microscopic and chemical examinations, with the result that Mr. Harlan, the analyst, reported the material to have been made wholly of cotton. It was contended that the word flannelette implied the presence of some portion of wool in the material. Flannel, from which the word flannelette is derived, was made chiefly of wool, and flannelette had generally been regarded as containing a mixture of cotton and wool, the latter being in a less proportion than in flannel. The prosecution urged that the description, flannelette, was calculated to deceive and mislead the public. The defence did not deny that the material was made wholly of cotton. But it was argued that the public were well aware of the nature of the material, and were in no way misled. Those who purchased velvetine did not expect that article to contain the material found in velvet. Mr. Benjamin Armitage, late M.P. for Salford, managing director of the firm of Sir E. Armitage and Co., of Moseley-street, Manchester, said he had been chairman of the Manchester Chamber of Commerce for three years. He had been acquainted with the material flannelette for thirteen years and more, and had dealt in it, and it had been generally known in the trade nearly the whole of that time. Twenty years ago similar goods were made and sold in the market under different names according to their design. It was at that period the manufacturers began to use machinery which raised the surface of the material, and gave it a soft and comfortable feel to the skin. It was because the material looked more woolly that it was called flannelette. The author of that term was Mr. Marsden (of the firm of Messrs. Potter and Taylor), who died some five weeks ago. Witness's firm had had contracts with the India Office and the War Office for the supply of flannelette, and the specification signed required that the material should be of "cotton of good quality." Flannelette was well known in the trade at the time of the passing of the Merchandise Marks Act. Cross-examined: Witness was aware that a committee of the Manchester Chamber of Commerce, in February last, passed a resolution expressing the opinion that the terms flannelette or linenette as applied to purely cotton goods were descriptive terms calculated to deceive. He added that when the motion was brought up by the committee at a meeting of the Board, he moved a resolution the object of which was to annul the committee's resolution, as, in his opinion, it had been arrived at upon insufficient data. But, unfortunately he was out-voted by one at a board of eleven out of twenty-six directors. Witness had never used wool in the manufacture of flannelette. It was generally understood that flannel was made of wool; but he did not see that the term flannelette at all implied the presence of wool in it. Mr. Samuel Ogden, of Messrs. Ogden and Co., West Moseley-street, Manchester, said he was vice-chairman of the Manchester Chamber of Commerce last year. Cotton goods with a soft surface had been sold for the past forty-five years. They had taken the names of swansdown and lambskin. They took with the public because they were soft, and had a raised or woolly surface. It was more comfortable, but was not done to deceive the public. He agreed with the previous witnesses as to the resolution passed by the committee of the Manchester Chamber of Commerce. Cross-examined: The directors of the Chamber had subsequently passed a resolution suspending the opinion contained in the committee's report for the present.—Mr. Grain: They have not rescinded it?—Witness: No, that would be a reflection on the committee. Altogether some eight manufacturers and warehousemen gave evidence for the defence. They all said flannelette could be easily distinguished from woollen goods. It was true flannelette corresponded largely to the colour, pattern, and appearance of woollen goods, the object being to meet the growing taste of the public; but there was no desire to lead purchasers to believe that they were getting a woollen material when it was wholly cotton. Mr. Whiteley gave evidence of having known flannelette for ten years. The sale of the material had grown immensely, and was still increasing. He had regarded the name as a genuine trade description, and had never heard of anybody being deceived by it. Everybody knew it was made of cotton. It was sold at about 8d. a yard; woollen goods would cost more than double that price, so in that way the public could not have been deceived. No customer had complained to him about it. The case was again adjourned

THE GOSPORT COCOA CASE. EXTRAORDINARY PROCEEDINGS BY ADMIRAL FIELD, M.P.

THE following record of the proceedings at the Epiphany Quarter Sessions for Hampshire, on December 31st, reads as though some humorist had been amusing himself at Admiral Field's expense, but that such is not the case we are assured, the report of Admiral Field's speech being vouched for as accurate. It is well for the Chief Constable that Admiral Field's fellow magistrates can see more clearly than he does what is a clear case of duty, and of public protection, and that they treated his ridiculous impeachment of the officials with contempt.

At the Epiphany Quarter Sessions for Hampshire, held at Winchester, Admiral Field, M.P., had given notice—"To call attention to the recent prosecution of a grocer by the police at Gosport Petty Sessions, for the sale of cocoa said to be adulterated, and to the subsequent action of the Chief Constable thereon; as also to the legal proceedings authorised to be taken by the Chairman of the Standing Joint Committee at the expense of the county, and to move a resolution." Admiral Field said he must ask the patience of the Court while he unfolded, if not exactly a tale of woe, at any rate one of importance, for what was his case to-day might be that of any of his brother magistrates to-morrow, unless they showed they were in sympathy with the views he laid before them. The case arose out of a prosecution at Gosport before the Bench, of which he had the honour to be chairman, for selling cocoa under the Adulteration of Food Act on November 6th. It had been alleged in the papers that they, as a Bench, did not do their duty, that the defendant summoned by the police pleaded guilty, and that he, as chairman, undertook, more or less, to defend him, and suggested to him that he should withdraw his plea of guilty and should plead not guilty. He did so, and in doing so followed the brilliant example of distinguished men, judges and lawlords of great eminence. Had not their chairman, for instance, at Quarter Sessions often advised a man who was found to have a good case to withdraw his plea of guilty and to plead not guilty? Thinking the man had a good defence he only did what was his duty, and he made bold to say that this trumpety case could not have come before a better tribunal. He, himself, a naval officer on the retired list through no fault of his own, was supported by Captain Churehill, another naval officer, accustomed to sit on courts-martial and to sift evidence, while another of his colleagues was a colonel with long service in India, was accustomed to sift evidence and to deal with human failings. They heard this case, and they gave a sound judgment, and would give the same judgment to-morrow. If they had sinned they were unrepentant, and they stood to the decision they had arrived at. But they had not sinned, and he thought he should be able to convince every impartial man who heard him that it was a frivolous prosecution which never ought to have been instituted, and the decision on which never ought to have been challenged. The Chairman (Mr. Melville Portal): I don't wish to interrupt Admiral Field. We have heard part of his tale of woe, and he has come to the conclusion that he has not sinned. Of course he is aware that it is not for this Court to express any opinion on his action as a magistrate, or as Chairman of the Bench. He, and he alone, is responsible, and it is not a matter on which we can express an opinion. We cannot discuss a matter which is already before the Judges of the Queen's Court. The only points we can discuss are the action of the Chief Constable, and the proceedings authorised by the Standing Joint Committee.—Admiral Field: I know I am skating on thin ice, but I hope you will not stop me from explaining the case.—The Chairman: It is contrary to order to discuss matters over which we have no jurisdiction.—Admiral Field: I wanted to show that if we erred we erred in the most illustrious company of Her Majesty's Government, and if we have done wrong the Government ought to be impeached for the cocoa they have supplied to the navy. Amidst loud laughter the Admiral produced some ship's cocoa from his pocket and continued: It is 25 per cent. of sugar, 25 per cent. of sago flour, and only 50 per cent. of cocoa.—The Chairman: Her Majesty's Government is not within our jurisdiction.—Admiral Field said he wished to prove that the cocoa of commerce was a mixed article, and proceeded to quote from a book on Hygiene.—The Chairman: The time of the Court must not be taken up by that. We have nothing to do with cocoa as an article of commerce or anything else. The whole question we can consider is the action of the Chief Constable and the proceedings.—Admiral Field: Very well. I will carry this book to the High Court, where I will make my speech. Continuing, he urged that the Chief Constable, who was new to his duties, had adopted a most unusual course in challenging the decision of any bench of magistrates in such a trumpety case. It was a dangerous precedent to set, but he made great allowances for the Chief Constable, who was new to his duties and without experience. But what could he said of the Chairman of the Standing Joint Committee (Mr. Barrow Simonds), to whom the Chief Constable went? The Chairman of the Standing Joint Committee chose to arrogate to himself the right to sit as a court to review their proceedings and to send down a solicitor from Winchester to apply for a case to be stated. He was summoned a seven hours' journey to hear that application, which was refused. The Chairman of the Standing Joint Committee was six years his junior, and he did not recognise that he had any superior knowledge or ex-

perience in police-courts to himself. On the other hand he believed he had a great deal more experience than the Chairman of the Committee had ever had in the police-court at Winchester. True, by resolution of the Standing Joint Committee the chairman had power to sanction appeals, but he contended that this was meant simply to apply to licensing matters, and if it was extended to other cases the position of magistrates would be intolerable. The justices would really be brought under the authority of one of their own body; he might be senior to some and junior to others, and he had no qualifications for such a position, in fact he was elected not because of his qualifications, but because he lived near Winchester and because it was convenient. The magistrates had made a rod for their own backs, and he objected to being flogged by the Chairman of the Standing Joint Committee. Admiral Field went on to protest that a letter he marked "private" had been shown by the Chairman of the Standing Joint Committee to the Chairman of the County Council, and that the matter had been discussed at a meeting of the committee without any notice being sent to him.

Mr. Barrow Simonds, Chairman of the Standing Joint Committee: You are stating things that never took place.—Admiral Field: I understand that it was read by the Lord Lieutenant.—Mr. Barrow Simonds: Any letter sent to me marked "Private" will certainly be kept private. I have your letter here, and if you wish anyone to read it they can do so. But they had better not.—Admiral Field, continuing, moved:—"On any report from the Chief Constable calling in question the decision of any bench of magistrates on prosecutions by the police, in the opinion of this Court it is desirable that such matters should be referred to a sub-committee of justices (being members of the police authority) before any legal proceedings are taken with the view of challenging such decisions in a court of law." A member of the Court had undertaken to second the motion if the Chairman held it was in order.—The Chairman said that he thought the motion was out of order. All questions relating to the police were under the jurisdiction of the Standing Joint Committee, and it would be out of order for the Court of Quarter Sessions to attempt to dictate to them how they should do their business.—Admiral Field: Very well, I have only one thing more to say. I will ask the Chairman of the Standing Joint Committee whether he is responsible for the preparation of the affidavits refused by the Judges, which cast reflections upon me?—(Mr. Barrow Simonds: No.)—It held me up to public ridicule. It lies between the Chairman and the Chief Constable who must have prepared the evidence to be handed to the solicitors who got up the case. Or was it the Clerk to the Council who advised the Chief Constable? Someone must be responsible for the production of these affidavits which the Judges refused because they were disgraceful.—Mr. Barrow Simonds said that Admiral Field had stated a great many things which were perfectly untruthful, and it was clear he did not understand the working of the Standing Joint Committee.—The Chairman: It is very undesirable that we should go into this matter.—Mr. Barrow Simonds said he should like to point out that the application for a case had to be made within three days, and he sanctioned that application being made. The committee met shortly afterwards, and were unanimous that the proceedings should be instituted. Admiral Field was at the meeting, and never said a word there. The committee had power to depose him (the speaker) if they wished, and if the only qualification he had for the office was that he lived near Winchester the sooner they put him out the better. But the committee met immediately afterwards, and were unanimous that the proceedings should be instituted.—The subject then dropped.

EXCESS WATERED BUTTER.

AT Ryde, on December 20th, George Milwood, West Cowes, appeared to answer a charge of selling adulterated butter. Mr. W. H. Wooldridge defended. The case had been adjourned at defendants' request to enable a second analysis to be made at Somerset House. Mr. Otto Hehner reported the sample to be adulterated with 22.9 per cent. of water; the present analysis was 22.4. Mr. Wooldridge said defendant was an innocent party, and called Charles Urry, in the employ of Messrs. Upward and Rich, of Newport, from whom defendant purchased the butter, who stated that it was obtained from a Cork firm as pure salt butter. Nothing was done to it while in their possession. Defendant swore that he sold the butter as he received it. Mr. Wooldridge admitted that he had no legal defence, as there was no written warranty from the salesman, but urged that the evidence should be taken in mitigation of penalty. The Chairman said no doubt defendant had bought an inferior article at a less price, and he must take the consequences. They were bound to protect the public, and he would be fined £1 and £1 16s. costs.

THE SELECT COMMITTEE ON ADULTERATION. CONTINUATION OF MR. C. MIDDLETON'S EVIDENCE. XXVIII.

(Continued from page 8.)

Do you think it precise when the public analyst certified to 10 per cent. adulteration, and the referee certified to not less than 4 per cent. of added water, an enormous difference?—Yes, one says 10 per cent. of adulteration, and the other says not less than 4 per cent. of added water. It may be more than 4 per cent., but we swear to 4 per cent. of added water.—Why cannot the referees come nearer to the

actual proportion?—The first question is whether the results obtained by the public analyst were sufficiently exact to justify him in saying that there was 10 per cent. of adulteration.—You had not the case yourself?—I should like to have the figures, but so far as regards the figures that I have read out lately in the paper which I presented to you, you would see that so far as the differences between the public analysts themselves are concerned the results which they obtained were quite sufficient to cover the difference between 4 per cent. of water and 10 per cent.—As to the alleged increase in butter imports, you are aware that that is widely attributed to the vast increase of adulteration in France, is it not?—I believe that during the last year or two the amount of adulteration in France has considerably diminished on account of the stringency of their laws.—Still, is it not your opinion that there is a very large amount of this adulterated butter which, practically, if it were inspected properly at the ports of entry, would be found to be legally described as margarine?—I should not like to say for certain, from the information that I have. I could not answer that in the affirmative.—I have only one more question to put to you. You were asked about the relative digestibility of margarine and butter; is it not the fact that in margarine there is a much larger proportion of insoluble fats?—There is.

MR. JAMES LONG, further examined.

Sir Walter Foster: I think when we left off at the conclusion of your evidence, the question of margarine cheese was to be dealt with?—Yes.—You would enforce the branding of all such cheese, would you not?—I think it should be compulsory upon a manufacturer of cheese containing any fat other than butter fat to brand it, and I will suggest a brand of one and a-quarter inches by seven eighths of an inch, not merely stencilled upon the cheese, but impressed with an iron.—Mr. Frye: Would it hurt the cheese very much?—No. That question arose last year at the Conference of the British Dairy Farmers' Association in Somerset. The American cheeses, and Canadian cheeses, came over with stencilled brands, and I suggested to some of the shippers in Montreal that they ought to use for their own protection such a brand as I suggest to-day; but the objection was that it would damage the cheese, although they told me at the same time that the stencilled brand was rubbed or scraped off upon the arrival of the cheese at Liverpool by the importers, who absolutely charge for the process of scraping it off. Then at the conference I suggested that there should be an example of the impressed brand, and it was decided by the Committee that the cheese made by one of the skilled makers, Mr. Cannon, made upon the day of our arrival at his farm, should be retained for exhibition at the Dairy Show in October, and that it should be branded in the manner I suggest. It was branded and with perfect success.—Sir Walter Foster:—And the cheese was not injured?—Certainly not.—Would you also brand British cheese?—I would not suggest that there should be any law upon the subject; that is merely a suggestion in passing for the protection of the farmers themselves, who, following the example of the New York State farmers, would enhance the value of thin cheese by branding it in some such form as the New York State farmers do. "Full cream cheese," or words to that effect.—What is the practice in Canada?—There is a similar practice in force in Canada.—You in fact propose that cheese made from margarine should have the same legislation applied to it that you would apply to margarine butter?—I think it should.—You put them upon the same level?—Yes.—Both being products of the same variety of fat, you would have them treated in the same way by the Legislature?—I would.—With a view of protecting the public from having a spurious article foisted upon them?—Yes, and the farmers or producers from unfair competition.—Is there much manufacture of margarine cheese in England that you know of?—I cannot give any specific evidence upon the point, because there is a reticence upon the part of those connected with the trade to give it; but I do know of two instances in which it is made upon a large scale. I am afraid I cannot say any more than that.—That is to say, cheese is actually made from margarine, instead of from milk, on a large scale, within the United Kingdom?—Yes.—Can you account in any way for the deterioration in quality of cheese during the last few years, if there be such deterioration?—On the contrary, I think that British cheese has increased and improved in quality.—You think it has?—Undoubtedly.—And that the competition with foreign cheeses has probably brought that about?—Undoubtedly, to some extent it has; but it is possibly owing to the teaching, and, undoubtedly to the demand for teaching, that has arisen from foreign competition.—Has there been an equal, or even a greater improvement in foreign cheeses in that time, or in imported cheeses?—The Americans, the Canadians, and the Australians, who are our greatest competitors, are striving with their utmost might and main to maintain their position in our market, and to improve their cheese as we are.—And so far they are succeeding, are they not?—They are succeeding in improving their cheese, but I do not think that they have any chance of equalling our best makers on account of the distance over which the cheese has to travel.—Can you tell the Committee anything bearing upon the point of the localised manufacturers of special varieties of cheese, for example, Stilton?—In what way?—Stilton cheese is not a cheese made in one particular place, I understand?—It is chiefly made in Leicestershire, and in the neighbourhood of Leicester.—Is that the original seat of its production?—That is the home of the cheese.—And it

is principally made there still?—It is.—Is it imitated in other districts, and sold as Stilton?—Stilton cheese is made in other districts, but it is not an imitation, I should take it, but quite as good.—Then you think that various localities in England which have been celebrated for their cheeses have, up to the present time, maintained their position?—They have. Other localities have made the same kind of cheese with equal success.—But each of these old seats of production is still keeping up its manufacture?—Yes.—Is it increasing it, do you think?—I think it is, both in quantity and quality.—So that the home producer is really producing more cheese now in those various localities than formerly?—I believe so.—And cheese of better quality?—Yes.—Has the price altered very much?—This summer the price of cheese has fallen, but until now there has been no material change in the price, but it has been maintained. There has been a distinct fall this summer.—And in that respect, with the increased production, with the superiority of quality, and with the maintenance of the price, this particular branch of agricultural produce has not suffered very much?—By no means so much as other branches of agriculture.—So that cheese production has been a profitable work for the farmer?—One of the best on the farm.—Mr. Frye: Has the price of Cheshire cheese very much increased this last year?—At the present time Cheshire cheese has fallen materially in value.—Last year did it increase?—It was a very good price last year.—The highest price ever known, was it not?—I think it would not be too much to say so. Sir Walter Foster: Have you anything else that you wish to bring before the Committee?—There are one or two points arising out of my evidence of last week.—Have you any supplementary remarks to make with regard to your evidence?—I have a few.—Will you proceed with them?—I have got two or three answers with me in reply to questions which were put to me last week. One was with regard to the percentage of individual cows whose milk fell below the standard which I suggested. I would point out that this percentage can be obtained from the evidence which I have given as to the quality of milk obtained from various sources; but I have one example which I would like to quote, as I think it is a fair example of what can be found in very many cases. This is from a herd of the Royal Agricultural College and Dairy, and although of course the milk, with this exception, is of very high quality, this particular cow gave solids not fat equal to 7.28 per cent. only. I thought that would be a case in point.—Have you the fatty solids?—Yes, 3.27 per cent.—The fatty solids were then fairly up to the standard?—Yes.—And the total solids were considerably below the standard?—Yes, the solids not fat were quite abnormally low.—Was there anything about the feeding of that particular cow that was peculiar?—No, they were all fed upon the same kind of food, which is here given: "The cows received from 30lbs. to 40lbs. of roots, 14lbs. to 16lbs. of chaff, and 3lbs. to 6lbs. of meal."—How long had that cow calved?—On January 26th, and this milk was taken on December 12th in the same year, so that is about 11 months.—Would that have any influence on the peculiar character of the milk?—Any influence which would occur in this case would be to improve the quality of the milk rather than to depreciate it.—Then you can only refer this milk to the peculiarity of that individual cow?—Exactly.—That is the point which you wish to bring out, is it?—I wish to bring out the point that out of 18 cows one only gave milk of an abnormally low quality. I think that is a very fair example, although it is most unusually abnormal.—Is there any other point that arises out of your evidence which you wish to refer to?—I was asked with regard to the milk of Scotch cows, and I referred to Ayrshire cows, but I omitted to mention that my reference was taken from a very large northern factory of milk, which consists of 90 per cent. of Ayrshire cows, and that it was considerably above the standard. The next question was with regard to condensed milk. I was asked to give the size of the letters which I suggest should be half-inch square upon the label.—On the tin?—Yes.—Would there be room on a small tin?—On a 1lb. tin there would.—But then there are very small tins of condensed milk now, are there not?—I cannot tell you.—There are quarter tins, are there not?—I do not know the technical term, but they hold a pound.—Would you reduce the size of the letters on those little tins? I think that would be quite as small as you could make them. I was also asked with regard to the Danish exportation, and I gave them to show the great progress of the butter trade in Denmark between 1878 and 1885; but in case that may convey a wrong impression, I refer to the fact that in 1892 the actual produce of Danish butter amounted to 96,000,000 lbs.—Have you any other point that you wish to refer to?—The next point is with regard to the proposed French Bill. I have taken the three salient points, one of which is that it is proposed to prohibit the sale of margarine and butter on the same premises by the same people; the next is that it is proposed to fine defendants convicted from £20 to £200, or to give them from three months to two years onwards, imprisonment; and the third point is that it is proposed to publish the conviction in three journals, also in the market place, and also on the premises of the defendant, at the defendant's cost.—Have you any other points beyond those?—There is one point. It has been suggested to me that my evidence reflects upon chemical analyses. In suggesting that there should be a Dairy Bureau, I had in mind the fact that such an authority would select those who are most competent by their experience in this particular line of analysis, and I merely wished by my evidence to suggest that every chemist cannot be, and is not a skilled analyst as regards butter and margarine, and that only

those who are really skilled are persons whose evidence is worth accepting in a case in which a man is placed upon his trial. I did suggest, and I maintain at the present time, that below a certain point it is morally impossible to guarantee that butter contains no margarine.—Have you any other facts that you wish to place before us arising out of your evidence?—In proof of this last assertion which I have made, I should like to quote one of several other facts that I could give, and this fact is that I myself prepared a mixture of margarine and butter; the mixture was sent to two analysts for analysis, in order that there might be no dispute as to the margarine itself. I should state that I mixed the margarine with the butter at the rate of 16 $\frac{1}{2}$ per cent. One analyst returned the mixture as pure, and the other said that of the fat present in this sample 75 per cent. was butter fat, and 25 per cent. other than butter fat.—You give us those examples as illustrating the difficulty of analysis, and the variations that competent men may obtain in their results?—Hardly so.—I give you the instance to show that the practitioner who, I take it, has had considerable experience was very near the mark in one case, whereas the practitioner who has had little experience was very wide of the mark, indeed.—Then your point would indicate that a chemist who was not used to these analyses ought not to be employed?—That is the point; not that he cannot do it if he is experienced.—Colonel Bagot: Was the analyst who gave the result as pure a chemist and the other man an analyst?—They were both analysts.—What was the difference between them?—There is no difference; they are both supposed to be skilled analysts, but in the one case to my knowledge one gentleman has been constantly making analyses of margarine and butter, and, so far as I know, the other has not.—And the gentleman who is constantly in the habit of making analyses was the man who returned 25 per cent.?—Yes.—Sir Walter Foster: In his return he returned an excess over what you had introduced?—Exactly.—So that that bears upon the point, to some extent, of the difficulty of relying very precisely upon these analyses?—It shows that below the figure that is very often taken by chemists themselves, 20 per cent., you cannot tell with absolute certainty, or within a few per cent.—You had taken, I hope, in this case all possible precautions to diffuse your margarine equally through the sample?—Every possible precaution. I am quite convinced that the most experienced analysts with regard to this particular material are to be absolutely relied upon when you have such a mixture as is usually made by persons who intend to make a profit by fraudulent means.—What is the standard of that mixture?—From 25 per cent. upwards I should say.—Twenty-five per cent. or upwards of margarine would be detected with accuracy, you think?—I think 20 per cent. and upwards would be analysed with fairly accurate results.—Have you anything else that you wish to say?—I was asked with regard to water in butter. I had not the photographs by me last week, but I have brought them to-day that the Committee may see them (*handing in the same*).—These photographs are to illustrate the different appearances of water in butter under different conditions?—Yes. In the one case by very careful manipulation the water is shown to be present in small globules, and in the other case by more careless manipulation it is present in large globules, which can be seen upon the examination of the butter by the eye.—And I suppose you would repeat what you said last time, that water carefully diffused through butter would not be perceptible by the naked eye?—It would not be perceptible, although the butter might appear dry, and still contain a high percentage of water. I was next asked if I would give the details of Dr. Veith's analysis, and I promised to do so. Dr. Veith was for many years the chemist to the Aylesbury Dairy Company, and these figures are taken from 84,700 analyses of the milks of from 30 to 50 different farms between the years 1881 and 1888. The figures that I have taken are a digest of the whole of these analyses, and I think that they are some of the most valuable and conclusive in existence. They are taken by months. The total solids were never below 12·4 per cent.; they were twice as low only, and on those occasions in March and July, 1881. The solids not fat were below 9 per cent. in 12 different months; they maintained above 9 per cent. in all the later years after the first year; so that it appears to me that after the first year the farmers were cautioned, and they persistently improved their milk from that time henceforth. On one occasion only, in June, 1884, the fat in the milk fell down to 3·4 per cent.; the average of the eight years being from 3·8 to 4 per cent. Therefore that company were enabled to obtain a supply of milk far above the standard that I propose from 1881 to 1888. I also took a few examples of individual farms, all being morning analyses. On farm A, consisting of 30 shorthorn cows in 1881-82, three times the milk fell below 12 per cent., but never afterwards; the fat fell three times down to 3 per cent., but never afterwards; and the solids not fat on 41 occasions

out of 96 were below 9 per cent. That confirms my evidence of last week. On farm B, consisting of 60 shorthorn cows, the fat fell on two occasions to 3·2 per cent., the total solids were in every case from 12·2 to 14·2 per cent.; the solids not fat were 16 times below 9 per cent. On farm C, of 35 shorthorns, the solids were always over 12·4 per cent., and these are all the morning analyses, while the fat varied from 3·3 to 4·9 per cent.; the solids not fat were often at or below 9 per cent. Then Farms D, E, F, and G are very similar with regard to the results.—When you say that they were morning analyses, they were morning analyses at the Dairy Company's, I presume?—I should explain that they were analyses of the morning's milk, which is always poorer than the milk of the evening.—They were not analyses made of the morning's milk gathered the evening before?—I do not know when the analyses were made, but they were all of the morning's milk.—Have you any other particulars that you wish to give us?—With regard to tracing the milk back to the cow, I think it should always be compared with the mixed milk from all the cows owned by the producer, whether it be 1 cow or 100, and not with the mixed milk of the morning or the evening, because that would be impracticable; the milk retailer cannot possibly, excepting in winter, sell to his customers a mixed milk, because of the danger of its going sour, therefore you must take the milk as you find it. Accordingly, I suggest that it should be traced back to the original source as it is sold.—Do you mean to trace it back to the original cow?—To the original source, to the dairy, either to the one cow if the owner only owned one cow, or to the herd if he owned several; and upon that, in answer to objections that may be made, I would suggest that the salesman or retailer can always mix his milk in order to improve its quality with as great ease as he can mix it to diminish its quality. In the first place, in addition to mixing it with richer milk if he had it, he might mix with it some of the thin or adulterated cream that is commonly sold in the market just as easily as he can add water.—What do you mean by adulterated cream?—I will take a case in point. I have myself sent cream to London for consumption in eating-houses and restaurants, and I have myself seen it (it was an accident in this particular case) mixed with milk to reduce its quality for distribution amongst the customers.—Are you familiar with the very thick cream that is sold in London now in many places?—Yes.—How is that thickness produced?—Generally by placing the cream on ice.—It is not a question of addition of foreign properties?—I do not think so. It has been mixed with gelatine, but I do not think that is any longer pursued, because ice is so much cheaper, and surer, and simpler. And I think, with regard to the objection of the farmer, that so far as the farmer is concerned he can protect himself absolutely and entirely by the addition of cows giving richer milk.—Are there any other points that you have to bring before us?—No, I think not. I have figures here which are all a confirmation of the analyses that I gave last week, which are very abundant. Here, for instance, I have statistics of milk supplied to the Hampshire County Council for use in the dairy school, containing from 3 to 6·8 per cent. of fat, and so on. I have abundant materials showing the high quality of the milk obtained direct from the farm. I have a letter here from an analyst who says: "I know many will urge that the standard should be for total solids 11·5 per cent. A serious injury would be done to the public if such a standard were adopted; better remain as we are than have such a standard."—A low standard of that kind would result in the deterioration of the quality of milk sold generally, would it not?—I think it would.—That would be an injury to the public?—Yes.—Whereas a higher standard than the one which you suggested would result in injustice to many importers of milk?—I think it might.—So that the difficulty is in fixing a standard which shall protect the public on the one hand from general deterioration of quality, and save the individual supplier of milk on the other hand from unjust prosecution?—Quite so, I had this morning an interview with a very large milk merchant who supplied London shops. He did not know that I had given evidence, or was going to give evidence before this Committee, but he informed me that this question was being discussed by the trade, and he did not quite know, but he believed by Parliament; and he said that if the standard were raised as it was proposed to raise it (I do not know what standard he had in view) he believed that half the milk now being supplied to London would be retained upon the farms; and he said that he himself should be afraid of every churn of milk that he sent out. I quote that, but suggest that it is quite a misapprehension. I say that by following the suggestions which I have made already the parties could protect themselves without any fear whatever. I have no fear at all as a producer.

(To be continued.)

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Food and Sanitation.

SATURDAY, JANUARY 19TH, 1895.

THE DAIRY TRADE

AND THE

PUBLIC ANALYST'S PROPOSALS FOR AN AMENDED FOOD AND DRUGS ACT.

WE have on other occasions noted the common-sense attitude of the *Cowkeeper and Dairyman's Journal* upon the very serious question of milk adulteration. The following criticism, in its current issue, and the proposals of the public analysts will well repay perusal by our readers.

"Draft of a Sale of Food and Drugs Act, prepared by the Council of the Society of Public Analysts.

"Clause 30.—Board of Reference.—There shall be appointed a Board or Committee, consisting of the Chief Chemical Officer of the Inland Revenue Laboratory. A person nominated by the General Medical Council; three persons being Public Analysts nominated by the Local Government Board; and a person nominated by the Board of Agriculture. These appointments shall lapse triennially, except that of the Chief Officer of the Inland Revenue Laboratory, but the same persons shall be eligible for re-appointment.

"This Board of Reference shall be paid such remuneration as shall be decided by the Local Government Board in consultation with the Board of Agriculture and the Treasury, and their duty shall be from time to time to examine and report on the composition of various articles of food and drugs, and to describe, investigate, and devise new or improved methods for their examination, to set forth definitions and exceptions, and to fix limits and standards of quality and purity.

"The recommendations, definitions, exceptions, limits, and standards of the Board of Reference shall, on ratification by Order in Council and publication in the *London Gazette*, be binding

law, and shall continue in force until such Order in Council be rescinded, and the said Committee shall meet together at least six times annually for the purpose of consultation, and shall issue from time to time such new or revised regulations, definitions, exceptions, limits, and standards as they in their discretion may deem desirable.

The above three clauses have been very carefully prepared, and look as if they would work well. Unfortunately, we are left in the dark as regards procedure in cases of disputed analysis and of perishable articles of food. Many persons may ask the question, Is the change needful or desirable? I think so. Few persons, I think, who have had any experience in the working of the present laws, will contend that they work satisfactorily, and that there is no room for improvement. If we are to rely upon the united opinion of public analysts and private analysts as well, they are all unanimous in that it is impossible for Somerset House chemists to analyse sour milk. This is a strong testimony in favour of a change, and when this decision is supported by private analysts whose standing is equal to Somerset House chemists as milk analysts. Then, if this be so, and there can be little doubt about it, the sooner a change is made the better. No doubt the arrangement was the best that could be made at the time; in fact, it is surprising the whole affair has not broken down years ago, considering it was the first Act, and the little knowledge there was to work upon. But after twenty years' experience I think few persons could complain of much, considering the number of complaints of mishaps and injustice. Under any circumstances there is sufficient evidence to prove that the present procedure is neither creditable nor satisfactory. In desiring this change no one has any wish or desire to infer that there is any lack of ability in Somerset House chemists, but that the present arrangement is not suitable for the purpose. As dairymen we shall be no better off whatever arrangements are made unless the referee sample is analysed while in a perfectly sweet condition. I do think the suggested change will prove more beneficial to traders than the present one. This Board of Reference would have the whole thing in their own hands and be more in touch with the traders; they would be in a much better position to note abuses, and would have a much better opportunity to rectify them than exists at the present time. In considering this question we are not to consider the shortcomings of individual analysts, but to take the body, the Society of Public Analysts, and I think we shall not be far wrong in putting confidence in them. It seems to me only natural that those who have the practical working of the Acts, and are so closely connected with the everyday working of them, should have some say in the management of them. This change will do away with that spirit of exclusiveness and pre-eminence that has been assumed by the chemists of Somerset House from the first, which under the most favourable circumstances have been an hindrance and impediment to the development of the almost new science of food analysis, whilst the public analysts have given us indisputable evidence of unity of purpose, perseverance, energy, and zeal, their constant and persistent efforts to overcome and vanquish the many difficulties of their profession.

This Board of Reference would, I think, prove beneficial to the dairyman; the public analyst and the referee chemists would both work upon the same lines and adopt the same methods of analysis, which would certainly be an advantage to the dairy trade. In this new procedure this Board of Reference would have a say in the appointment of public analysts. It is quite time a new arrangement

was made in the appointment of those gentlemen. When a man is going to sit in judgment upon my character, and is trusted with the utmost infallible power, it is only a reasonable request that we should have some assurance that the person occupying this position should be competent. We want uniform procedure, we want one method or system of analysis for milk; the public analysts themselves admit that this is very important. If a sample of milk has to be analysed by two or three different analysts, and they all use different methods—some of them use the latest improvements, and the others use the oldest worn-out system that could possibly be used—how can we expect concordant results? Yet a man's good name depends upon these results. It may be all very nice and proper to preach it is for the public's good, but charity begins at home.

We want a standard for milk; we are floundering about in the dark, no one knows where we are, even the public analysts themselves are quite as much in the fog as ourselves. If they take a fair honest standard, the case is taken to Somerset House and pulverised; while a few faddists are keeping this standard question open, because it is possible for a few persons to water good milk down to a low limit, we are letting in others at the other end which simply take the wind out of the Act. Fix a standard and we shall know the public will be served with a fair quality of milk, and I know, from experience, when this is the case they are satisfied.

There is nothing said in this Draft of the Sale of Food and Drugs Act about the system to be adopted in cases of disputed analysis. This will be one of the first problems that will have to be solved—how to analyse the referee sample while it is sweet, so that there shall be a fair, honest, and reliable analysis, and this must be done at a price that will bring it within the reach of all, and above all the procedure must be simple, so that all may understand it, and must be such as to place it far beyond the shadow of suspicion; these and many other practical questions of equal importance could be worked out with a Board of Reference having some life, some intelligence, some understanding, being able to give at all times information, keeping diligent watch over the whole business—under this arrangement we should have a guiding power, now we have none.

The Adulteration Act founded upon these lines, and carried out by competent men imbued with a full sense of their responsibility, would have no terror but for the evil-doer.

ZINC IN MOLASSES.

THE adulteration of New Orleans' molasses with sulphate of zinc is again attracting attention. The same question has been brought before the trade in various forms within the past ten years, but reports from various sections of the country now indicate a more vigorous investigation of the methods being practised by New Orleans and other shippers. According to a member of the New York trade, nearly 95 per cent. of the molasses received in this market is adulterated, but on the other hand it is explained that it is hard to sell straight goods, and that molasses is brightened so that it will sell more rapidly. It is denied that the introduction of sulphate of zinc is injurious, and to substantiate this, several houses that deal in large quantities of molasses contend that zinc not only brightens the goods but purifies it. At any rate, the proportion of zinc used, they say, is so small that it is harmless. It is claimed for the zinc that it has peculiar properties which cause all foreign matter to rise to the surface as a scum, which is then cleared off and the molasses is left a pure amber colour. The fact that molasses is "bleached" in order to compete with New Orleans' wholesalers is freely admitted in the local trade.

MR. STEVENS AGAIN!

AT Thames, on January 10th, Tom Felix Stevens, of 79, Malta-road, Leyton, and carrying on business as the Dewsbury Farm Dairy Company, was summoned for selling milk adulterated to the extent of 78 per cent. of water. Mr. Young said the case was about one of the worst that he had ever come across. The milk was purchased from defendant's man, who was crying out "New milk," in Rhodeswell-road, Limehouse. Defendant, who carried on business as the Dewsbury Farm Dairy Company, should have appeared last week, but sent an excuse, saying he had an important engagement elsewhere. It appeared that that engagement was at Southwark Police-court, where Stevens was fined for a similar offence. Mr. Dickinson said he would deal with the case on its merits. Defendant would be fined £12 and 23s. costs. Defendant asked for time, but his request was refused and he was conducted to the cells.

ADULTERATED DUTCH BUTTER.

AT Coventry, on January 10th, Alexander William Smythe, grocer and provision dealer, 1, Bishop-street, was summoned on the information of William Henry Clarke, sanitary inspector, for having sold to him butter adulterated with 25 per cent. of foreign fat. Mr. Beard (town clerk) appeared for the prosecution, and Mr. Wilks (solicitor to the Grocers' Association) for the defendant, who pleaded not guilty. The butter in question, tub butter, was sold to the defendant by Messrs. H. P. Bloomer and Co., Carr's-lane, Birmingham, as pure butter at 11½d. per lb., and retailed at 1s. per lb. Defendant declared in court that he sold it in exactly the same condition as he received it, and said he had never dealt in margarine. Mr. H. P. Bloomer said that his firm supplied the butter, which was invoiced as "Dutch B.C." It was supplied in the original kegs as sent over by the Stoom Dairy Company, Hees, near Rotterdam. The magistrates said that they were bound to convict. Although they exonerated the defendant from any knowledge of the inferior quality of the butter, they regretted that he had not protected himself by a warranty from the vendor. They inflicted a fine of 20s. and costs.

DAIRY FARMERS AND A STANDARD.

A LARGELY-ATTENDED conference between the British Dairy Farmer's Association and delegates from fourteen kindred societies representing the dairy industry in the chief milk-producing districts, was held on January 9th, at 12, Hanover-square, with especial reference to the fraudulent sale of separated milk. As the outcome of the discussion, lasting nearly three hours, it was unanimously resolved to ask Mr. W. S. M'Laren, M.P., to move a resolution in the House of Commons to add words to the instruction in the order for the appointment of the Select Committee on the Adulteration of Foods, to the effect that they should make special inquiry into the source and subsequent distribution of separated milk, with a view to prevent its use as an adulterant of new milk. A further resolution expressed the opinion that all cans and receptacles containing skim or separated milk should be labelled as such, that all establishments where the process of separating milk takes place should be registered, and that a record of the distribution of the separated milk should be accurately kept. The discussion largely turned upon the desirability of Parliament fixing a standard for whole milk, but eventually a motion in favour of this course, and suggesting a standard of "12 per cent. of solids containing not less than 3 per cent. of fat," was defeated by 17 votes to 10, many delegates not voting on the point.

COPPER IN PEAS.

AT Liverpool Police-courts, on January 9th, a summons was heard against Louis S. Cohen for selling preserved peas which had been adulterated. Inspector Baker deposed that on the 14th ult. he bought, through Inspector Adams, a 1lb. tin of preserved peas. He handed it over to the analysts, with the result that it was found to contain 2½ grains of crystallised sulphate of copper. Mr. Stewart imposed a penalty of 20s. and costs.—Richard Rutherford, grocer, 43, Low-hill, was summoned for selling half a pound of tenpenny butter which contained 11½ per cent. of water and upwards of 65 per cent. of foreign fats. He was fined 20s. and costs.—For selling as new milk, milk of the poorest quality, which had been deprived of a quarter of its quantity of cream, Catherine M'Cann, 31A, Ainsworth-street, was fined 10s. and costs.

COCOA WITH 40 PER CENT. STARCH AND SUGAR.

ALBERT FINCHAM, 31, Dean-street, Soho, was summoned at Great Marlboro'-street Police-court, by Mr. T. F. Strutt, Strand Board of Works inspector, for selling cocoa containing 40 per cent. of starch and sugar. Mr. Newton fined him 20s. and costs.

ADULTERATION IN ESSEX.

THE analyst to the Essex County Council reports an improvement in the butters submitted to him for analysis, during the past quarter. He had only certified one sample of lard to be adulterated. During the past year the percentage of adulteration in butter had increased from 10.2 to 23.6, mainly due to the extended working of the Margarine Act. The adulteration of lard was apparently on the increase, beef stearine being very commonly employed. As that constituent was not unwholesome and was chiefly used to give a firm consistency to the lard, he had not certified to adulteration where the proportion was small.

IMPORTANT POINTS *re* ANALYSTS' CERTIFICATES.

MR. G. HAY YOUNG, who appeared in defence of John Herbert Graham, proprietor of the Ship public-house, High-street, Poplar, summoned for selling gin the alcoholic strength of which was deficient to the extent of 4.7 per cent. of proof spirit, argued that the analyst should have put in his certificate the proportion of water and other percentages. All he did was to give the alcoholic strength. Mr. Mead said the objection was a good one, and it was highly desirable all the particulars should be set forth. The summons would be dismissed, with £1 1s. against the Board of Works.—Mrs. Eliza Scotcher, of the Waterloo Hero public-house, Gough-street, Poplar, was summoned for selling whisky deficient in alcoholic strength to the extent of 4.4 per cent. of proof spirit. For the defendant Mr. Bedford took a similar objection. This summons was also dismissed, and Mr. Mead ordered the Poplar Board of Works to pay £1 1s. costs.

NOT GUILTY, BUT DON'T DO IT AGAIN.

JOHN WILLIAM COLLET, wine and spirit merchant, of 185, Commercial-road, Landport, was summoned at Portsmouth Police-court, on January 7th, for selling adulterated gin. Mr. G. H. King prosecuted, and Mr. M. Hyde appeared for the defence. Sanitary Inspector Monckom purchased a bottle of the spirit for 1s. 6d. on December 8th, and on analysis by Dr. Mumby, medical officer of health, it was found to be 41.4 under proof. Mr. Hyde said the law allowed defendant to sell 35 under proof. It was only by inadvertence that he had omitted to place a label on the bottle. The magistrates accepted the explanation, and imposed a fine of only £1 including costs.—George Sewell, wine and spirit merchant, 47, Kingston-road, was similarly summoned in respect of a bottle of whiskey, bought by Sanitary Inspector Gray for 2s., which was found on analysis to be 35.13 under proof. The defence was similar to that in the first case, and defendant when sworn said he told the inspector that the whiskey was good for the price, but was considerably below proof. He thought the inspector was a parson when he called. Mr. Hyde pointed out that defendant had been a license-holder for many years, and formerly kept the Bugle at Titchfield. The Bench thought the evidence conflicting, and dismissed the case, but advised defendant to be careful in future. Defendant said he had ticketed the bottles immediately he had notice.

**DUTCH VINEGAR.
IMPORTANT PROSECUTION.**

IN the Glasgow Sheriff-court, on January 7th, before Sheriff Birnie, Peter M'Intre, grocer, 69, Stevenson-street, Calton, was charged with having, on September 6th, supplied to a sanitary inspector a bottle of malt vinegar which, on analysis, was found to be not of the nature, substance, and quality demanded, and consisted of diluted acetic acid flavoured with about 5 per cent. of malt vinegar. This case is regarded as a most important one, and has been in Court since October. A long debate took place before Mr. M'Intyre was asked to plead, Mr. Salvesan, advocate, Edinburgh, who acted in co-operation with Mr. Barrie, writer, for the defender, arguing that the case was now out of Court, as Mr. Lindsay had written a letter in which he had practically withdrawn the case. On December 31st, Mr. Lindsay, he said, wrote to the effect that the diet had been discharged. To this letter a reply had been sent intimating to Mr. Lindsay that it was questionable if the witnesses from Holland could be countermanded in time, and stating that Mr. Fife would be held responsible for expenses and damages. Another letter followed from Mr. Lindsay intimating that the diet was still open and that the case would still go. Mr. Salvesan, continuing, held that there

was nothing now to go on with. He thought Mr. Lindsay could not be allowed to continue the game of battledore and shuttlecock in this fashion.—The Sheriff: Was he right in believing that the complaint was still before the Court?—Could the prosecutor withdraw the case without the power of the Court? Mr. Salvesan: A public prosecutor could withdraw a case without consent of the Court. An advocate-depute could, even after a conviction had been recorded in a prosecution brought by himself, refuse to move for sentence, and the Court could not pronounce sentence in that case. Mr. Lindsay then stated that he had been willing, on behalf of Mr. Fife, to drop the case, but Mr. Barrie had rejected that proposal, and it now fell to his Lordship in any case to dismiss the summons. His position was this: Mr. Barrie had added something to his proposal that made it impossible for him to adhere to it. He had been willing since October to proceed with the case, but adjournment had been granted to the defender, and to-day, while he was again willing to proceed, he would not for a minute think of objecting to an adjournment. Mr. Salvesan: If Mr. Lindsay could lead his evidence to-day he was willing to put all the witnesses he had available into the witness-box, and the witnesses from Holland and London could be examined at a later Diet. Mr. Lindsay objected to this on the ground that defender would have the benefit of his precognitions. The Sheriff then decided on the first point, namely, whether the case was still in Court, and, after considering the question, held that the case was not out of Court, as the dismissal was not *simpliciter* accepted. Another debate then took place between Mr. Lindsay and Mr. Salvesan as to whether part of the evidence should be led to-day, and his Lordship this time ruled that Mr. Lindsay was bound to proceed. Matthew Kerr, food inspector in Glasgow, said that he asked for a bottle of malt vinegar, which he got and paid 5d. for, and afterwards gave in detail all the facts relating to the purchase. By Mr. Salvesan: He was just going round to see if he could get a prosecution. Witness's evidence was corroborated by another sanitary inspector. Mr. Clarke, city merchant, said he regarded malt vinegar as vinegar made by infusion of malted grain, and not distilled malt vinegar. He did not profess to be acquainted with all the methods adopted by manufacturers in the production of vinegar, but he knew a good many of them. The amount of the saccharine matter was one of the ways of determining the strength of the vinegar. The contents of the bottle in Court only contained 5 per cent. of pure malt vinegar. From malt, vinegar of any colour could be made. He could not affirm that this vinegar was not made from malted and unmalted grain. The dilute acetic acid, might have been obtained either by diluting wood acetic acid, by the fermentation of sugar, or by the conversion of spirits into acetic acid. If pressed by the defenders, he must say it might have been distilled malt vinegar. Dr. Tatlock, city analyst, deposed to having made an analysis of a sample of the vinegar produced. His opinion of it was that it only contained a very small proportion of undistilled malt liquor, and that the remainder was acetic acid or distilled malt vinegar, or a mixture of both the latter ingredients. He really believed that the greater portion of it, however, was acetic acid. The object of the trade in distilling malt vinegar was to make the liquid white, which was in great demand in Scotland. Continuing, Dr. Tatlock said that the portions of saccharine, potash, and phosphoric acid would have been the same as that produced by the present analysis, provided raw sugar had been used for colouring purposes. Samuel Hannah, senior partner of Hannah and Co., pickle manufacturers, Glasgow, said the vinegar which he sold to M'Intyre came from a Dutch firm. They got the vinegar at double the strength at which they retailed it. They diluted it with water to reduce it. When M'Intyre advised them of the prosecution they at once took up the defence of the case, being satisfied that the vinegar was pure. They had been satisfied by the flavour and aroma of the liquid that it was pure malt vinegar. He had been in the trade for thirty years, and had a good deal of experience in such matters. After the dilution of the vinegar the liquid was put into casks and thereafter bottled. He presumed that there was wood acetic acid on his premises, but that was used for a cheap vinegar, and was kept in a different part of the works. This was a white liquid, but it was made brown by the addition of burnt sugar, as some persons liked the brown colour best. Although Scotch people liked white vinegar, everyone was not Scotch, however, and all parties had to get their tastes catered for. The reason why the vinegar was made so strong in Holland was to save the freight to this country. Mr. Fowlie, warehouseman with Hannah and Co., spoke to selling a number of bottles of vinegar to M'Intyre. Daniel Thompson, chemist to Hannah and Co., spoke as to its being his practice to dilute the Dutch vinegar with water. M. De Bejon, managing director of the company in Holland, who supplied the vinegar in question, next gave evidence. Their business, he said, was the largest of its kind in Holland, their output being 1,000,000 gallons annually. Their vinegar was made entirely from malt and unmalted grain. In Holland there would be no gain in using wood acid because duty would have to be paid on it. The Sheriff, after hearing the evidence, said he had no doubt at all that the vinegar was malt vinegar, as stated by M. De Bejon, the managing director of the firm from which the liquid was supplied, and he therefore dismissed the case. The Sheriff, in deciding the question of expenses, referred to the number of these prosecutions which had been brought, and remarked that the Public Prosecutor ought to keep in mind that when he had no case it was just a waste of public money. He thought the defender was entitled to £10 10s. of expenses and ruled accordingly. An appeal was entered.

DRUG ADULTERATIONS.

At the Bristol Police-court, on January 10th, George Stevens, of Old-Market-street, was summoned by Thomas Thompson, an inspector under the Food and Drugs Act, for selling a pound of beeswax containing 60 per cent. of paraffin. The inspector proved the purchase of the wax on December 10th, and said he paid 2s. 6d. for it. The certificate of the analyst showed that it contained 60 per cent. of paraffin. Mr. Cross, who represented the defendant, said his client bought the beeswax as pure from a wholesale druggist in Bristol, who had purchased it from another druggist. They had good reason to doubt the accuracy of the certificate of the analyst, as their own examination, roughly taken, did not show anything like 60 per cent. of paraffin. It was the custom of bee keepers to put a foundation of common wax into each hive, which would account for the smell of paraffin. He desired that the case might be adjourned in order that a sample might be sent to Somerset House for further analysis. The magistrates consented to an adjournment for that purpose. —George R. Heal, of 28, Old Market-street, was summoned on the information of Thomas Thomson, an inspector under the Food and Drugs Act, for selling eight ounces of laudanum which contained only 25-25 per cent. of alcohol, and was therefore deficient in that respect to the extent of nearly 50 per cent. Inspector Thomson spoke as to the purchase, and also produced the certificate of the analyst. The defendant was not present, but one of his assistants, informed the Court that the only way in which they could account for the absence of the requisite quantity of alcohol was through evaporation. They had a very small sale for laudanum, and they had had this particular lot in stock for a long time. The magistrates imposed a fine of 20s. and costs.

IMPORTANT BUTTER APPEAL CASE.

At the Nottingham Quarter Sessions, on December 31st, an appeal by Mr. Charles Smith, grocer, of Newthorpe, near Greasley, against the decision of the Court in a case in which he was summoned and fined £2 2s. and £3 3s. costs for selling butter adulterated with margarine on September 10th, 1894, was heard. The certificate of the county analyst (Mr. Otto Hehner) showed that the butter contained 15 per cent. of margarine. For the defence Dr. Truman (Nottingham borough analyst) and Mr. Coleman (demonstrator in chemistry at Nottingham University College) stated on the result of their analysis that the sample of butter was pure commercial butter and contained no margarine. Mr. H. Y. Stanger (instructed by Mr. Johnstone) was for the appellant; and Mr. Appleton (instructed by Mr. W. E. Bottrill for the Notts County Council, who prosecuted in the first instance) was for the defence. Mr. Appleton, in opening the case, briefly mentioned the facts. He said that on September 10th, Colonel Story, inspector under the Food and Drugs Act, caused half a pound of butter to be purchased from Mr. Smith, at his shop at Newthorpe, and he took it back and divided it into three parts for the purpose of analysis, one part being retained by Mr. Smith. The certificate of the Public Analyst, dated September 28th, stated that the sample contained 85 parts of pure butter and 15 of margarine. He thought the only question which would be before the Bench that day was a question of fact—a difficult question of fact perhaps which depended a good deal upon scientific test—and the result obtained from that, but no question of law was likely to arise in the course of the inquiry. The question was whether, having heard Mr. Otto Hehner on the one side and such witnesses as his friend might call on the other, the Bench were satisfied that Professor Hehner had made a correct and proper analysis. If he had there could be no question that an offence had been committed. Inspector Story gave formal evidence as to the purchase of the butter. Mr. Hehner, under examination by Mr. Appleton, said he applied three tests in his analysis. He first determined the proportion of *bonâ-fide* fatty acids by a method which is called Reichter's method. This depended upon the fact that whilst butter con-

tained *bonâ-fide* fatty acids margarine did not, and that by the addition of margarine the *bonâ-fide* fatty acids must be diminished. He also tested by his own method—the Hehner method—and also tested for stearic acids. In this case all the tests showed that the sample contained a smaller quantity of fatty acids than experience showed should be the case. Pure butter contained none, or a very small proportion of stearic acids; margarine contained a very large proportion. He found a far larger proportion of stearic acids than should be found in genuine butter. On the whole of these processes he came to the conclusion that it was not pure butter. The Chairman (to witness): Do you consider this is a doubtful case?—I do not unless it is clearly shown that this was specially selected butter from cows at the end of the period of lactation. Witness also said that the sample did not show any fluctuation.—Would your third test be influenced by the fact that these cows were near the close of the period of lactation?—It would not. In your experience is it necessary or usual that the margarine mixed would be mixed equally through the whole amount of butter?—It is not necessary. It would much depend upon who did it and how it was done.—Whether it was equally mixed?—As a rule it was run through a mixing machine to equalise it.—If a mixing machine was used it would be well mixed?—Yes. Sometimes it is not mixed. I know a case where the margarine was simply sandwiched in.—Would it be possible for a sample divided into three parts, as this was, to vary very much?—It is conceivable; I would not like to go any further.—Mr. Stanger: So it was the smallest degree probable that you would have obtained different results in the second sample?—It is too problematical. I repeated my test and I found identical results—10.87 and 10.83, which is an exceedingly good agreement.—This concluded the case for the defendant County Council. Mr. Stanger intimated that he was going to call witnesses other than scientific, as it would be important that he should trace this butter to the place from which it came. He should call not only Mr. Smith (the appellant) and his daughter, but also Mr. Wakefield, the farmer from whom the butter was purchased, and he thought the Court would have no doubt that this particular butter had come from Mr. Wakefield's farm. He should also show that the two things which Professor Hehner said would affect his analysis actually existed in this case, one being that the cows from whose milk the butter was made were near the end of the period of lactation. Mr. Charles Smith, the appellant, was then called, and stated that he had been in business as a provision dealer and grocer at Newthorpe for more than thirty years. At the time Col. Story purchased the butter he had only one half pound of fresh butter in the shop, which the inspector took. That came from Mr. Wakefield, farmer, on September 6th. Miss Mary Ann Smith, daughter of the previous witness, corroborated, and said they sold other butter, but they did not mix it. They had never had any margarine in the shop. Mr. Edward Wakefield, farmer, Beauvale, Greasley, said he sold Mr. Smith a pound and a half of butter on September 6th. That butter was as pure as any butter in England. At that time he was milking four or five cows, and the last cow calved either in March or April. He sold a little milk every day. Miss Pridmore, housekeeper to Mr. Wakefield, said she made the whole of Mr. Wakefield's butter, in the making up of which Scotch hands were used. No foreign substance was put into it. She had never used margarine, and did not know what it was. They sold about three pints of milk to one customer each day, and two quarts to another twice a week. Mr. J. B. Coleman said he was an Associate of the Royal College of Science, Fellow of the Chemists' Society, an analytical chemist, and held the post of senior demonstrator in chemistry at the Nottingham University College. He analysed a sample of butter marked the same as that produced at the adjourned hearing, and he came to the conclusion that it was pure commercial butter. He tested by the Hehner and Reichter methods. He found 87.4 of insoluble acids, and 10.6 of volatile acids, which he did not consider incompatible with pure commercial butter. He also

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tested by the polariscope, but he did not regard it as conclusive. Under the polariscope, the presence of margarine caused iridescence, but in this case there was no iridescence. Cross-examined by Mr. Appleton: Although in a book he had issued this year on Analytical Chemistry he stated that "every sample of market butter derived from the mixed milk of a number of cows and requiring less than 12.5 cubic centimetres should therefore be looked upon as adulterated," and notwithstanding that he had stated that in this instance he found 10.6 he still adhered to the statement, and he reconciled the one with the other, first, because the number of cows was small, and, secondly, that these cows were near the close of the period of lactation. He was perfectly satisfied that his analyses were correct and that the butter was pure commercial butter.

Dr. Truman, M.D., and analyst for the borough of Nottingham for the past 20 years, said he analysed a sample of butter received from Mr. Coleman on October 25th. He had only sufficient butter for one analysis, therefore only tried the Hehner method. He found fixed acids 87.115, and he was perfectly sure it was pure butter. Six days after, October 25th, Somerset House refused to analyse the sample submitted to the department as not being fit for analysis. Mr. Stanger then reviewed the facts of the case. He said it would not be fair to Mr. Smith in a case of this importance to rest judgment upon what was a mere conceivability or possibility. The question was, Whether he had or had not made out this butter came from Mr. Wakefield. He was inclined to think that the Court would look upon the two samples analysed by Mr. Hehner on the one hand, and Mr. Coleman and Dr. Truman on the other, as if they were, for the purposes of this case, one and the same. If the adulteration had taken place—which he denied—it must have been done for the benefit of either Mr. Smith or Mr. Wakefield, and yet the evidence he had called disproved the suggestion that there had been adulteration. It was a significant fact that Dr. Truman agreed with Mr. Coleman within the fraction of a fraction, although Dr. Truman's was an entirely independent analysis, and made after Mr. Coleman's. In the face of that fact, it might be presumed that possibly some mistake had been made by Mr. Hehner. An allegation had been made that Mr. Smith had sold adulterated butter, and to meet that charge he had proved, as far as it could possibly be proved, what the butter was, where it came from, and that there was no fraud or adulteration. Mr. Appleton then addressed the Bench for the defence. He said it was true the onus of proof was upon him, but the fact was that Mr. Hehner, by the Act, was *prima-facie* the judge of this question, and on his certificate the magistrates—who devoted a great deal of time to the consideration of the case—could not do otherwise than convict. He did not think it likely that Mr. Hehner, occupying the responsible position he did, would come to the conclusion that this sample of butter contained 90.8 when there was only 87. He thought the decision of the magistrates, arrived at after a long and patient hearing, ought to be confirmed. The Bench retired at two minutes to four o'clock, and returned after an absence of thirteen minutes. The Chairman said: The Court has given very careful consideration to the hearing of this case, and they are unanimously of opinion that the appeal should be dismissed.—Mr. Appleton: With costs, my lord?—The Chairman: Costs will follow.

GETTING AT THE REAL GULPRIT.

AT Lambeth Police-court, on January 10th, Edgar Gillingham, a farmer, of Glastonbury, Somerset, was summoned by Mr. H. T. Wiggs, on behalf of the Lambeth Vestry, for selling, to the prejudice of the purchaser, milk containing added water to the extent of 16 per cent. There was a second summons against the defendant for selling milk containing added water to the extent of 18 per cent., and a third summons for selling milk containing added water to the extent of 30 per cent. Mr. E. Shortt, barrister, defended. Mr. Wiggs stated that on the night of December 13th he went to Vauxhall Station and took a sample of milk consigned by the defendant to a customer. The sample was submitted to the public analyst, who certified it to contain 16 per cent. of extraneous water. On December 20th witness again attended at Vauxhall Station and took two samples of milk consigned by the defendant. One was certified by the analyst to contain 30 per cent. of extraneous water, and the other 18 per cent. Mr. Shortt said the milk was undoubtedly inferior in quality, but the inferiority was due to the flooding of the pasture lands. Mr. Biron: That splendid problem has been dealt with more scientifically by other magistrates, but I regret to say that my genius does not extend so far as to adopt their views. The defendant went into the witness-box and said his land was under water for nearly three weeks. The cows had to go back to the fields which had been under water, and as they did not eat the grass well they were tempted to eat with mangolds, which were rather of a watery nature. The conditions were such as would tend to deteriorate the quality of the milk. Water had never been added to the milk to his knowledge.—Mr. Biron: I think the defence is as thin as the milk. The defendant was ordered to pay penalties amounting to £20 and 48s. costs.

FOOD AND DRUGS WORK IN DERBYSHIRE.

MR. JOHN WHITE, F.I.C., county analyst, reports that during the quarter ending December 3rd, 171 samples of food and drugs have been submitted for analysis—67 by Mr.

F. A. Shortt, 54 by Colonel Shortt, and 50 by Captain Sandys. The samples consisted of the following articles:—Milk, 12; butter, 41; lard, 2; tea, 2; coffee, 15; pepper, 12; mustard, 11; oatmeal, 22; bread, 3; ground ginger, 1; cayenne pepper, 1; sweetmeats, 1; chewing gum, 1; vinegar, 5; whiskey, 17; brandy, 2; rum, 7; gin, 4; white wax, 2; tincture of rhubarb, 6; syrup of rhubarb, 1; paregoric, 1; cream of tartar, 1; tartaric acid, 1. Only one of the twelve samples of milk could be condemned, and that proved to be deficient of 20 per cent. of its natural fat. Two samples of butter were adulterated; one containing 90 per cent. of foreign fat, and being consequently a sample of margarine, while the other contained 20 per cent. of water. This is altogether an excessive amount, and the presence of such a quantity is evidence either of gross negligence or of fraudulent intent on the part of the maker. As a consequence of the excess of water, the amount of actual butter fat present was reduced to 74 per cent., whereas properly prepared butter always contains 80 per cent. or upwards. The loss of value to the consumer becomes apparent when these facts are considered. Three of the fifteen samples of coffee were adulterated with chicory, the respective percentages added being 35, 40, and 50. It is perhaps worthy of remark that up to the present time no less than $\frac{1}{4}$ of the samples of coffee submitted to me have proved to be adulterated with chicory. Like the adulteration of milk with water, this is a form of fraud which may very easily be practised, and unscrupulous vendors may readily obtain a dishonest profit without fear of detection by the ordinary purchaser if they choose to adopt this method of adulteration. Two samples of mustard had been mixed with wheat starch in one case to the extent of 20 per cent., and in the other 5 per cent. The former sample also contained a little turmeric, added as a colouring material. Five samples of oatmeal were adulterated, one with a very small quantity of barley meal, the amount being so trifling that its presence was probably accidental. The other four all contained maize, and I certified to the presence of 3 per cent. of that substance in three of the samples, while the other contained only a small amount; this is to me an entirely novel adulterant for oatmeal, and I cannot find any definite record of its previous use. Some authors state that it is said to have been used, but no particulars are given, and I believe I am the first analyst to certify to this adulteration. Four samples of rum, three of whiskey, and one of brandy had been unduly diluted with water, the amounts added beyond the quantity necessary to reduce the spirits to the lowest legal limit being respectively 4, 7, 12, and 17 per cent. in the case of the rum; 6, 7, and 15 per cent. in the case of the whiskey; and 13 per cent. in the case of the brandy. I returned the remainder of the samples as genuine, but two samples of whiskey and one each of brandy and gin were slightly deficient in strength. Of the six samples of tincture of rhubarb, the large proportion of four did not contain the ingredients required by the British Pharmacopœia. All the four were largely deficient in saffron, one indeed being practically devoid of that substance. Two of these four also contained added water to the extent respectively of 15 and 20 per cent., while another was deficient of 20 per cent. of its solid ingredients. It is obviously of the highest importance that the public should be able to obtain their drugs pure and unadulterated, and it is to be hoped that substantial penalties will be imposed upon the vendors of these articles. The two samples of white wax contained large percentages of paraffin wax, and the sample of chewing gum also contained 35 per cent. of this substance. While the adulteration of white wax is to be deprecated on the ground of fraud, the addition of paraffin wax to chewing gum may be attended with much more serious consequences. Although the compound may not be intended for consumption, it is highly probable that pieces are swallowed by children. As this wax is of a highly indigestible nature, its use as an adulterant in this manner is most objectionable. All the other articles proved to be genuine. The total number of adulterated articles was twenty-eight, which gives a percentage of 16.3, as compared with 13.3 for last quarter. I also received during the quarter fourteen samples of water from sanitary authorities in the county, and have reported the results of the analyses to the Public Health Committee. I have received no samples under the "Fertilisers and Feeding Stuffs Act."

PROSECUTION CASES.

At the Leeds Town Hall, on January 4th, William Saddler, grocer, of 96, Wellington-street, was fined 20s. and costs for selling a pint of new milk on December 12th, which the city analyst certified to contain 25 per cent. of added water. Mr. W. B. Walker, inspector under the Food and Drugs Act, proved the case.

At Spelthorne Police-station, Sarah Cleave, Clarence-place, Hampton Court, was summoned for selling as butter a mixture containing 10 per cent. of foreign fat. Defendant pleaded guilty, but said she bought the "butter" from Mr. Child, of Kingston, with whom she had dealt for many years, and she thought it was pure. Walter Tyler, an officer under the Food and Drugs Act, briefly related the facts, which were of the usual character. Defendant, he said, did not do a very large business. The magistrates did not think it a very serious case, and imposed a fine of 6d., and 9s. 6d. costs, the Chairman informing the defendant that she could take civil action against Mr. Child for selling her the adulterated article.

At Wakefield, on January 4th, Herber Robshaw, 7, Wonder-street, The Grove, was charged with selling milk which was adulterated to the extent of 13·60 per cent. with water. The town clerk (Mr. Hudson) prosecuted; Mr. H. Plews appeared for the defence. Mr. A. B. Whitaker, sanitary inspector, said he bought a pint of new milk from the defendant on December 7th and divided it into the usual three parts. The public analyst, Dr. E. M. Chaplin, certified that it contained 13·60 per cent. of water. Mr. Plews, for the defence, said that in justification of Mr. Blacker, for whom Robson acted as agent, as well as Mr. Long, farmer, Kinsley (from whom the milk was obtained), an explanation was necessary. On the inspector taking a sample of the milk, Mr. Blacker at once spoke to Mr. Long, with whom he had a guarantee of the purity of all milk supplied to him. Long's cowman was spoken to and he then admitted that he had added some water to it on one occasion because the cow, which was a newly-calved one, had kicked over the pail and wasted a portion of the milk. Mr. Blacker's milk had been tested from time to time before, but had never been found wanting. A fine of £1 and costs was imposed on the defendant. The money was at once paid by the farmer.

At the Leeds Town Hall, on January 11th, before the stipendiary magistrate, Mr. C. M. Atkinson, Emily Calvert, 205, Hunslet-road, was summoned for selling milk containing 17 per cent. of added water, and was fined 25s. and costs. Henry Hanson, 267, Hunslet-road, against whom it was said that he sold milk with 15 per cent. of water, was fined a similar amount, and Sarah Ann Wood, 67, High-street, for selling milk with 9 per cent. of water, was fined 10s. and costs. Inspector Walker prosecuted.

At Sandbach, Emma Minshall, Elton, was charged with exposing margarine for sale, and not having the same labelled margarine. Roge Hind, inspector of weights and measures, prosecuted. He stated that he visited defendant's shop on November 24th, and purchased $\frac{1}{2}$ of a pound of a substance which looked like butter at 10d. per lb., and also $\frac{1}{2}$ of a similar substance at 8d. There was no label on the substance to show that it was margarine, but she wrapped it in a margarine paper. He informed her that he should send it to the analyst. The defendant said she did not know that a label was required on the margarine. The Chairman said that ignorance was no excuse, and she must pay the costs, which were rather heavy, 30s.

At Crewe, George Cope, milk-seller, West-street, Crewe, was charged under the Food and Drugs Act, with selling milk, 50 per cent. of its cream being abstracted. Inspector Timmis said he was in Wistaston-road on December 2nd, and saw two boys selling milk. He asked for a pint, and paid 1½d. for it. He divided the milk into three portions. One he produced, another he gave to defendant's son, and the third he sent to the public analyst. The analyst had certified that the milk had been robbed of 50 per cent. of its cream. The milk was sold to him as new. The defendant's wife said she bought the milk, and her sons delivered it to customers. She had no warranty with the milk. The defendant was fined 10s. and costs.

A POINT IN ADULTERATION LAW.

MR. GROVE, a Camberwell dairyman, was summoned by Inspector Kerslake, on behalf of the Camberwell Vestry, for selling milk containing 18 per cent. of added water. Mr. G. W. Marsden, solicitor to the Vestry, appeared in support of the summons. Mr. Moore, who defended, said the offence was alleged to have been committed on November 27th. Section 10 of the Act required that the summons should be served within 28 days from the date of the offence, but this summons was not served until December 23th. Mr. Marsden contended that it was sufficient if proceedings were taken within 28 days. Proceedings were commenced in this case on December 14th. Mr. Biron pointed out that the Act said the summons must be served within 23 days. Mr. Marsden said the first summons was taken on December 14th, well within the time. It was then found that analyst had made a mistake in the date, and a fresh summons was issued. Mr. Biron held the objection to be fatal, and dismissed the summons.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. JAMES LONG'S EVIDENCE.

XXIX.

(Continued from page 16.)

HAVE you anything further to say on any other subject?—I have here a letter from one of the very first analysts that we have, who suggests that 3·25 per cent. is not too high, and that the fat limit might even be raised still higher with advantage to the public; at the same time he is opposed to a legal standard; that is rather curious.—Does he give any reasons for his opposition to a legal standard?—He gives indefinite reasons. One is, as I gather, that he would prefer the matter to be left to the analysts rather than to the Government.—Is there any other point?—I was asked with regard to condensed milk as to the quantity of milk taken to produce a tin of condensed separated milk. It is 3½lbs. of separated milk to make one tin of condensed separated milk; then there is about two-thirds milk and one-third sugar, so that the value of the milk (3½ lbs. being about a third of a gallon) would be about a halfpenny,

or a trifle more, plus the sugar.—Mr. Frye: What would it cost?—The value upon the farm is from 1d. to 1½d. per gallon; that is for feeding pigs or calves; there is no outlet at all for large quantities of separated milk in any other way.—Sir Walter Foster: What would be the price of that quantity of milk as sold to the public?—I am afraid that when it is sold to the public it realises as much as new milk.—You say that to produce a certain quantity of condensed milk, the given quantity that you have named of separated milk is used, and a given quantity of sugar. What do you say would be the total cost of producing that tin?—I think it would be under 1d., including the sugar.—Mr. Frye: Made of pure milk?—Pure separated milk and sugar.—Sir Walter Foster: The retail price is what?—It varies from 3d. to 4d. in accordance with the quantity of fat taken off; 3d. is the lowest price with which I am acquainted, so far as the large tins are concerned; although there are half-sized tins sold at 1½d.—Then the tin of condensed milk which you refer to would cost 1d. to produce?—Under 1d., that is excluding the tin.—And would sell at 3d.?—It would sell at 3d. and upwards.—Mr. Frye: Then there has to be the labour and the cost of carriage?—Yes, labour, carriage, and the tin.—And boxes, and a good many other things?—Yes.—Sir Walter Foster: Does that conclude your evidence?—Yes, that concludes my evidence.—Mr. Jeffreys: I should like to be clear as to what you think the standard of milk ought to be; did I correctly understand you to say that it ought to be 12·4 per cent.?—No.—That was Dr. Veith's analysis, was it?—The first analysis by Dr. Veith with regard to the whole series of years, 1881 to 1884, showed that, taking the analysis by months, the total solids never fell below 12·4 per cent. My suggestion last week was that the standard should be 3·2 per cent. for fat and 12 per cent. for total solids.—Are you aware that several witnesses have given evidence, and they have put the standard at 11·2 or 11·5 per cent. for total solids?—I am not aware of that.—Do you think that a great deal too low?—I think it is ridiculous.—Then the fear would be that a great many people with dairies with poor cows, that is to say, not rich milk-giving cows, would not be able to get up to this standard, would it not?—I think that the fear is quite groundless, because I have shown this morning, I think, that the proportion of poor cows to normal milking cows is very small indeed, probably not more than 1 in 18 which I quoted.—Of course it is not everybody who is able to feed his cows as well as the cows in that dairy were fed. If the cows were fed upon such things as grains, and that kind of poor food, the milk is of a poor quality, is it not?—That is an undecided point. I think that no one who is an expert upon the question of dairy cattle would suggest for a moment that food has any important influence in increasing the per cent. of solids. Food will undoubtedly increase the quantity of milk, and hence the quantity of butter or cheese produced; but that milk is materially improved by feeding, there is nothing to show at all.—Supposing that we fixed the standard by Act of Parliament at 12 per cent. as you suggest, would you prosecute anybody who sold milk under that standard, even if it were proved that it came direct from his cow?—I have already suggested that I would go back to the herd, or to the individual cow, if the owner owned only one cow; but in no case to a single cow if he owned more.—But having ascertained that this milk, which was below the standard of 12 per cent., came actually from this cow, or cows, would you still prosecute the man for selling it as an inferior article?—No, I do not think I would do so, if it was shown conclusively that the milk of the herd bore the same quality.—The appeal to the cow, as the Chairman says, would be good, and you would let the man off?—Yes.—Then what would be the object of fixing a standard at all?—The object would be to compel people to produce milk of a higher quality.—But, if in case it were proved that the milk came from this inferior cow or cows, the man should not be liable for any conviction, then what would be the use of a standard; it would not induce him to keep a better class of cow?—I quite see the point that you suggest. It would undoubtedly guard any provision of that kind very carefully with regard to the health and condition of the cattle, and the food that they received; for, although I do not believe that food has a material influence upon the quality of milk, yet a cow must receive sufficient food to maintain her condition, and hence her milk. Therefore, that point should be very carefully guarded against. I do not believe it would be found once in 500 times that a cow in health and properly fed gave milk anything like so low as the standard which has been suggested by the witnesses.—Therefore, if the milk fell below the standard of 12 per cent., the farmer would be supplying milk under suspicious circumstances, and you would make him prove that it actually did come from the cow or cows?—If the farmer were in question, but the farmer would often not be in question.—I mean going back to first principles?—Yes.—But as a practical man yourself, you would not be afraid of fixing that standard?—I should not be afraid of fixing a higher standard.—You think that it would be a benefit to the farmer as well as the consumer?—I think so.—It is the competition of inferior milk and mixed milk which has so diminished prices. In past years milk in July, August, and September has been from 1½d. to 2d. a gallon higher than it is at the present time; but year after year the milk supply is increasing, and with the increased supply we get an increase in the manipulation of milk, and hence the price is going down until we shall have it presently at half the price, unless something is done to diminish the manipulation.—Did I rightly understand you to say that you would forbid the colouring of milk at all?—I would forbid artificial colouring.—That is only done, I

suppose, by the retail people?—Yes.—And not by the farmer?—No, certainly not by the farmer.—You mentioned something about cream; I understood you to say that there was not much adulteration of cream in London?—No; I gave an instance in which I saw cream being adulterated with milk.—But the Chairman asked you whether it was adulterated with other substances, and I thought you said “No?”—I did not gather that.—Have you any experience of that?—I have had no experience of cream being mixed with anything but milk.—It is very often noticed, for instance, by the ordinary public, that cream in London after you have poured it out, leaves a kind of deposit in the jug, which shows almost that it must have been adulterated?—Would that be the preserved cream.—No, the ordinary cream that you get from a dairyman. You have no experience of that?—I have none at all.—In your former evidence you said that there was a necessity for greater inspection. Do you know what the inspection is in the county in which you live, Hampshire. How many samples of butter, for instance, were procured last year?—I could not tell that off hand. I have the report, but I could not give you the figures.—Here is the return of the Chief Constable, from which I see that in that year only 25 samples were procured?—I can quite believe that.—That is totally insufficient I imagine?—That is the case all over the country, except in certain districts where the authorities are very energetic.—Therefore, any given return with 25 samples procured is absolutely worthless?—Yes.—Then the number of samples of new milk procured were 99?—Yes.—That is very few cases, is it not, considering that Hampshire is a dairy county to a great extent?—Yes.—But out of those 99 samples procured, only 14 were proved to be adulterated. Would you think that taking those two instances there is great need for inspection?—I think so, speaking of Hampshire in particular, I could put my hand upon one or two men that you could fine once a week under the present law.—For adulterating milk?—Yes. For persistently adulterating milk. They do not mind the small fines at the present time at all.—Are these men dairymen or farmers?—Dairymen, retailers.—That is very important. These retailers that you know adulterate the milk, and yet are not prosecuted?—They are not prosecuted.—Then, when you have this bureau of dairy produce at the Local Government Board, as you suggest, all those instances would be referred to them?—I think they should. I should do as they do in Massachusetts, where they have a bureau. I can tell you the details with regard to the regulations of the Massachusetts Dairy Bureau. They not only control the quality of the produce, but they carry out the law with regard to everything connected with the dairy industry: “In the State of Massachusetts a law creating a dairy bureau went into effect on September 1st, 1891. According to the provisions of this law, the bureau in question is placed under the control and direction of the State Board of Agriculture, and its particular duties are defined as follows:—To investigate all dairy products and imitation dairy products bought or sold within the Commonwealth. To enforce all laws for the manufacture, transfer or sale of all dairy products, and all imitation dairy products within the Commonwealth, with all powers needed for the same. To investigate all methods of butter and cheese making in cheese factories or creameries, and to disseminate such information as shall be of service in producing a more uniform dairy product of higher grade and better quality. The law gives the bureau authority to enforce all the laws relating to dairy products; but up to the present it has been only able to deal with the regulations respecting oleo-margarine. These regulations are briefly as follows:—(1) Requirements for branding boxes and tubs, and for marking wrapping-paper, with a penalty for false marking or branding; (2) a prohibition of the use of the word ‘dairy’ or ‘creamery’ on any tub or package; (3) a requirement for licensing dealers and conveyors; (4) a penalty for selling oleo-margarine as butter; (5) requirements for signs on stores and waggons; (6) a prohibition of its sale at hotels and restaurants without notice; (7) a prohibition of the sale of any imitation of yellow butter.” It appears from the “Report of the Dairy Bureau of the Massachusetts Board of Agriculture for the Year 1892,” that, in enforcing these laws, the greatest number of actions that have been brought by the bureau have been against sellers of an imitation of yellow butter. All these actions have been stubbornly contested. Notwithstanding the opposition that has been encountered, the legislation under which the bureau has acted has apparently been of much value in preventing dishonest practices and in restricting the sale of oleo-margarine, which compound has been characterised by the Supreme Court of Massachusetts as a deceptive substance, and one designedly made for the purpose of being passed off for something different from what it is. The bureau also pays great attention to the milk supply, and works in harmony with the boards of health and the milk inspectors in the various cities of the State. This plan has been found to work well, and the bureau now periodically sends out an expert, who attends agricultural societies’ meetings, and institutes and delivers addresses on questions relating to the milk supply and other dairy topics.—With regard to these men that you suspect adulterate the milk, why do not you or some of the public take notice of it by advising the Chief Constable?—I have done so myself, but it is quite useless in many cases to make any suggestion at all; it is like making a suggestion in the past to the chief Government authorities when they have absolutely refused to prosecute.—They take no notice of it?—They take no notice of it.—But do you think that the general public often endeavours to promote prosecutions?—No, I do not think they do.—You imagine that in a general way they take no notice of it?

—Yes.—They think that it ought to be left to paid officials?—Yes.—Therefore, that is one great reason why you would have this bureau for dairy produce established?—Yes.—With regard to margarine, I think you said that you would have colouring altogether forbidden?—Yes, except so far as the slight shade that is conveyed to the margarine by the milk with which it is mixed.—And having forbidden the colouring, did you advocate that there should be specially shaped packages?—Yes.—What would you think about making a certain colour obligatory on the packages?—That was the suggestion put to me before; I had not thought of it myself.—Would not that be better than any special shape of the vessel, or any letters upon it?—It appears to be *prima facie* a very excellent idea; I had not thought of it before.—Do you see much difficulty in the way of imposing such a requirement?—No, I do not see any greater difficulty in that than in imposing a package of a certain shape.—I mean that if there was no more difficulty the colour would catch the eye of the man who went to purchase much more easily than the shape, would it not?—Yes.—With regard to separated milk, I do not think that you have told us much about what we have been told by other witnesses, namely, that there is a good deal of adulteration by mixing separated milk and fresh milk together?—Yes; I gave some evidence last week upon that point.—Many of the witnesses have told us that that is impossible to detect; is that your opinion?—I am afraid that it is, up to a certain point.—The solids would be the same if you analysed them, would they?—No, on the contrary.—Then by analysis you would detect that, would you not?—No, you cannot detect it, because the solids are not a sufficiently clear guide to enable the analyst to denounce the milk for the reason that the fat being above the limit that the analyst accepts, he would not be inclined to condemn it.—Mr. Herbert Gardner: Would there not be an abnormal increase in the non-fatty solids?—Yes.—By that means could you not at least suspect adulteration?—Yes.—But you could not prove it in a court of justice?—I am afraid not.—But I understand that there is an enormous increase in the non-fatty solids when separated milk is mixed with ordinary milk?—Yes, but because the non-fatty solids are increased, I take it that it would scarcely be possible to convict.—But then if that state of things does not occur, does it under any other circumstances, except when it is mixed with separated milk?—No, that is not so by any means.—Then would not that be admitted as a means of proof?—It might be a proof; but so long as a man maintains the fatty solids he is within the law.—Mr. Jeffreys: But if you could not get sufficient evidence to convict, you would not think of prosecuting?—No. The point is that: that the retailer escapes prosecution and conviction, because he maintains the fatty solids.—What other method could you adopt to prevent what is clearly adulteration if you get inferior milk? This separated milk and fresh milk mixed gives an inferior article to fresh milk?—That is a question which I should like to answer generally?—Taking normal fresh milk as containing 3·4 per cent. of fat and 9 per cent. of solids, I should say that if the mixed milk contained less fat and more solids, the mixed milk would be inferior as a food.—Mr. Herbert Gardner: But if it contained the same amount of fat, would it be an inferior article?—Then it is quite equal.—Mr. Jeffreys: But could it maintain the same amount of solids? If you admit that separated milk and fresh milk mixed are as good as fresh milk, most people would mix them?—I do not say that. I put the specific case. Perhaps it would be best to go back to the very first principles. Separated milk contains but a mere trace of fat, perhaps 15; and new milk, taking an average sample, contains 3·4 per cent. of fat. The analyst takes as the standard, as a rule, 2½ per cent., 2·5, below which he will not prosecute. Therefore, if by the admixture of a separated milk containing 15 per cent. of fat with normal milk containing 3·4 per cent., you can produce a mixture which shows the fat above 2·5 per cent., then the seller of that milk is not liable to punishment, although he is producing a food of inferior quality.—And which you say is less nutritious?—Unquestionably; you decrease the fat, you decrease the feeding value of the milk.—Then how are you to detect what I believe is a great method of adulteration; how are you to stop this adulteration?—So long as the fat in the mixed milk is above 2½ per cent. you cannot stop it. The only point which I suggest would be a way of stopping it, is to raise the standard of fat to 3·2 per cent.—Mr. Herbert Gardner: As long as the standard of fat is up to the average, milk mixed with separated milk is just as good as the other milk which has a similar standard of fat?—Yes.—It is only when it falls below the standard of fat that it becomes an adulterated article?—Yes.—Sir Mark Stewart: It depends entirely upon how much separated milk you add to the fresh milk?—Yes.—Mr. Jeffreys: To follow that up, you said just now that separated milk was worth 1d. a gallon?—1d. to 1½d. a gallon.—And we know that fresh milk is worth 6d. to 8d. a gallon; therefore, how can the separated milk be anything like as good as fresh milk?—The difference in value is solely attributable to the loss of fat.—Then I come back to the original proposition, and ask you whether this mixture of separated milk and fresh milk is not in a general way a much inferior article to fresh milk?—If the fatty properties of the mixture are below what they ought to be, then the feeding value is distinctly lower.—Then one object of fixing a standard of milk would be to detect this form of adulteration?—It would be one means of preventing the trade in mixing it.—You think that if the standard were fixed at anything like 12 per cent. of solids and 3·2 per cent. of fats, that would prevent a mixture of separated and fresh milk being sold as fresh milk?—Yes, it would.—Mr. Herbert Gardner: About butter; changes

occur in butters when they have been kept any time?—Yes.—Could you describe what these changes are?—In the first place it depends upon the manner in which the butter was manufactured, whether with pure water, and whether the curdy matter has been removed. The changes undoubtedly are the decomposition of the curdy matter which the butter contains, and, if the water contained any organic matter, the decomposition of that also. Then if sugar is left in the butter, there would be a change in consequence of the conversion of the sugar into an acid.—Do those changes render it difficult to detect the presence of foreign fats?—I do not think so, so far as I know.—In examining a sample of butter, for instance, would it be easy for you to determine what its age was?—Not in all cases.—How near could you get?—That would depend upon the brand of butter and the manner in which it had been kept. For instance, if you take a sample of butter from Australia or New Zealand, kept in a cold chamber, it might be possible for an expert to be so deceived that he would describe it as being newer than butter made in England a fortnight before.—You said, I think, that you thought that margarine ought not to be coloured at all?—I think it should not be.—How would you propose to prevent margarine which is imported from abroad, where large quantities are made, from being coloured, because it might arrive here already coloured?—That is a point of very considerable importance.—Have you any proposal to make on that subject?—I think I have already proposed that, in addition to the specific packages which should be provided, it should all be examined at the port of entry.—And if it was coloured you would not let it into this country?—If it were coloured I would not admit it.—Mr. Frye: Would it not take a considerable time to examine it in that way?—No; in the Cork markets the inspectors daily examine a very large number of casks, and I do not suppose that the opening of the cask and the removal of the whole of the staves, and putting them together again, takes a minute.—But there would be very much larger cargoes of foreign butter?—Yes; but I take it that the staff would be increased in proportion.—Mr. Herbert Gardner: And I think you said, in telling us what the practice was in foreign countries, that in New York no foreign substances whatever was allowed in the milk?—In New York State.—Any foreign substance whatever was considered to be adulteration?—In the milk any foreign substance whatever was considered to be adulteration.—Is not milk sometimes coloured with annatto?—Yes.—Are not also preservatives sometimes put into milk like boracic acid?—Very commonly, indeed.—Would you recommend in this country that that law should be applied, that any foreign substance in milk should be considered as adulteration?—No, I would not.—Because it would apply to preservatives, I suppose?—Yes; I think preservatives really do prove to the trade and the farming classes of very considerable value, without hurting the public at all. I do not think, so far as infants' foods are concerned, that it is very wise to give children preservatives.—Therefore the law, as practised in New York State on that subject, has not got your approval?—Not upon that point.—I want to ask you how much cream it takes to make a pound of butter?—That is impossible to answer.—You are quite certain?—It is quite impossible.—Has it never been tried?—Many times; but it is impossible to answer the question. I will give you my reason. There is no standard of quality of cream, and there is no possible means of devising a standard, because cream rises under all conditions upon milk, and you may take by the separators from 7 per cent. up to 50 per cent. if you choose, and call it cream. Similarly, if you allow milk to stand in the air for the cream to rise, it entirely depends upon the temperature whether cream is thick or thin, whether it is large or small in quantity.—Have you given any evidence about adulteration of cream?—Only incidentally.—Do you know whether cream is adulterated very much in the metropolis?—I said I did. I said I knew it was mixed with milk.—But you do not know of any other foreign substances being mixed with it?—Excepting preservatives.—Have you ever analysed any cream?—No, I am not an analyst.—Sir Mark Stewart: With regard to the colouring of margarine, in Denmark the law is that it should not be coloured, is it not?—Yes.—And I suppose there is no difficulty experienced there?—Not the least.—We get a very large quantity of margarine from Denmark, do we not?—No, we get butter from Denmark; not any margarine.—Holland is the chief country of margarine exportation?—Yes, Holland is the chief culprit.—But it is in order to prevent fraud in butter, is it not, that the Margarine Act prevents margarine being coloured in Denmark?—Yes.—If margarine was uncoloured, and if it was differently labelled, you think that that would be a sufficient preventative against its being sold in this country as butter?—I think, if it were uncoloured, and mixing prohibited, we should have nothing to complain of at all.—Could the retail seller mix it without putting the margarine and butter through a certain class of machinery?—He could, but I do not think it would be likely that he would.—Then, in fact, margarine would take the place of being used only for cooking purposes?—Not at all; I think it would be largely consumed by the poorer classes, as it is now.—Although it was perfectly white?—Although it is perfectly white. I think it would be used to a larger extent because of the reduction of price.—You do not think that that would spoil the sale?—Not the least; I think the sale would be enhanced.—I think you said that the consumption of margarine in this country was about 5lb. per head of the population?—No; I said that I believed, from the figures that I worked out, that the sale of Dutch margarine was equivalent to 5lb. per head of the people in this country.—Dutch

margarine alone?—Yes.—And then there is a large exportation from other countries, from America, for example?—Yes, from several countries.—So that it would come to great a deal more than 5lb. per head?—Unquestionably.—Do you think that margarine lowers the price of home-made butter in this country?—I think that is one of the very things that it has done.—Do you think that margarine and what they called filled cheese, that is, skim milk cheese, lowers the price of good cheese in this country?—I should not like to suggest that it has done so much, because the sale of filled cheese is not very much yet; it is a growing trade.—Farmers object to it?—Yes; farmers object to it very much.—Do you think that they have good reason for objecting to it?—Yes, very good reason.—Would you have any shape given to packages that contain margarine in order to secure facilities for passing it through the Customs?—I think there should be either a shape fixed somewhat similar to the shape of the Danish tubs or Swedish boxes (the Swedish are oblong and the Danish are oval) unless the colouring of the boxes, which has been suggested, were adopted.—Have they had much difficulty, so far as you know, in America with regard to the adulteration of butter and margarine?—Very considerable difficulty.—Of both substances?—The adulteration of butter with margarine.—I do not know whether you gave evidence in regard to the registration of milk sellers, and butter and margarine sellers?—With regard to margarine I did, but not with regard to milk.—You think that they all ought to be registered?—I believe that at the present time the milk seller is supposed to be registered. I do not think he is?—And his premises are supposed to be examined, but they are not in many cases.—You think that that would prevent adulteration?—I think it would not only prevent adulteration, but would prevent outbreaks of disease in many cases from the sale of milk kept in dirty premises and in dirty vessels.—And would you advise the course to be adopted?—With great rigour on farms as well as retailers' shops.—That, you propose, should be done at the instance of the Board of Agriculture?—I think that the Board of Agriculture would confer a great benefit upon the whole community by doing something of that kind.—Have you been asked any questions about tuberculosis?—No; it was mentioned last week incidentally.—Is your opinion that tuberculosis does much harm to the milk-drinking populations?—I am afraid I am not in a position to answer that question, but that the disease has done much harm to farmers I am quite aware; I have suffered very seriously from that myself.—I suppose that a great many instances have come under your cognisance of tuberculosis in cows?—Yes. I should like to make a remark upon the point to this effect, that a farmer has an outbreak of tuberculosis amongst his cattle, and he does not know what it is; a cow, perhaps, is taken ill; she gradually declines, and ultimately dies, or is slaughtered; then she is succeeded by others, and cow after cow is taken ill, and either sold or dies. But the farmer suffers the loss.—They milk very heavily too, do they not?—Yes.—When they are almost at death's door?—Yes. The farmer is unwilling to slaughter the cow until the very last; he is unwilling to refrain from milking her, because he cannot afford it; and the consequence is that tuberculosis is distributed from farm to farm by the cows sold, and in all probability to people by the milk drunk.—It vitiates the milk that is sold to people?—I suppose so. Mr. Herbert Gardner:—There is a Royal Commission on Tuberculosis; have you given any evidence before them?—No; I have no evidence upon the point except as to the very serious losses entailed.

(To be continued.)

CORRESPONDENCE.

NEWFOUNDLAND.

To the Editor of FOOD AND SANITATION.

SIR,—In 1890, at the request of the late Mr. James Beal, then chairman of the Markets' Committee of the London County Council, I submitted reports to this body as to the fish supply of the metropolis. Had the Newfoundland fisherfolk adopted these, my proposed plans of *Technical Education*, they would not now have some 2,000,000 dollars' worth of stored fish rotting in and about their island, nor would the colony be now paralysed by a prolonged commercial crisis, caused solely by industrial ignorance of the scientific principles and practice of the fish trade. The following details briefly sum up the means to keep fresh, healthy fish *imperishable*:—(1) Immediately on capture bleed and gut before blood-clotting. (2) Immediate *pithing* for large valuable fish like salmon. To pith is to remove the brain with a gutting knife, and then to pass, say a stiff, clean wire, up the spinal canal to break up the marrow. (3) Rapid abundant cleaning inside and outside with fresh, cold, flowing sea-water, so as to remove, as far as possible, parasites and their eggs, bacteria, blood, offal, dirt, etc. (4) Drain off the moisture, and let the excess of animal heat and the stiffness (*rigor mortis*) pass off in dry, airy, cooling places. (5) Absolute DRY air refrigeration. Chemicals, water, moisture, including damp air, fog, ice, and melting ice, each rots and ruins dead fish. Chemicals or antiseptics which "preserve" fresh food injure digestion. Of course, salting, drying, curing, smoking, preserving in oil fats, vinegar, spices and other familiar methods of household cookery are not here included as chemicals.—I am, Sir, yours, etc.,

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Food and Sanitation.

SATURDAY, JANUARY 26TH, 1895.

THE FERTILISERS AND FEEDING STUFFS ACT.

WHEN Mr. Herbert Gardner was wasting the time of the House of Commons with this wretchedly drafted measure, we pointed out that any Act to suppress adulteration that is optional is just so much waste-paper. The follow-

ing discussion shows what a fiasco Mr. Gardner's pet measure is in Norfolk. We may mention that the results have been even more meagre in other counties:—

Mr. Harvey Mason, referring to the report of the Executive Committee, relative to the duties of the County-Analyst under the Fertilisers and Feeding Stuffs Act, said he hoped that the committee would see their way to dispense with the services of Mr. Sutton at an earlier date than that suggested. The whole of the money had been most unfortunately thrown away, through so little having been done under the Act. The only people who had had anything analysed were the chairman and a few members of the Executive Committee. He moved that the engagement be concluded. Mr. Clare Sewell Read said he rather wondered that a gentleman who wished to spend £700 a year for the services of a public analyst should object to paying the moderate sum of £100 a year to Mr. Sutton, especially after the very generous way in which he met the case. The agreement with Mr. Sutton still held good, and any *bona fide* farmer in the course of the next three months could have any sample of feeding stuffs or manures analysed at the cost of half-a-crown. Mr. Harvey Mason had said that nothing had been done. There had been little done under the Act, and *anyone who knew how unworkable it was did not wonder at it.* Thirty-seven samples of feeding stuffs had been sent to Mr. Sutton since his offer was made. In the course of the next three months, if farmers had any money to spend, they would spend some of it on artificial manures, and, perhaps, a good many samples would be analysed at the ridiculously low fee of half-a-crown. Mr. Oldman hoped the motion would not be adopted. The first paragraph of the report was most satisfactory, so far as the trading interest of the county was concerned. Mr. Pratt having suggested that the committee further advertise the fact that samples would be analysed at the low fee named, Mr. Harvey Mason's motion was rejected.

The lesson to be learnt from this is that any Act that is not compulsory, and that does not provide for the taking and analysing of samples, is not worth support from those who wish to suppress adulteration.

VIN MARIANI.

It is probably known to many of our readers that the zeal with which the law has been administered in America had among its recent results the arrest of a well-known Cincinnati druggist on the charge of having violated the pure-food law by selling Mariani's wine of coca, commonly known as "vin Mariani." The Pure-Food Commission's chemist, Professor Charles T. P. Fennel, held that the preparation was "not up to the standard within the meaning of the law." The law says: "An article shall be deemed to be adulterated within the meaning of this Act: (1) If, when sold under or by a name recognised in the United States Pharmacopœia, it differs from the standard of strength, quality, or purity laid down therein. (2) If, when sold under or by a name not recognised in the United States Pharmacopœia, but which is found in some other pharmacopœia standard work on *materia medica*, it differs materially from the standard of strength, quality, or purity laid down in such work. (3) If its strength, quality, or purity falls below the professed standard under which it is sold."

The Commission's procedure, hasty and summary as it seems to have been in this instance, attracted wide attention by reason of the copious references made to it in the newspapers, and on account of the great esteem in which the preparation had been held for many years. Consequently M. Mariani and his associates and representatives in business suffered an injustice—unintentional, no doubt, so far as the commission and its chemist were concerned, as is shown by the fact that Professor Fennel has since acknowledged formally that an error was committed.

CONDENSED MILK UNFIT FOR FOOD.

AN important case under the Public Health (London) Act has been decided at the Thames Police-court. James Pretty, a costermonger, was summoned for exposing for sale on a barrow 43 tins of condensed milk, the contents of which were unfit for the food of man. Walter Reeve, dealer, of Spring-garden-place, Mile End, was summoned for selling the tins to Pretty, and Mr. G. F. Hearn, manager to Messrs. Cleeve Brothers, 69 and 70, Mark-lane, was summoned for selling five cases of the condensed milk to Reeve. Mr. Muir, barrister, prosecuted on behalf of the Poplar Board of Works; Mr. Bedford, solicitor, represented Reeve; and Mr. Elliot, barrister, appeared for Hearn. The evidence showed that Reeve purchased the milk from Mr. Hearn at 4s. a case, each of which contained 48 tins. Some of these Reeve sold to Pretty, or allowed to have on commission, at 1½d. a tin. It was denied that the milk was sold by Mr. Hearn for manufacturing purposes. On behalf of Mr. Hearn it was contended that his firm, *prima facie*, were not persons who would intentionally place on the market goods in unsound condition. It was thought Reeve was in the confectionery line, and that the goods were sold him for manufacturing purposes only, and under the belief that all the bad tins would be selected from the good and thrown away. Messrs. Cleeve were the largest manufacturers of condensed milk, and their weekly turn-out was about 10,000 cases. Mr. Hearn had no idea the tins were to be offered to the public. Mr. Hearn, in reply to Mr. Muir, said the returned goods were re-condensed. Mr. Dickinson, dealing with the summons against Mr. Hearn, said the tins when brought to that court were unfit for food, and then the question arose, were they for sale for human food? He held they were, and there must be a conviction. Pretty would be fined 5s.; Reeve would have to pay £5 and 2s. costs; and Hearn would be fined £20 and £5 5s. costs.

The *Pall Mall Gazette* says:—"Mr. Dickinson had on Saturday to clear up his own mind on a very pretty question. If a manufacturer of condensed milk sells it to a dealer at a penny a tin, and the dealer sells it to a costermonger at three-halfpence a tin, and the costermonger sells it to the public at a price not stated, and it is unfit for human food, ought the manufacturer to be fined £20? Mr. Dickinson thought yes, but the manufacturer dissented from that view. His point was that the condensed milk was not sold for human food, but for the making of confectionery—a subtle implication with which we are disposed to agree. He also thought that the bad tins (for anything that appeared to the contrary they were all bad) would be thrown away, although it is contrary to human experience that a dealer should throw away that which he has just paid a penny a tin for. Another part of the defence was that the manufacturer turned out 480,000 tins a week. It is an appalling thought, even if it were all good."

A CURIOUS DECISION.

A CASE of importance to chemists and druggists has been decided by the Brentford Bench. Mr. F. Freeson, a High-street chemist, was summoned under the Food and Drugs Act for selling a quantity of tincture of iodine which it was alleged was not of the substance and quality demanded. It was urged by Inspector Tyler that the drug was not the ordinary tincture of iodine prescribed by the British Pharmacopœia. After a lengthy argument the Bench dismissed the summons, on the ground that they did not consider that there were any fraudulent intentions on the part of the defendant. Technically, however, they said that Mr. Freeson had made a mistake. He was asked by the inspector for a certain substance and sold a different one.

WHO WAS THE INDEPENDENT ANALYST?

AT Southwark, on January 16th, George Leader Rayment, a dairyman, of No. 17, Camilla-road, Bermondsey, appeared before Mr. Fenwick to an adjourned summons, taken out at the instance of Chief Inspector Thomas, of the Bermondsey Vestry, charging him with having sold a pint of milk adulterated to the extent of 25 per cent. with added water. Mr. Thomas stated that when the sample of milk purchased at the defendant's shop was submitted to the public analyst he certified that it was adulterated to the extent of 25 per cent. of added water. When the summons came on for hearing the defendant disputed the analysis, and stated that he sent the sample of milk left by Mr. Thomas to his own analyst. This gentleman was called, and he deposed that the sample he analysed was pure milk, and so far as he could see it would be impossible for two analysts to be so divergent. Mr. Thomas then elected to submit the sample which he produced in court to Somerset House. Upon the case being called on, Mr. Thomas produced the Somerset House analysis, which agreed with that of the public analyst, viz., an adulteration of 25 per cent. The defendant called two witnesses, who swore that the sample left by Mr. Thomas was the one given to the analyst. Mr. Fenwick fined the defendant £4, and 23s. costs.

THE DUTCH VINEGAR CASE.

ACTING on the advice of counsel, Mr. Fyfe, sanitary inspector of Glasgow, has decided not to proceed with the appeal intimated at the close of the case, reported in last week's issue, in which Mr. P. McIntyre, grecer, 69, Stevenson-street, Caithness, was charged with selling malt vinegar containing diluted acetic acid. It will be remembered that Mr. Sheriff-Substitute Burnie assolizied the respondent, and allowed him £10 10s. costs.

DRUG PROSECUTIONS.

THE SALE OF TINCTURE OF IODINE.

AT Brentford Petty Sessions, on Saturday, before General Tremenhore (Chairman), Sir George S. Meason, and Messrs. M. Sharpe, G. G. Mackintosh, J. Allen Brown, A. S. Montgomery, and other justices, Frederick Freeson, chemist and druggist, of High-street, Brentford, was summoned by Inspector W. Tyler, under the Food and Drugs Act, for "that he did unlawfully sell to the said Walter Tyler, to his prejudice, a certain drug, to wit, tincture of iodine, which was not of the nature, substance, or quality demanded by the said Walter Tyler, it not being ordinary tincture of iodine as prescribed by the British Pharmacopœia. The defendant appeared in person. Inspector Tyler, in stating his case, relied on the *dictum* in *Knight v. Bowers*, and said it was only necessary to prove that the tincture was either not of the nature, or substance, or quality demanded. He was conducting the prosecution with a view to teaching chemists that they must prepare drugs according to the standard of the British Pharmacopœia, and that they must follow no other guide. To support this view he quoted the 54th section of the 21 and 22 Vict., requiring "the General Council to prepare a book, called the British Pharmacopœia, in which the manner of preparation of medicine and compounds shall be laid down." He admitted, however, that this section had not been incorporated into the Food and Drugs Act of 1875 (a subsequent measure), though, according to Bell, an authority, the sub-committee which framed the Act advised it should be. The evidence showed that a sample of tincture of iodine was bought by the inspector's assistant and handed to the inspector, who, astonished at the light colour of the compound, asked if some mistake had not been made, to which the defendant rejoined that there were two kinds of that particular tincture. The legal formalities were carried out, and the certificate of the analyst, Mr. E. Bevan, read: "The sample is not ordinary tincture of iodine, as prescribed by the British Pharmacopœia." The defendant did not dispute the certificate, but urged that it did not go so far as it should, and give the specific gravity of the component parts of the sample. Mr. Bevan was called to support his certificate, and, questioned at some length by the defendant, said that he was so astonished at the readiness with which he arrived at his decision, that he wrote Inspector Tyler inquiring if a mistake in the description of the compound had not been made somewhere. It not being part of his duty to do so, he did not go into the specific gravity of the sample, but it lacked one essential to real tincture of iodine, and that was free iodine. It was simply decolourised tincture of iodine. The whole of the foregoing evidence was corroborated by Mr. Robert Watts, of Apothecaries' Hall, London, past president of the Sheffield Pharmaceutical and Chemical Society, and late lecturer upon pharmacy to the Sheffield School of Pharmacy. He carried the case further by deposing that there was only one official preparation known as tincture of iodine; that in question was decolourised tincture of iodine. The former should consist of half an ounce of iodine, half an ounce of potassium iodide, and a pint of rectified spirit. Defendant's drug was of little value, practically valueless, and was what was known, vulgarly, as an old woman's remedy. Questioned by the defendant, he at once admitted that there was an authority known as the British Pharmaceutical Conference, whose opinions were fit for recognition by chemists. In 1889 or 1890 they published a formula for decolourised tincture of iodine. If anyone asked him for white iodine he should give them decolourised iodine, the cost of making which was greater. It was asked for occasionally, and generally stocked by chemists. The defendant, availing himself of the powers under the Act, elected to be sworn. His evidence was that he believed the inspector's assistant asked for white iodine, and he supplied this, taking the precaution to put on the bottle a label, "Prepared according to the British Pharmaceutical Conference." He had a right to sell the drug as it was sanctioned by that conference. It was possible the label could not be seen when the bottle was wrapped up. He did not mark the bottle "white iodine" because he considered the label sufficient intimation of its distinction from the ordinary brown iodine. Mr. J. A. Brown, one of the magistrates, in view of the difference in the medicinal qualities of the two compounds, thought that the use of the word "white" was important, so that the public should not be misled. The defendant, in reply to Inspector Tyler, admitted that the British Pharmacopœia was the standard by which drugs should be dispensed, but when told that he had been selling iodine not in accordance with such authority, did not answer, except to say that the public liked it and asked for it, as it did not discolour the skin so much as the brown tincture. The Chairman, in giving the decision of the Bench, said: "The majority of the magistrates consider there has been no fraudulent intention on the part of the defendant. Technically, he has made a mistake, and we were in doubt if we should not fine him for making the mistake. He was asked for iodine, and gave a different substance, but we—or the majority—do not think he did so with any idea of fraud. The summons is dismissed, but we think the county officers did quite their duty."

PARAFFIN WAX IN BEESWAX.

ON January 9th, at the Bristol Police-court, before Messrs. Sparke Evans and E. B. Colthurst, George Stevens, shopkeeper, of Old Market-street, was summoned under the Food and Drugs Act for selling one pound of beeswax containing 60 per cent. of paraffin. Inspector Thomson said that on Dec. 10th he called at defendant's shop and purchased one pound of the best beeswax, paying 2s. 6d.

The analysis showed that it contained 60 per cent. of paraffin. Mr. Cross, for the defence, said that Stevens bought the beeswax as pure from a wholesale druggist in Bristol, who purchased it from another druggist. They had good reason to doubt the accuracy of the analyst's certificate, their own analysis, roughly taken, not showing anything like 60 per cent. It was usual for bee-keepers to put in a hive a foundation of common wax, which might account for the smell of paraffin. He asked that a sample might be sent to Somerset House for analysis. The magistrates agreed to this being done.

LAUDANUM DEFICIENT IN ALCOHOL.

ON January 9th, G. R. Heal, of Old Market-street, Bristol, was summoned for selling 8 ounces of laudanum containing only 25-25 per cent. of alcohol. Inspector Thomson bought the laudanum on December 10th and had it tested. An assistant from defendant's shop suggested that the alcohol had evaporated, the liquid having been kept in a corked jar. There was only a small sale for it. Fined 20s. and costs.

THE PUBLIC ANALYSTS AND THE SALE OF FOOD AND DRUGS ACT.

AT the annual meeting of the Society of Public Analysts, held on January 16th at Burlington House, the retiring president, Sir Charles A. Cameron, M.D., in his valedictory address, expressed the hope that the labours of the Select Parliamentary Committee which sat last year and was about to be reappointed would result in recommendations leading to more stringent enactments for the regulation of the sale of articles of food and drink. A great deal of the evidence laid before the Committee during the last Session had emanated from witnesses more or less closely connected with the vending of such articles as the Sale of Food and Drugs Act dealt with, and it was therefore not surprising that the evidence so far had not wholly been in favour of increased stringency in the suppression of adulteration. He hoped, however, that the evidence which the public analysts—who had yet to be heard—would lay before the Committee would convince them that to relax the provisions of the present rather weak Acts would not be to the advantage of the public at large. The Council of the Society of Public Analysts had drawn up its recommendations in the form of a draft Bill, which had been the outcome of long and careful deliberation and consideration, and he trusted that the outcome of the Parliamentary Committee's deliberations would be the adoption of a Bill substantially similar to that submitted to them by the Society. Some legal provision for the laying down of authoritative standards was in his opinion highly important. The address, on account of the detention of the president in Dublin, where the continued prevalence of small-pox kept him at his duties as medical officer, was read by Dr. Bernard Dyer, honorary secretary to the society. Dr. T. Stevenson, F.R.C.P., the official analyst to the Home Office, was elected president of the society for the ensuing year.

REFRESHMENT BAR MILK.

AT the Dorchester Police-court, on January 14th, Beatrice Gould, barmaid in the employ of Messrs. Spiers and Pond at the South Western station, was charged with selling milk adulterated with added water, on December 12th. Mr. J. P. Grain (barrister) appeared for the defence on behalf of Messrs. Spiers and Pond. Supt. Devenish said he bought a pint of new milk from the defendant at the station bar, and informed her it was for analysis. Defendant said the milk had only just arrived, and if there was anything wrong with it she had done nothing to it. Dr. Comyns Leach, county analyst, proved that the milk was adulterated with at least 5 per cent. of added water. No cream had been abstracted; it was rather rich in cream. Mr. Grain said they had a warranty from the purveyor of the milk (Mr. Lock, of Dorchester) to supply pure and unadulterated milk. Several witnesses, including Mr. Lock, were called to prove that the milk had not been tampered with. The Bench dismissed the case.

ADULTERATING OLIVE OIL WITH CASTOR OIL.

OLIVE OIL is found to be frequently adulterated with castor oil. It is even claimed that the olive, especially if it has become strong-smelling or rancid, is improved by the addition. As much as 20 per cent. of the adulterant may be added without detection. An Italian expert says its presence may be discovered by taking 10 c.c. of the suspected oil, mixing it with half its volume of hydrochloric acid, and then shaking them together in a test glass graduated to 0.1 c.c. If any castor oil is present the liquid will separate on standing into three well-defined layers, the lowest of which will be the hydrochloric acid, the top the olive, and the middle the castor oil. This test may also be used with sesame, cotton-seed, colza, carlinut, and linseed oils.

EXCESS WATER IN IRISH BUTTER.

JOHN WEBSTER, Market-street, Hebden Bridge, was charged at Todmorden, on January 11th, with having sold butter adulterated with water. Mr. Edgar, of the firm of Messrs. Bootle, Edgar and Sons, Manchester, appeared for the defendant. Mr. Brutton, who appeared to prosecute on behalf of the West Riding County Council, said the facts of the case were these: On Wednesday, December 5th, the inspector went to the defendant's shop and bought a pound of butter, for which he paid 1s. At

the same time the inspector told defendant that the butter was for analysis, and, after being divided into three separate parts, a sample would be sent to the public analyst. A sample was sent to the analyst, and his certificate was afterwards sent to Mr. Crabtree, the inspector. The certificate said that the butter was genuine, but it contained 21 per cent. of water, which was an excessive proportion. The average proportion of water used was from 10 to 12 per cent. Thus the butter in question contained 5 per cent. of water in excess of what was allowed. The present proceedings were taken under sections 6 and 9 of the Food and Drugs Act, which stated that no person was allowed to sell to any purchaser any other substance than what was demanded, otherwise such person was liable to a penalty not exceeding £20. The clerk said the inspector was supplied with butter, and that was what he asked for. Mr. Brutton said it was butter in an adulterated state, being mixed with water. They were not allowed to mix butter with water to a greater extent than 16 per cent. The analyst of course said it was genuine butter, but that it was excessively mixed with water. Mr. Crabtree, the inspector, gave evidence bearing out the foregoing statement. He added that when he entered the defendant's shop he saw some butter marked 1s., and he asked for a pound of it. Mr. Barker: You did not ask if it was genuine?—Witness: No.—Mr. Brutton said that Dr. Bannister, deputy principal of Somerset House, had stated that 16 per cent. of water was the maximum quantity of water allowed to be mixed with butter.—Mr. Edgar said the latter point was one which required to be thrashed out. The defendant was a perfectly innocent seller of butter. He bought the butter in his ordinary course of trade, and sold it over the counter. The butter in question was Irish butter. It was cheap butter, and the same price was not paid for it as was paid for Danish, English, or Normandy butter. It was for salt butter, which was largely used in Lancashire and Yorkshire, and was not very well within the recognition of the London analyst. It had been difficult for some time past to tell what amount of water was actually allowed to be mixed with butter, that point having been brought before different courts. It had become so difficult and important at the present time that there was a commission sitting in the House to consider the point. It had been appreciated that the question of having water in butter was very little understood, especially by the public analyst. Some time since it was presumed to set up a standard limit for the water, but the Somerset House would not agree, and to-day there was no standard as to how much water should be used. There might be expressions of opinion, but that was all. The indication of the Irish analyst as to the extraction of water from butter was different to that of the English people. In December, January, or February of last year, similar cases to this were fought out at great length before the Manchester stipendiary; seven days were devoted to the trial, and after all the principal analysts of the kingdom had been called, the summonses were dismissed. Some were then summoned for adulterating butter with 21½ per cent. of water, and others with 20 per cent.; that was what the certificates showed. However, Mr. Headlam came to the conclusion that he could not convict, and since that time there had been no similar prosecutions in the Manchester district. Mr. Headlam intimated that it was a matter for legislators to decide. The evidence which was now being given before the commission was for the purpose of arriving at some standard which would be binding as to the watering of butter. There was a great difference indeed between fresh-made butter intended to be consumed immediately, and the Irish salt butter, which was for keeping during the winter months. He (Mr. Edgar) strongly appealed that, pending the result of the commission, it would be hardly the right thing for the Bench to convict a man under the circumstances, but it ought to be left undisturbed until some final legislation had been decided on. Dr. Bannister had said that there was no fixed standard. Under the Food and Drugs Act the prosecution had to prove that something had been added other than what was natural to the butter, and unless that was done the Bench could not convict. The Irish butter contained salt, which naturally caused a larger percentage of water than otherwise.—The clerk asked if there was no limit as to the quantity of salt in the butter?—Mr. Edgar said that was not the question. If salt was added to an abnormal extent the butter was not saleable. There had been no indication on the part of the prosecution that anything had been added to the butter, not even by the analyst's certificate. In a firkin of butter the actual quantity of water was never distributed all over alike; one particular portion might contain 21 per cent., and another might contain 10 or 12 per cent.; thus water was unequally distributed over the butter. Devon and Dorset butter contained a large quantity of water, Mr. Edgar giving different percentages. Mr. Edgar submitted that the defendant had honestly bought and sold the butter, and was as innocent as the inspector himself.—In a statement made by the defendant, he said the butter was sold as he received it. On the tub end were the words, "Irish butter."—Mr. Brutton: If the butter had contained 50 per cent. of water, you would have sold it?—Defendant: The butter was sold to me as right; I did not know what there was in it.—Mr. Edgar: Did you ever hear of any butter containing 50 per cent. of water?—Defendant: No.—In answer to the chairman, defendant said he had sold the same kind of butter for 14 months. With very little consultation with the other magistrates, the Chairman announced that the case had not been proved and would be dismissed.

COPPER IN BOTTLED GREEN PEAS.

At the Bristol Police-court, on January 11th, Samuel Shirley, grocer, of Redland, was summoned for selling, to the prejudice of William Parfitt, one bottle of pickled green peas, which was not of the nature, substance, and quality of the article demanded by the said purchaser; that was to say, were not green peas as demanded, but contained a certain ingredient, to wit, 0.205 grains of copper, equivalent to 0.82 grains of sulphate of copper, such ingredient rendering the article sold injurious to health. There was also a second summons for adulteration connected with the same case. Mr. J. Inskip appeared on behalf of Mr. Shirley. Inspector Parfitt, one of the inspectors under the Food and Drugs Act, said that at 11.45 on December 12th, in company with Constable 29 C, he visited the shop of Mr. Shirley, at 119, White Ladies'-road. Mr. Inskip said they admitted selling the bottle of peas, and the assistant-clerk might take the evidence as shortly as he pleased. The witness, proceeding, said he purchased a bottle of pickled green peas, for which he paid 10½d. After the purchase was completed he told the assistant, William F. Tupman, who served him, that he was an inspector appointed under the Food and Drugs Act, and he had purchased the peas for the purpose of analysis. He divided the purchase into three parts. One part he left with Mr. Tupman, one he submitted to the public analyst, and the other he produced with the analyst's certificate. Mr. Inskip objected to the analyst's certificate, and he gave notice that he wished the analyst to give his evidence *videlicet*. Mr. Braithwait (deputy clerk) said they could not go on until either the certificate was put in or the analyst was there to give evidence. Mr. Inskip said he had promised to send for the public analyst when the case commenced. It was afterwards agreed that the certificate should be put in on the understanding that the analyst should be allowed to give evidence in chief. In cross-examination, the witness said he bought the peas as pickled green peas. He had seen pickled green peas before, though he did not remember to have seen bottles of that kind previously. When he asked for a bottle of pickled green peas, he obtained from Mr. Shirley's assistant exactly what he had expected. He saw the notice of pickled green peas in one of Mr. Shirley's circulars. He, however, did not go out with the intention of going to that shop. He had seen bottles of peas in grocers' windows other than Mr. Shirley's. He could not explain why he made the visit to Mr. Shirley's shop on the day in question. He did not remember ever being told that pickled green peas were more or less coloured with copper or sulphate of copper. The reason he had bought the peas was because he had seen bottles of peas—large and nice ones—in the windows of grocers; he thought perhaps there was something in them which did not agree with the consumer, and he decided to buy a bottle. Mr. Inskip: Did you put them to a practical test?—No, I did not.—Mr. Inskip: That would have been more to the point. I think you would have enjoyed them very much.—Cross-examination continued: He was not aware that similar cases had been lengthily investigated in Liverpool, and decided in favour of the grocers. He had not heard of similar cases in Scotland. No one suggested to him to get the peas in question. He thought the peas were coloured when he made the purchase.—Do you, in the depth of winter, expect to have peas green, without colouring?—I am not in the grocery trade myself.—Did you, as a man of common-sense, expect really to have peas green, without artificial colouring?—It did not make any difference to me.—Mr. Inskip: You did not eat them. If you had, it would have made no difference, except to have given you an additional pleasure in life.—Mr. Arthur Baker: Let him speak from experience.—Mr. Inskip: I would rather appeal to your worship's experience.—Do you say that, when you saw those peas green, you did not believe that you were receiving peas that were artificially coloured?—I did not know anything about the matter.—Don't tell me such nonsense as that, for a man in your position thinks about such things. Did you believe, when you saw those peas, that they were artificially coloured, or not?—I certainly believed that they were artificially coloured.—Don't you know that any man of common-sense would have formed the same opinion?—Yes.—It was agreed to dispense with the evidence of the constable who accompanied the inspector when he made the purchase.—Mr. F. W. Stoddart, the public analyst of the city, was called, and said on December 12th he received a jar of peas marked 72 C from Inspector Parfitt. The result of the analysis was that he found the peas, which weighed 4oz., were coloured with copper, of which there was the presence of 0.205 grains, or about 2-10ths of a grain, equivalent to 8-10ths of a grain of sulphate of copper. Replying to Mr. Inskip, the witness said he gave the certificate produced to the inspector. He had thought about the question as to whether the colouring for pickled peas was injurious. He had read up the opinion of many eminent experts upon the subject, and agreed with some of them. He had heard of Professor Fraser, of Glasgow, and Dr. Dougall, and had read the arguments on both sides of the question as to whether the colouring was injurious. You admit there are two sides to the question?—I admit it. In answer to other questions, the witness said that medical evidence was divided on the question as to whether the colouring of pickled peas was injurious. Do you know any case where this colouring has been prejudicial to health? Have you ever heard of such a thing in your life?—No.—Does not that strike you as singular?—No, not at all. It is the most

natural thing in the world.—That things which are injurious in theory are harmless in practice?—I do not agree with that.—Is not that a fair paraphrase of your evidence?—No.—Have you ever heard of such a case?—No.—You get all sorts of complaints, as public analyst, from people who think they have grievances about food—reasonable and unreasonable?—Yes.—How long have you been analyst?—Fourteen years.—During those 14 years, has anyone complained to you about these peas being injurious?—No.—Do you know, as public analyst, that for the last 14 years peas have been openly sold, not only by Mr. Shirley, but by all other grocers?—Yes.—And also that they have been supplied by eminent Bristol citizens to their guests?—No.—Has it ever been suggested that there has ever been any real injury from the colouring—in the experience of life, not in the laboratory or the study of scientific men?—No; but may I say you misrepresented me just now? When I said it was the most natural thing in the world that it should not have caused injury, what I meant was that peas are rarely taken alone as an article of diet. They are taken with other food at meals, and any subsequent derangement of health may be attributed to any number of things rather than to the peas. I should, however, prefer to attribute it to the green peas.—Mr. Arthur Baker: You mean that several people may eat these peas, and if they find themselves unwell they do not think it is due to the peas?—Yes.—Mr. Baker asked if the question was not if the substance contained in the peas was injurious to health.—Mr. Inskip: That is the point.—Mr. Baker: You are trying to show that no one is injured because no one has been made ill by the peas.—Mr. Inskip: The question is not whether the sulphate of copper is injurious to health, but whether the peas are. If it becomes necessary I will bring you some very eminent men indeed, who will prove the contrary. If your learned clerk, Mr. Gore, had been here, I should suggest he would be a very good witness. In answer to other questions, witness said he had read of similar prosecutions in the North of England and Scotland, and eminent witnesses were called on both sides. He knew that a good many medical men had given evidence that tinned peas were not injurious. He believed that a similar case had been dismissed in Liverpool, and that a Glasgow case had also been dismissed on going to the High Court at Edinburgh.—You have known the sale of these peas for years past?—I have known that they have been sold.—Have you any doubt that they were coloured artificially?—As a matter of fact, I had no doubt.—Mr. Arthur Baker: Must green peas at this season be coloured with something?—No.—Mr. Inskip: Have you ever known green peas that did not require artificial colouring?—I have kept them so myself for some months.—Have you ever known pickled green peas as an article of commerce without they have been coloured in some way or other?—No, I have not.—Is it not your opinion that a person asking for a tin of pickled green peas and receiving them green would know that they were coloured?—I do not think so.—Mr. Inskip suggested that a jury of matrons would be a very good one to try that case. In reply to further questions, the witness said he disagreed with those medical authorities who said that the copper was not extracted during digestion. The copper was chiefly on the husk of the pea. He did not consider the husk was insoluble. He knew that a commission was sitting at the present time upon the Food and Drugs Act, but he did not know whether the matter in question was one of the points before them.—Mr. Inskip: I believe you have been met in a very fair way by Mr. Shirley, who has handed you an entire bottle in order that you might make an analysis of it?—Mr. Shirley has done all he could in the matter.—Have you found the total of sulphate of copper in a bottle?—The amount is two and a half grains.—You are not singling out Mr. Shirley in this case as an example?—No, not in any way. I have always said that I never give any instructions for analysis. I have nothing to do with the collection of samples. I simply analyse what is brought. This was the case for the prosecution, and it was agreed that the summons of adulteration should be dropped, and Mr. Inskip should be asked to answer the summons under Section 3. Mr. Inskip said he understood that there were other cases in process for preparation for their worships or some of their brother magistrates. His client wished to deal with the matter once and for all, so that it might be afterwards understood—if the decision should be averse to selling those articles—that any one who continued to do so would be committing an offence, and all the grocers would be on the same footing. On the other hand, it was held that no offence was committed, Mr. Shirley and his fellow-tradesmen would know their position. Under the circumstances, he asked for an adjournment, for the purpose of bringing eminent witnesses who had made the matter their study, and who would be prepared to give their evidence and explain their theories to the bench in a complete and, he believed, satisfactory manner. He had tried to get one down from Glasgow in time for that day, but he was not able to do so. Mr. Baker said it would have been more convenient if Mr. Inskip had stated at the commencement that he intended to ask for an adjournment, as now the case for the prosecution was completed, and their mouths were closed. Mr. Inskip pointed out that they could call rebutting evidence. He thought the course he suggested was the best. Inspector Parfitt said he should have to ask that the police should have a solicitor to appear for them if the case were adjourned.—Mr. Arthur Baker said he thought that would be the best course to adopt. In answer to Mr. Braithwait, Mr. Inskip said he had no objection to the prosecution calling scientific witnesses at the adjourned hearing. It was then agreed to adjourn the case till January 25th.

SUNDAY MILK.

At the Wallasey Petty Sessions, James Jones, cow-keeper, Victoria-road, Seacombe, was summoned by the inspector of the County Council for selling milk which was adulterated with 7 per cent. of water, on December 9th. W. J. Hallard, inspector under the Food and Drugs Act, said on Sunday morning, December 9th, he saw a boy employed by the defendant delivering milk in Victoria-road, Seacombe. He asked him for a pint of new milk, for which he paid twopence. He told him it was for analysis, and divided it in the usual way. One portion was taken to the analyst, whose certificate, which was now produced, stated "This milk is adulterated with 7 per cent. of water. No change has taken place in the constitution of the sample that would interfere with the analysis." Mr. Jones said he never thought there was anything wrong with the milk. They were obliged to purchase milk, and that was the way the milk was wrong if it was wrong.—The Chairman: We understand that, but you are responsible. Can you give us any evidence that you purchased the milk as it was? It may be someone in your employ that has tampered with it.—Mr. Jones: My wife handles it, and she is very careful. The presiding magistrate said they believed Mr. Jones had the best intention in this matter, but he must exercise the utmost caution that he gave the article he professed to sell. They would fine him 10s. and costs—altogether £1 4s. 6d.—though personally they believed he had no intention to adulterate. The penalty ran as high as £20, so that he would see the importance which the legislature attached to an infringement of the law.—James Spragg, dairyman, Wallasey, was summoned for selling milk which was adulterated with 5 per cent. of water on December 9th. Mr. Hallard deposed to purchasing, on the same date, a pint of new milk from the defendant. A sample was submitted to the analyst, who certified that the milk was adulterated with 5 per cent. of water.—The Chairman: Is it supplied from your own cows?—Defendant: No. I have a cow, but she is dry. I buy my milk. It comes from Moreton. I am supplied by a boy in a farmer's cart. I give the milk as I get it.—The Chairman: We believe that. It is not adulterated to the same extent as the other, but the offence is practically the same. We fine you 10s. and costs—£1 4s. 6d. altogether.—Francis Simpson Nash, dairyman, 141, Victoria-road, Seacombe, was summoned for selling milk which was adulterated with 10 per cent. of water, on December 9th. Mr. Hallard deposed to purchasing a pint of new milk from the defendant in Byerley-street, on the Sunday in question, and submitting a sample to the analyst, who certified that the milk was adulterated with 10 per cent. of water. Mr. Nash pleaded not guilty, and said he got a certificate with the milk and thought he was safe. He had never been brought up before, and had been there five years. The certificate which he handed in to the Bench read as follows:—"I, Parry-street, Seacombe. This is to certify that all the milk I supply to you I warrant to be pure as it comes into Birkenhead station. John Lucy."—Mr. Solly (magistrate's clerk): What does it mean by "pure as it comes into Birkenhead station"?—Defendant: That is indefinite. He gets it from the country.—The Chairman: I am afraid that doesn't help you. You may perhaps have an action against the person if you can prove that the milk has not been tampered with on your premises. This is only a guarantee that it is in the same condition as when it comes into Birkenhead station. The analyst shows a heavy percentage of water, and we must fine you 20s. and costs. You must take your own course with regard to the person who supplied you.—The Defendant: I cannot come again, can I?—The Chairman: I cannot advise you as to that.

MUSTARD ADULTERATION.

At Heanor Petty Sessions, on January 21st, Thomas Fancourt, grocer, etc., Langley Mill, was summoned by Captain Sandys for unlawfully selling, on December 10th, three ounces of mustard containing 10 per cent. of wheat starch and a little turmeric. Defendant admitted that his wife sold the article, but contended that it was obtained in an unfair way. A $\frac{1}{2}$ lb. canister of Colman's mustard was opened for the purpose of supplying the 3oz. and of course it was sold as Colman's mustard. He produced the tin from which the article was taken. His wife sold it in error. The certificate of analysis was produced, and the Bench having perused a pamphlet sent out by the Local Government Board as to the quality of canistered mustard, considered that there had been only a technical breach of the Act, and no intention to defraud on the part of the defendant. The case was dismissed on payment of the analyst's fee. Mr. Sandys said the Bench placed him in a peculiar fix, as there was no conviction. Subsequently the Bench reiterated their belief that there was no intent to defraud, but that the canned mustard was of better quality. Under the circumstances they would inflict a fine of 1s., with 10s. 6d. analyst's fee, and remit the remainder of the costs.—William Thorpe, grocer, etc., Ray-street, Heanor, for whom Mr. F. Cattle, solicitor, appeared, was similarly charged, the mustard in this instance not being Colman's. Mr. Cattle contended that it was a pure accident, and that the manufactured condiment was sold at 1s. 6d. per lb., whereas genuine mustard could be sold by his client at 1s. per lb. The Bench stated that they could not believe such was the case, especially considering the present price of flour. Defendant was dealt with as in the last case, being fined 1s., with the analyst's fee, 10s. 6d.

PROSECUTION CASES.

At South-west London, on January 21st, Walter Bishop, an oilman, carrying on business at 44, York-road, Battersea, appeared to answer a summons, at the instance of the Vestry of St. Mary, Battersea, for selling olive oil adulterated with 90 per cent. of nut oil.—Mr. W. W. Young supported the summons, while Mr. George F. Bell represented the defendant. Mr. Bell contended that the summons must fail, as the inspector who made the purchase did not inform the vendor that he required the oil as an article of food or a drug. In order to bring the defendant within the provisions of the Food and Drugs Act, it must be stated by the purchaser whether he required it as an article of food or a drug. Olive oil was largely used for machinery. Mr. Denman disagreed with Mr. Bell, observing that a purchaser was entitled to receive what he asked for. It was like going into a public-house and asking for a bottle of whisky, and receiving instead a bottle of brandy.—Mr. Bell, while admitting that the Act of Parliament was a useful one, thought shopkeepers should not be entrapped. It was clearly the duty of a purchaser to state the purposes for which he required the oil. Mr. Denman did not think tradesmen were entrapped. He imposed a penalty of 4s., with 12s. 6d. costs.

At South-west London, Mr. T. Broderick, a member of the Lambeth Vestry, carrying on business as a dairyman, at 28, Springfield-parade, Wandsworth-road, was summoned, before Mr. Denman, by the Wandsworth District Board for selling milk which was adulterated to the extent of 10 per cent. of added water. Mr. W. W. Young supported the summons, and produced the analyst's certificate showing the extent of the adulteration. The defendant said he could not account for it in any way. Other samples had been taken before. Mr. Denman imposed a penalty of 40s., with 12s. 6d. costs.—Mr. Denman was engaged a considerable time in hearing a summons against Day's Southern Drug Company, of High-street, Streatham, and elsewhere, for selling beeswax adulterated with 50 per cent. of paraffin wax. Mr. W. W. Young supported the summons, which was taken out under the Food and Drugs Act, on behalf of the prosecutors, the Wandsworth District Board; while Mr. Blanchard Wontner represented the defendants. Mr. Denman inquired if beeswax could be considered a drug? Mr. Young said the definition given by Webster was that beeswax was a drug used for medical purposes. The wax was also classified in the British Pharmacopoeia as a drug. Samuel Smith, the inspector who made the purchase, denied having stated that he meant to catch the chemists, as he had failed to convict oilmen and grocers. Mr. Oliver Field, the medical officer of health for Clapham, described the wax as a drug, and said it was used as a basis for three medicinal preparations. In answer to Mr. Wontner, the doctor added that his reason for describing the wax as a drug was because it was mentioned in the Pharmacopoeia. He undoubtedly called salt a drug, also sugar, starch, and brandy. Those things were also mentioned in the Pharmacopoeia. Mr. Wontner argued that the wax was not a drug, remarking that it was largely used for laundry purposes. He pointed out that Dr. Field had admitted that the mixture would not do any harm, and he (Mr. Wontner) thought the money of the Board would be better spent in other directions. Mr. Denman believed it was a drug, and that the purchaser was prejudiced in making the purchase as he did not get what he asked for. He imposed a penalty of 40s., with £1 3s. costs.

At Kensington Petty Sessions, Mr. Chambers Leete, clerk to the Kensington Vestry, appeared to support two summonses against A. Mickelburg, of Elm-park-parade, Fulham-road, for exposing and selling margarine as butter. Herbert Hawkins, an inspector in the service of the vestry, having proved the purchase, the defendant (a female) said she bought the article from a Mr. White, who assured her that it was pure butter. The Bench inflicted cumulative penalties to the amount of £8, with costs. The Chairman, in reply to the defendant, who asked if she might have the sample analysed for the edification of Mr. White, said she might do what she liked with it. The matter was concluded so far as that Bench was concerned.—Messrs. Jenkins Bros., Hans-place, were summoned for selling margarine without a proper label, and for exposing the article for sale. H. Hawkins, inspector under the Food and Drugs Act, said the tub from which he purchased the sample was labelled "choice Dorset." The defendant, who said he was of opinion that all he was required to do was to inform purchasers that the substance sold was margarine, was fined 10s. in each case, with costs.—S. Maynard, of Southam-street, North Kensington, was summoned for exposing for sale, for selling, and for delivering the article in a paper not bearing the name of the article, a substance, to wit, margarine. Defendant did not appear, but was represented by Mr. Ricketta, jun., who stated that his client was at home with rheumatism; he was simply a pavior in the employ of the Marylebone Vestry, and his wife looked after the business.—A. Ellenden, inspector in the service of the vestry, having proved the purchase, and Mr. Chambers Leete having proved a previous conviction, the Bench inflicted fines amounting to £4, with costs, and declined to state a case, telling the learned gentleman that he might appeal if he liked.—John Holmes, of Appleford-road, was summoned for exposing and selling margarine. Fined £3, and costs.

At the Farnham Police-court, on January 17th, Matthew D. Peare, milkman, of Camberley, was summoned for selling milk adulterated to the extent of 16 per cent. of added water, at York Town, on the 12th ult. Mr. Jackson defended. Mr. Frederic Cliffe, inspector under the Food and Drugs Act to the Surrey County Council, deposed to purchasing from defendant's servant, Archibald Moore, a pint of new milk, for which he paid 2d. The county analyst, Dr. Stevenson, had since certified that the sample contained added water to the extent of 16 per cent. In answer to Mr. Goodall, witness said the analyst based his return upon the lowest quality of milk, and he said that there was 16 per cent. of added water. Mr. Jackson said his client had carried on business for 20 years at Camberley, and for the last ten years he had had his milk from Mr. Hollings' farm at Watchetts, Frimley. It would be denied by the cowman and the lad Moore, that the milk had been tampered with, and he (Mr. Jackson) would ask the Bench to say that the water in the milk was due to the cows, which, being shorthorns, yielded large quantities of milk, but not of rich quality; also to the cows being fed on cabbages and turnips which would tend to increase the water, and to the cows being four months stale. Further, the milk had never been in defendant's possession having been taken on the rounds as soon as received at the farm. Defendant, Archibald Moore, and William Voller, carman, bore out Mr. Jackson's remarks. The Chairman said the Bench unanimously decided that in the face of the certificate they were bound to convict. They regretted very much that they had not had all the help they might have had in the way of defence, because it was perfectly easy for the defendant to have had the analyst in court, as he should have done. One of the cows might also have been milked in defendant's presence, and a sample sent for analysis. A fine of 20s. and 18s. 6d. costs was imposed.

THE SANITARY INSTITUTE.

A SESSIONAL meeting of the Institute will be held at the Parkes Museum, on Wednesday, February 13th, at 8 p.m., when a discussion will be opened by George Vivian Poore, M.D., F.R.C.P., on "Dry Methods of Sanitation." The chair will be taken by Sir Thomas Crawford, K.C.B., LL.D., Q.H.S., M.D.

ALCOHOL IN TEMPERANCE DRINKS.

MR. A. W. STOKES, the public analyst for the parish of St. Matthew, Bethnal Green, mentions in his report to the vestry that during the last quarter there had been submitted to him for analysis eight temperance beverages, consisting of hop ale, non-alcoholic stout, lemonade, ginger beer, ginger stout, and ginger wine. Except the last, all of these were genuine, containing mere traces of alcohol, ranging from two-tenths to nine-tenths of a per cent. of proof spirits. But the sample of ginger wine, bought at a shop at which temperance beverages only were supposed to be sold, contained 10 per cent. of proof spirits. This is about twice the alcoholic strength of ordinary beer supplied at public-houses. The Sanitary Committee considered this a case for the Excise rather than for prosecution under the Food and Drugs Adulteration Act; hence no proceedings were taken.

LEEDS AND THE FOOD AND DRUGS ACT.

THE following is Mr. Thomas Fairley's report on analyses made under the Food and Drugs Act, 1875, for the city of Leeds during the quarter ended December 3rd, 1894:—"The samples received have been—Milk, 60; skim milk, 1; butter, 3; cocoa, 1; tea, 1; dripping, 1; tinned pears, 1; ground ginger, 4; potted meat, 2; marmalade, 1; total, 75. Nine of the samples of milk were adulterated with 25, 17, 16, 15, 14, 10, 9, 8, and 9 per cent. of water respectively, as compared with the lowest quality of natural milk; and eight were reported to be of low quality. The sample of tinned pears was adulterated with tin and zinc, containing over three-quarters of a grain of tin and half a grain of zinc per pound. The other samples were reported as genuine." The inspector has taken legal proceedings and secured fines in all the adulterated cases of milk.

DISPUTED ANALYSIS. PROSECUTIONS FAIL.

AT Long Melford Petty Sessions, January 18th, W. T. Mullen, grocer, of Melford, appeared on adjournment for selling 1lb. of coffee adulterated with chicory. The county analyst reported 6 per cent. of chicory; a London analyst reported pure coffee. The Bench at the time decided to send the sample to Somerset House, who pronounced it pure coffee. The expenses of the analyst and costs of the case are to be paid by the county. Mr. Mullen asked for his expenses, but these were not allowed.—Robt. Clark, of Glemsford, grocer, was summoned for selling adulterated butter. Mr. Bates prosecuted, and Mr. Elliston, of Cambridge, defended. The report from the county analyst showed 10 per cent. of foreign fat but the public analyst of Cambridgeshire and Huntingdon declared it was pure butter. The butter was supplied from Messrs. Holland and Bond, of Cambridge, who give a warranty on their invoices. They receive their butter from New Zealand with a warranty. The case occupied a long time, and was ultimately dismissed by the Bench.

ADULTERATED PRECIPITATED SULPHUR.

AT the South Shields Police-court, on January 18th, Messrs. Mason and Co., South Shields, were summoned for selling precipitated sulphur certified by the public analyst to be adulterated with 63 per cent. of hydrated sulphate of lime. The town clerk prosecuted, and Mr. C. W. Newlands defended. Michael James Pollock, inspector of food and drugs, said that on December 17th he sent into the defendant's shop in Green-street an assistant to purchase some precipitated sulphur. When he came out with the packet witness went in with him, and told the shop assistant that he proposed to divide the sulphur into three parts, and send one to the public analyst for examination. He did so, and received a report from the public analyst, which stated that it contained 63 per cent. of sulphate of lime, which was a foreign ingredient. A clerk from the medical officer's department said on the day in question he went, at the request of the last witness, to the shop of Messrs. Mason and Co., and asked for some precipitated sulphur. He received a packet containing three ounces, for which he paid 3d. Witness gave it to Mr. Pollock, and they both returned to the shop. Mr. Pollock then said he was going to divide it into three parts, and send one of them to the public analyst to be examined. Dr. Turnbull, medical officer, said precipitated sulphur should not contain any foreign ingredient; it should be pure, and therefore free from sulphate of lime. Mr. Newlands, in defence, contended that the proceedings should have been taken against the actual vendor. The company were not responsible. He further said the article supplied was milk of sulphur, and not precipitated sulphur. After due consideration, the Bench considered the case proved, and a fine of 20s. and costs was inflicted.

SENSIBLE FINES FOR SELLING DILUTED WHISKEY.

BEFORE Sheriff Robertson at Forfar, on January 17th, William Balharry, Globe Inn, Forfar, was charged, at the instance of Mr. Anderson, sanitary inspector for the county, with having, on Thursday, November 28th last, in a tent in the square at Letham, sold a quantity of whiskey which was more than 25 degrees under proof, an offence within the meaning of Section 6 of the Sale of Food and Drugs Act, 1875. Accused pleaded guilty, and on his behalf Mr. M'Nicoll, solicitor, said that he understood that the whiskey sold was 4½ degrees under the standard, the reduction having simply been caused by the addition of water. The Sheriff: When a man drinks whiskey and water he likes to pay for the whiskey and not for the water. Mr. M'Nicoll explained that the reduction had been caused by a servant, and although tested by an instrument it was afterwards found that the instrument was not in good working order. The Sheriff remarked that it was a question what was good working order. The mistake was in accused's favour. Mr. M'Nicoll submitted that the offence was not a serious one. Mr. A. W. Myles, county clerk, pointed out that while accused was entitled to add 25 per cent. of water, in this case 29½ per cent. had been added. It was a very serious thing indeed to adulterate any sort of food or drink, but seeing this was the first time for many years that prosecutions had been brought in the county under this Act, he did not desire to press unduly against accused. He further pointed out that the expenses incurred by the case were between £3 and £4, and any penalty inflicted by his lordship would cover these expenses. The Sheriff said that it was his duty to protect the public against offences of this nature. When the public paid for a good article they were entitled to get it. It was also his duty to inflict such a penalty as would deter others from following such an example. The full penalty was £20, and he did not think it could be said that he was pressing the case hardly in imposing the half of the penalty, namely, £10.—William Norrie, Balmoral Hotel, Fricockheim, was charged with having, in the Balmoral Hotel, on Wednesday, November 28th, sold to Mr. Anderson whiskey more than 25 degrees under proof. Accused pleaded guilty, and in his behalf Mr. James Cargill, solicitor, Arbroath, stated that the sample was bought on the market day in Fricockheim. Mr. Anderson went into the bar and asked for a bottle of whiskey, and asked that it be taken out of a particular barrel. He was told that that was the cheapest whiskey they sold—namely, at 2s. 9d. per bottle, or, in other words, 6d. a gill. Mr. Cargill remarked that there was no doubt the whiskey was, as the analyst described it, 29 instead of 25 degrees under proof. The offence was committed on market day, when the house was exceedingly busy with farmers, farm-servants, and others, and in the hurry the barrel had been added to during the forenoon, and certainly reduced more than 25 degrees under proof. The Sheriff: In the hurry? There is no excuse in that.—Mr. Cargill: I am putting it forward as a mitigation.—The Sheriff: Is it a mitigation that it was done in a hurry?—Mr. Cargill: I think so. Mr. Cargill said that it was entirely a mistake on the part of his client, who was sorry that it had occurred. It was simply water that had been added, and he pointed out that the difference between 25 per cent. under proof, and 29 per cent. under proof was about two glasses of water per gallon. His lordship said he could make no distinction, and imposed a fine of £10.—William Balharry, Star Hotel, Fricockheim, was charged with a similar offence, committed also on Wednesday, November 28th. He pleaded guilty, and, as in the other two cases, a fine of £10 was imposed.

CHEESE CONTAINING 80 PER CENT. OF FOREIGN FAT.

At the Wigan Borough Police-court, John Foster, of the Market Hall, was charged under the Sale of Food and Drugs Act, with selling to the prejudice of Inspector Sumner, a pound of cheese which was not of the nature and substance demanded by the purchaser. Mr. Sumner stated that on December 7th, 1894, he visited the defendant's shop and sent a young woman in for a pound of cheese. After being divided in the usual way a portion was submitted for analysis, and he produced a certificate showing that the cheese contained 80 per cent. of foreign fat. The defendant said it was marked in the shop as "Valley-field oleine cheese;" but the Bench held that he sold the pound as pure cheese, and fined him 10s. and costs.

SUPPLYING ADULTERATED MILK TO THE WORKHOUSE.

At Stoke-on-Trent, on January 18th, Matthew Darlington, Highway Farm, Keele, and his servant, William Bromley, were summoned by Mr. Knight, inspector under the Food and Drugs Act, for selling milk which was adulterated with water. Mr. Ashmall appeared for the defence. It was stated that the purchase was made from the defendant Bromley as he was delivering milk at the Spittals Workhouse, under a contract which his master had with the Guardians. The county analyst certified that the sample submitted to him was adulterated to the extent of 10 per cent. of water. The defence was that the milk, when purchased by the inspector, was in the same condition as when taken from the cow, and it was stated that the public analyst of Manchester, to whom the defendants' portion of the sample had been submitted, had certified that, although a poor quality of milk, it would pass as genuine. The defendant Darlington was fined 40s. and 19s. 6d. costs, and the summons against Bromley was withdrawn.

ADULTERATED MILK TEEMING WITH MICROBES.

At the Edinburgh Sheriff Summary Court, on January 18th, Thomas Dewar, dairyman, Hunters' Tryst, Colinton, was charged with having on December 12th, sold to Robert Lindsay, County Council Inspector, three pennyworths of sweet milk which had been adulterated. The accused pleaded guilty to his boy selling the milk, but not guilty to adulteration. Mr. Lindsay, the inspector, gave evidence to the effect that at Colinton, on December 12th, between seven and eight o'clock in the morning, he had asked Dewar's lad for threepenny-worth of sweet milk for analytical purposes. At first the lad demurred, because his milk was scarce, but afterwards gave it to witness. Witness told the boy the mode of procedure was to divide the milk into three parts for analysis, and asked the boy to take a part, which, however, he declined to do. He delivered the sample to Mr. Hunter, county analyst, the same morning. An assistant inspector gave corroborative evidence, and Mr. John Hunter, county analyst, said he had examined the sample and found that it contained at least 13 per cent. of water, and he was of opinion that the water must have been teeming with microbes, and that it had been taken from a bad well. The accused, who was not defended by counsel, said that he had lost a cow, and that he had to buy milk which his boy supplied to some odd customers of his own. He always supplied his own milk to his regular customers, and it was never mixed. The accused produced testimonials from customers in the district which showed that they were quite satisfied with the milk they got. No witness appeared for the defence, and the Sheriff found the charge proven, and fined the accused £5, with £3 expenses. Mr. John Stewart, solicitor, conducted the prosecution on behalf of the county inspector.

THE SELECT COMMITTEE ON ADULTERATION.**CONTINUATION OF MR. JAMES LONG'S EVIDENCE.**

XXX.

(Continued from page 24.)

SIR MARK STEWART: Do you know the percentage of loss in an ordinary farm by cows afflicted with tuberculosis?—Very often it is 10 per cent., I know. Inspection by skilled inspectors would, to a great extent, prevent the retention of those cows, and the distribution of their milk.—Can you detect the germs of tuberculosis in the milk?—I do not suppose that that is possible.—Then the remedy would be to inspect the cows?—Yes; and you require very skilled inspectors, because, to my knowledge (I have evidence upon the point), I do not like to reflect upon any class of men, but local veterinary surgeons are not always competent. I have seen cases in which cows were passed as healthy, and subsequently they have died at a very early date from tuberculosis.—That would entail a great many inspectors to go round the country, would it not?—Yes.—Mr. Kilbride: Is it the fact that there is a great difference in the percentage of tuberculosis in dairies, according to whether it is a country dairy or a dairy in a city?—Yes.—What would be the difference in the percentage?—It is impossible to give the difference, because the data are so inadequate, but I should say, roughly, that the cases of tuberculosis in town dairies are twice as many as in the country.—Is it not the fact that tuberculosis is very rare in the country?—I do not think it is at all; I think it is very common.—I mean in country dairies as distinct from town dairies?—Yes, as distinct from town dairies it is.—Sir Mark

Stewart: Are there any special modes of testing milk which any ordinary farmer could adopt?—Yes, there are several modes.—Which would be the mode that you would recommend?—I should recommend what is known as the Babcock test, or the Gerber test, which is very similar, or what is known as the Marchand test.—These are all tests that a farmer could use himself?—Yes.—Without any necessary skill?—Yes.—Except, of course, following the rules?—Yes; any member of a farmer's family could be shown how to do it in 24 hours, with perfect confidence.—Which of those three do you think is the most suitable?—The simplest is the Babcock, and in the end it is the cheapest, because you can take so many samples at the same time; but the initial cost is a little more than that of the Marchand test, which is very cheap indeed, costing 12s.—It is a simple way of arriving at a fair and reasonable conclusion, you think?—It is as good as chemical analysis, and, I should say, quite as perfect for all purposes as regards the fat.—It would not give you all the solids?—No, that would not be necessary.—Has it come within your knowledge that there have been any objections taken to the analytical chemists at Somerset House?—For many years past there has been great objection taken.—What objections have been taken?—That they are too lenient, and that they pass materials sent to them for analysis at a higher standard than the analyst in the country.—What do you mean by a higher standard?—Perhaps the word is improperly used. I mean that they would accept milk, for example, containing 18 or 19 per cent. of water, whereas the analyst might very probably have declined to pass more than 15 per cent.—Would that be one of your main reasons for recommending legislation upon this subject, for having a fixed standard both for fatty matter and solids?—Yes; at the present time the law is most unsatisfactory upon that point. Analysts have their own fads, and people are frequently allowed to escape when they ought to be punished; and I have no reason to doubt that people are often punished when they ought to be allowed to escape.—It would not necessarily entail more expense to have a more accurate mode of analysis, would it?—I do not see why it should.—And to have a uniform system?—No.—It would not entail more analysts, or more inspectors?—I do not think it should.—Mr. Herbert Gardner: If there was a uniform standard I suppose you would not object to the Somerset House analysis?—Yes, I would, because the work that Somerset House performs is too large in its scope. I think that dairying ought to have a special department and specially trained men, not men to day analyse vinegar, to-morrow something entirely different, and the next day milk; they should only do work as to milk products.—Sir Mark Stewart: Would it not give greater confidence to the public if it were to be exclusively under the Board of Agriculture?—I think that the Board of Agriculture would give every satisfaction. That would satisfy the community in a greater degree than Somerset House?—I think so.—Although they do work together I understand, I suppose that a good deal of difficulty arises on the different modes of analysing employed?—I do not know; I think chemists generally adopt one method now.—Mr. Herbert Gardner: With regard to separated milk, is it your opinion that separated milk should not be sold at all?—No.—But that it should be sold absolutely as separated milk and as nothing else?—Yes.—Do you think that the demand would be sufficiently great to absorb the amount of separated milk that there is in the market?—It is not sufficiently great to absorb the balance that is not mixed with new milk at the present time.—Many people suggest that it would be a good thing, and I think so myself, that in county districts there should be creameries as there are abroad for the manufacture of the butter in counties, so as to get butter of a uniform quality. There would be large quantities of separated milk at those creameries of course?—Yes.—Would it not be a loss to the farming community if that milk could not be properly placed?—It is at the present time. There are now many factories and creameries in the country where butter is made, and the separated milk is either sent to the pigs or in some cases poured down the drains; it is by no means uncommon.—Would not that be a loss to the farming community; would it not be an advantage to the farming community if that milk could be disposed of?—It would be a very great advantage.—So that you would not altogether object to its sale?—No; but the great bar to the sale of this milk at its feeding value as distinct from the market value is the railway rates; they charge as much to take a gallon of separated milk, worth 1d. or 1½d. as they charge for the best milk in winter, which is worth 1s. a gallon.—And with regard to mixing it with other milk upon which Mr. Jeffreys was asking you some questions, is it not the fact that the only possible standard that you can have before you is the standard of fats?—Yes.—And if the milk is mixed with separated milk and yet represents the standard that you wish to see established, nobody can tell the difference?—No.—And no harm would be done to the consumer?—No.—If, for example, this proposal of mine were made by law and the seller was obliged to sell milk containing 3·2 per cent. of fat, it would still be open to him to buy milk containing 4 per cent. of butter fats and mix a skim milk with it; but that standard could not be kept any more than we can keep the present standard.—If you established your standard and the milk was sold at a certain standard to the consumer, no harm would be done to the consumer or producer or anyone?—No.—And practically it would be a guarantee from the seller to the consumer of a certain percentage of fatty solids?—Yes.—Would there be any harm done if the consumer wished to buy milk of a less standard; supposing that with his eyes open he said to the

distributor, "I wish to buy cheap milk with a less percentage of fat in it than the standard," is that any harm to the consumer?—No.—Or to the trade?—No.—Or to the farmer?—No.—Mr. Frye: Is not this separated milk manufactured in many parts into condensed milk?—Yes.—And are there any such factories in England?—I do not know any factories for condensed skim milk.—There are some in Ireland, I think?—There are some in Ireland.—There is one at Limerick, I think?—Yes.—Mr. Jeffreys: With regard to that separated milk, I hope it will not go forth from you to the public that you advocate the mixing of separated milk and fresh milk?—On the contrary, I have given evidence opposing that as far as possible.—Therefore, when Mr. Gardner said that there would be no harm in buying an inferior article, there is no harm in buying milk mixed with water, is there?—Not if the public like to ask for it.—But they ought to know what they are getting?—Yes.—And in separated milk the first idea of the name means that the fatty solids are taken out for the purpose of making butter?—Yes.—Therefore, separated milk in a general way is an inferior article?—Yes.—You could not detect it, probably, unless the solids were below a certain standard; but if you could detect it you would wish to prevent its sale?—I wish to prevent it entirely, but I could not advocate a law to prohibit a man saying to a producer: "I want to buy from you separated milk or milk partly deprived of its cream."—Would it not be well to make a law that separated milk must be sold separately, in the same way as in Denmark and other places, margarine has to be sold separately and not mixed?—Yes.—Would you not advocate that separated milk should be sold apart and distinct from other milk?—I do not advocate it, because I assume it would be, in case the law was passed. I assume that, in case a law establishing 3·2 as the standard were passed, then all milk below that standard would be sold as separated milk.—Colonel Warde: Would it be possible to mix any appreciable quantity of separated milk with fresh milk without reducing the percentage of solids below the standard?—Yes, it would be possible.—Colonel Bagot: With richer milk?—Yes; but, of course, the facilities would be much smaller on account of the greater value of the milk which would have to be bought for the purpose and its greater rarity.—Colonel Warde: You think that using separated milk with fresh milk would absorb a considerable quantity of separated milk that is now on the farmers' hands?—It would not absorb so much as it does now by a long way, because in consequence of the existing limit being very low, it is possible to mix upon a very large scale without detection; but, if you raise the limit to a standard such as I suggest, it would be impossible for the trade to be so large in mixed milk, because of the greater rarity of milk of a high standard and its greater cost.—Colonel Bagot: Is boiled milk discoverable by analysis easily?—I think in many cases it could be discovered because of the coagulation or partial coagulation of the albumen; that would be rather a physical examination.—Have you observed any amount of milk which has been boiled in small shops?—I know of none.—Not mixed with fresh milk?—No.—Do you think that is a likely thing to happen in small places where people, not having sold out their stock, endeavour to keep it by boiling?—No; I think they would rather add an antiseptic than boil it, because you can detect the boiling by the flavour.—Mr. Channing: A question was put to you by Mr. Jeffreys as to this introduction of separated milk in connection with high-class milk from Jersey cows, and so on. As regards that, the cost is a sensible item, is it not?—Yes.—It would be rather too costly a fraud to be had recourse to by most traders, if a standard as high as you name were adopted, would it not?—It would be morally impossible for many traders to do it at all, in consequence of the extra cost of the milk.—Are you aware that that opinion has been given expression to in America with regard to that very suggestion, that the cost practically excludes that kind of fraud if you have a sufficiently high standard?—Yes.—Have you any evidence to give us, as to analyses of milk of your own cows that you have taken at different seasons, morning and evening?—I thought I had a few with me, but I am afraid I have not; but I can give you the gist of the figures.—As taken at what season?—Taken in almost every month throughout the year 1891-2; and in no case did the fat fall below 3·11.—Is that with regard to the morning's or evening's milk?—That was the morning's milk.—And have you got figures as to the evening milk?—I have not got figures as to that.—You are sure that you are not reversing the figures, giving morning for evening?—Quite.—The minimum percentage was 3·11?—Yes; that was in the month of May.—In what months did you find the largest amount?—In October.—Have you any evidence to give us to the food that you found produced the maximum of fat?—No, I have not found any real difference at all, any sensible difference, whatever the food has been. We

have repeatedly taken analyses by the Marchand system to show the fat percentage; and whether the feed has been cotton cake or dried grains or bean meal or any of the various foods used upon a farm, I have not perceived any sensible difference.—In the proportion of feed present?—Excepting in the season of the year; and that I attribute principally to the fact that when the cows are in the flush of spring grass they give much more milk of a lower quality; and that in the autumn when they are in the aftermath and getting half the quantity of cake, they then give milk of a much higher quality indeed, but the quantity is diminished very considerably.—Mr. Kilbride: Is it the season of the year, or is it the length of time that the cow has calved?—It is the length of time that the cow has calved. As she diminishes in her yield, she increases in her quality.—But that depends upon the length of time that the cow has calved, and not so much upon the particular season of the year?—It does.—Sir Mark Stewart: The season of the year has something to do with it, has it not?—I should not like to say so.—Mr. Channing: But you have no doubt that the proportion of fat in milk is very much greater in the autumn?—No.—Returning for a moment to the first question that I put to you, do I correctly understand that you actually recommend that all milk below the standard should be described as separated milk, whether it is or not?—No, I made no recommendation; I said I assumed it would be. I do not make any recommendation upon the point at all.—Would it not be sufficient to treat the question of the introduction of separated milk as an adulteration, and to sell it as whole milk is a misrepresentation, and at the same time to adopt a standard of the minimum of fat in pure milk. Could the two be combined; would it not be possible to have a minimum of fat standard of milk, and also to rely upon the ordinary law with regard to misrepresentation in the case of separated milk?—I do not quite gather the gist of the question.—I see great difficulties in treating all milk below a certain fat standard as separated milk, and I was asking you whether, even if you adopt a fat standard, you could not also treat the introduction of separated milk, whatever the standard was, as a misrepresentation?—I see what you mean; it might not be separated of course; it might be 3·1 and still be pure milk, and if that were described as separated milk it would be a misrepresentation.—Could you not punish as fraud the introduction of separated milk, whatever the proportions found in the milk were, as well as have a standard of fat?—Yes, certainly, if it could be detected.—If you could rely upon somebody detecting it?—Yes.—I do not know whether you have given evidence on the point that you have in your table of evidence as to margarine cheese?—Very little.—What evidence have you to give as to the desirability of branding cheese made with margarine; have you given any evidence on that point?—I have only mentioned that as margarine cheese is being made to a very large extent, and—I have no evidence to prove it, as it is probably sold in some cases as butter is known to be sold for what it is not.—I think that margarine cheese should be branded with an impressed brand, as is the case in Denmark and elsewhere.—Do you think that it would be desirable for the English cheeses which are made of full milk to be branded also?—I do not suggest that there should be a law upon the point, but that the farmers would benefit themselves by branding their cheeses.—Mr. Frye: But you would make it the law as regards margarine cheeses?—Yes.—But not as regards English cheeses?—No, that might be optional.—Mr. Channing:—You think it would be to the benefit of the farmer to do so?—Yes.—And if it were done, he would be liable to the general law if it were misrepresented?—Yes.—Have you given any evidence as to the practice in the State of New York and Canada?—Yes.—Have you given evidence as to the desirability of applying all legislation applicable to margarine also to margarine cheese?—Yes.—Have you any evidence to give us to cheese made from skimmed milk?—No, excepting as regards the addition of oleo to the skimmed milk.—You think it is desirable, I suppose from your evidence, that such cheese should be described; its source should be described?—As skimmed-milk cheese, do you mean?—Yes.—I do not think it is very essential, because it is so easily detected by experts.—Mr. Frye: But the public could not detect it, could they?—I think they would have a very shrewd suspicion of skimmed milk cheese.—Could they tell from the exterior?—No they could not from the exterior, but they certainly would when they tasted it.—And they would not go there again. Now about the Margarine Act; you are aware that the 9th and 10th Sections give no power to inspect the factories of margarine?—Yes.—And it is one of your recommendations that there should be full power of entry and taking samples and of carrying out any other form of inspection which is deemed necessary in the case of margarine factories?—Yes, it is.

(To be continued.)

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Food and Sanitation.

SATURDAY, FEBRUARY 2ND, 1895.

FACTS ABOUT EXTRACT OF MEAT.

QUACKERY dies hard, and the task of slaying it is increased a hundredfold in difficulty when the persons running quack nostrums are "cute" enough to associate with the quackery the name of some eminent scientific man. If there flourishes one humbug which is hollower than any other, and which the ablest scientific men have condemned as dangerous, it is that of "Liebig's Extract of Beef." The use of Liebig's name is itself a piece of amazing impudence, his later years being embittered by the knowledge that his name was exploited for commercial purposes, but his personal feelings were treated with contempt by his exploiters. His eminence as a chemist made those who traded upon his reputation deaf to his keen disgust at the flaunting of Liebig as a hall-mark warranting their two or three ounces of meat extract—be it noted practically robbed of its nourishment—as the quintessence concentrated of an entire ox.

Dr. Laffan, addressing the British Medical Association at Glasgow, in 1888, lamented the fact that hundreds of thousands of pounds were wasted annually on beef-tea in these kingdoms. In his exposure of the Liebig nostrum, Dr. Laffan, no doubt in its full sense unaware of Liebig's condemnation of the Extract—advertised as his, does the great chemist's fame an injury by saying: "With regard to its value as a nutrient, we may fairly take the Liebig for our authority. His every interest was in favour of aggrandizing its merits, and his eminence as a chemist specially qualified him to offer an opinion. He states that the fibrine, gelatine, albumen, and fat are not present in his extract. . . . He further adds, that its component parts do not give strength here there is none, and that it merely acts on our nerves so that we become conscious of our existing strength. The same

authority confesses that to extractives and salts is due all the value it possesses; that it is to be classed with tea and coffee; and that it neither economises carbon for our temperature, nor nitrogen for the sustenance of our tissues. As to the difference between ordinary beef-tea and his extract of meat, he merely claims for the latter that it contains less water than the former.

"Another standard authority, M. Sée, tells us that beef-tea contains very little albumen and very little carbohydrates. That the glycogenic matter, the inosite, the sugar, and the lactic acid that belong to fresh meat are altogether altered in beef-tea. As to fats, they are almost annihilated.

"We have in it *creatine, kreatinine, carmine, inosite, and other quaternary products*. . . . The saline matters alone, plus the hot fluid, are therefore left to play the most considerable, if not the only, role in the value of beef-tea. Similar views have been advanced in this country, and the names of Hassall, Sibson, Wilberforce, Smith, Brunton, Masterman, and others may be cited in support of them."

Dr. Charles Moore Jessop, Deputy Surgeon-General (Army), at the meeting of the British Medical Association at Leeds in 1889, referred to the quackery practised under Liebig's name, saying, "Forty years ago patients were deluged with meat washings, under the belief they were being nourished; as they did not improve, brandy was adopted, so, between brandy and meat washings, their recovery was delayed, under a mistaken idea there was virtue in scent, salts, and brandy. Pounds of meat were, and still are, wasted in the preparation of beef-tea, whilst brandy is rightly enough tabooed. Medical men know perfectly well what good beef-tea should be, but patients complain that the doctors do not give them easy directions for its preparation. There is some truth in the complaint, for we are apt to forget that what we are familiar with, the laity, including nurses, is unlearned in. We accept the off-hand statement, 'We know all about it,' without inquiry."

It is questionable if it was not less to Liebig than to Beneké that the quackery that has gulled so many of the public into the belief that a small portion of Liebig's Extract contains the concentrated nutriment of an ox, owes its wide acceptance, for Beneké in the *Lancet* in 1851 stated that Liebig's Extract is made by chopping 1lb. of beef finely and mixing it with its weight of cold water slowly heated to boiling, then briskly boiled for a minute or two and strained. Six pounds of meat thus treated yield, after evaporation in a water bath, 3 ounces. Hence 1 ounce of this extract equals 32 ounces of meat. That this was nonsense of the poorest sort Dr. Hassall showed in the same journal in 1865, wherein he exposed the quackery of the supposed nutritive value of Liebig's Extract of Meat by showing that the fibrin, gelatin, albumen, and fat are absent.

Baron Liebig himself says, "It will be well understood, therefore, that by the addition of extract of meat to our food we neither economise carbon for the maintenance of the temperature nor nitrogen for the sustenance of the organs of the body, and that, therefore, it cannot be called food in the ordinary sense," i.e., in plain English neither beef-tea nor extract of meat is nutriment.

The Editor of the *Medical Times and Gazette*, writing in 1871, said: "A patient may be swallowing several ounces of extract daily, and yet be actually starving; he may feel better for it, but his strength will not return unless he can swallow something else as well. We have eaten half a pot of the stuff, and remained as hungry as ever, the only effect being to produce thirst, to heighten the bodily temperature, and to increase the nitrogenous waste in the urine.

Dr. Richard Neale, Editor of the *Medical Digest*, later unhesitatingly exposed Liebig's Extract of Meat as a sham, saying: "Many writers have endeavoured to impress the public and the profession with a true value of beef-tea, viz., that it is not a nutrient but a stimulant. It appears, however, of little avail, for you constantly meet with those, even in the ranks of the profession, who believe beef-tea to be really a powerful nutriment.

Other medical men of the highest eminence who have from time to time written upon the question of the true value that beef-tea possesses as a stimulant, but not as a nutritive agent, may be referred to by the aid of the *Medical Digest*, secs. 124 and 125.

Sir William Roberts says:—
 "There is a widespread misapprehension among the public in regard to the nutritive value of beef-tea. The notion prevails

that the nourishing qualities of the meat pass into the decoction, and the dry hard remnant of meat fibre which remains undissolved is exhausted of its nutrient properties, and this latter is often given to the cat or dog, or even, as I have known, thrown away as useless rubbish into the midden. A deplorable amount of waste arises from the prevalence of this erroneous notion in the households of many who can ill afford it. The proteid matter of meat is quite insoluble in boiling water, or in water heated above 160 degrees Fahr. The ingredients which pass into solution are the rapid extractives and ascines of the meat, and nothing more except some trifling amount of gelatine. The meat remnant, on the other hand, contains the actual nutriment of the meat, and if this be beaten into a paste with a spoon or powdered in a mortar and duly flavoured with salt and other condiments it constitutes not only a highly-nourishing and agreeable but also an exceedingly digestible form of food."

Dr. Fothergill, in the *Manual of Dietetics*, comments on the above thus: "Yes, Dr. Roberts, and there is another 'deplorable waste' involved in this error, and that is the 'deplorable waste' of human life. Hundreds of our fellow-creatures are daily dropping into their graves, unfed, unsuccoured, because beef-tea is given as a food—given for what it is not."

Dr. Fothergill writes with some warmth, but is not the warmth excusable? In our opinion it is. The exhaustive analyses we have published from time to time of the various meat extracts offered to the public have done much to show how unjustly the fame of that great chemist Liebig has been treated, and how, against public weal, his name has been exploited for commercial purposes to increase the sale of a quack nostrum. The *Pall Mall Gazette* earned the gratitude of all by exposing the Harness Electropathic Belt humbug. The Harness game, however, was but as a drop of water to an ocean when compared with the Extract of Meat nostrum. The Harness dupe purchased one belt, paid his few guineas, and had done with it, but the Meat Extract victim purchases what is only a stimulant at more than famine prices, thinking he is getting the quintessence of a whole ox, and dies of starvation. Dr. Fothergill, in his *Manual of Dietetics*, did much to warn the public against the Extract of Meat humbug, saying, "All the bloodshed caused by the warlike ambition of Napoleon is as nothing compared to the myriads of persons who have sunk into their graves from a misplaced confidence in the food value of beef-tea. As a food it is but as a mirage of water seen by the thirsty traveller in the desert: there is no real water. So with beef-tea, it is not food. A traveller once requested some chicken broth at an inn; when brought, its quality was indifferent. Complaining that there was nothing of the chicken about it, the waiter assured him he was mistaken. "It was made from water in which a chicken had paddled." In so far as that fluid was chicken broth is beef-tea a food."

The process of educating public opinion to see the worthlessness of the so-called Liebig's Extracts of Meat as food has been a slow one, for it is not a question to which the bulk of the medical profession have given close consideration. The most celebrated physicians well know its importance, for immediately following our analyses published in April, 1893, the late Sir Andrew Clark wrote us that he "was anxious to refer to the facts in the article to the instruction of his pupils," and requesting copies of the articles for that purpose. Much of Sir Andrew Clark's success was due to the fact that he understood dietetics as few physicians do, and he did a great deal to sweep away the almost universal belief that Liebig's Extract of Meat was of use as food. It does not contain the fibrin of the meat, and herein its uselessness is conclusively demonstrated. Dr. Jessop said to the British Medical Association, at Leeds, in 1889: "Nurses, cooks, and patients all clamour for clear beef-tea. Clear beef-tea is of no use to anyone as food. It is true it is 'just what the patients like,' and what they 'can be got to take,' but what is proper for sustenance is lost sight of. However well beef-tea may be made, the most important part is left at the bottom of the cup—the grounds which are no good.' The patient does not progress; the attendants 'have done all that they can do'—which is just what they have not done by rejecting the 'grounds as no good.'"

Liebig himself received a rude lesson in this from a rival chemist, who showed that "Dogs fed exclusively on Liebig's Extract die sooner than those not fed at all."—*Medical Times and Gazette*.

Dr. Lissan, in the *British Medical Journal*, January 26th, 1889, also records the fact that experiments made on dogs show that "they die sooner when fed exclusively on Liebig's Extract, than when left unfed." Professor Kemmerich has also shown that *an animal fed upon extract of beef alone will succumb more readily than a like animal entirely deprived of food*; and in an address upon "The Nutritive Value of Beef Preparations," read before the Philadelphia County Medical Society on May 13th, 1891, Professor R. H. Chittenden, said: "The fact has evidently been disregarded that

the residual fibre remaining after such extraction has retained all the nutritive matter.' It is, as Dr. Jessop said, the *grounds left at the bottom of the cup which are the real food*. To make an extract of meat a real food it is essential that the meat fibrin should be restored to the fluid. "That it is," says Dr. Fothergill, "which gives the food value to the meat infusion." Yet, in the face of irrefutable experiments and chemical and medical knowledge, the public are being cautioned by advertisements in *The Pall Mall Gazette* and other journals, at this time of day, to "Beware of extracts of meat with sediment." This is exactly what the public ought not to beware. What they should refuse to waste their money in is the clear, unnutritious quack nostrums mis-called Meat Extracts, or juices that, like Valentine's Meat Juice and Liebig's Extract of Meat, have no sediment, or the rubbishy mis-called Essences of Beef that are devoid of nourishment and a dangerous fraud upon the sick.

The following recent analyses by Professor Chittenden will enable readers to realise more fully the true nutritive value of Liebig's Extract of Beef and some other meat preparations:—

CONSTITUENTS.	Liebig's Extract of Beef.	Valentine's Meat Juice.	Bovril.
Water (at 110° C.)	20.06	60.31	39.58
Solid matter (at 110° C.)	79.94	39.69	60.42
Soluble in water ... ..	.....	.....	50.40
Insoluble in water	0	0	10.02
Inorganic constituents	24.04	11.30	13.52
Phosphoric acid (P ₂ O ₅)	9.13	4.00	3.91
Fat, ether extractives	0.91	0.78	1.29
Soluble in 80 per cent. alcohol	55.72	29.15	34.10
Total nitrogen	9.52	2.68	7.38
Nitrogen of insoluble matter ... ..	.....	.....	1.46
Insoluble proteid matter ... ..	.....	.....	9.12
Soluble albumin coagulable by heat	0.06	0.55	0
Soluble albumoses	0	0	0
Peptone	0	0	0
Total proteid matter available as nutriment	0.06	0.55	9.12
Nutritive value as compared with fresh lean beef (lean beef=100)	0.30	2.80	47.20

These analyses invite some consideration, especially as regards the total proteid matter and nutritive value.

It will thus be seen that Bovril, as compared with fresh, lean beef, has a nutritive value of 47.20 per cent., whilst Liebig's Extract of Beef has only 0.30 per cent., i.e., that the nutritive value of Bovril is over 150 times greater, compared with fresh lean beef, than the nutritive value of Liebig's Extract of Beef, the total nutriment in Bovril being exactly 152 times more than found in Liebig's Extract. This enormous superiority on the part of Bovril, according to Professor Chittenden's experiments, gives Bovril, compared with beef-tea or extract of beef, a higher nutritive value than our own investigations disclosed; but there can be no doubt that, owing to the fact that Bovril has been prepared on totally different principles from the unscientific ones upon which the Liebig's Extract is produced, it has enormous advantages over any meat extract preparation.

In Liebig's, the fibrin, gelatine, and albumen, the only real nutrients, are excluded, and the result is, that the constituents of Liebig's Extract of Beef are so entirely deficient in albumen that their small value hardly admits of question. In Bovril, the fibrin present in the fluid is that which forms a sediment and makes Bovril a real food. In place, therefore, of warning the public against Meat Extracts that contain a sediment, the public should be very careful to purchase none that do not contain a sediment. The thing to be sure of is that this sediment is a meat one, and in Bovril such is the case. Professor Chittenden's analyses above given point the moral conveyed in our issue of November 18th, 1893, wherein we gave careful analyses made by ourselves of a series of standard meat extracts and juices.

Our analyses, the reader may remember, threw a sinister light upon this question of Meat Extracts and Essences, the only preparation which really approached the requirements of a nourishing food, being Bovril. With this exception, all the Meat Extracts offered to the public failed most lamentably in justifying their existence or sale. Bovril is evidently made on more rational principles, and its producers have apparently endeavoured to put some nourishment into their preparation by conserving, or adding, albumen and fibrin in moderately fair proportions. We cannot, therefore, deny that it is a distinct and valuable advance, and deserving in this of praise, but we think the preparation might be made even more valuable to the physician and the invalid, and the makers of Bovril would do well to consider if they could not improve upon what they have already done, by increasing that fibrin sediment against which the public are so ignorantly warned.

(To be continued.)

DISEASE AND DISINFECTANTS.—VII.

THE adulteration that most vividly impresses the public is that of milk, but consumers of milk are in some measure protected by the Food and Drugs Acts. Not so the users of disinfectants, who may be swindled without risk and with impunity, for they have absolutely no remedy against the vendors of spurious disinfectants, no matter how terrible be the consequences of using them. The position of the swindling disinfectant vendor is rendered impregnable by the fact that the best authorities hold that disinfectants do not come within the scope of the provisions of the Food and Drugs Acts. It seems hard to believe that in England, where we have given the world examples in sanitation, such a state of things could exist, but it is the sober truth, and in consequence of this state of the law the country is flooded with disinfectant preparations of which only some 5 per cent. are genuine, useful ones, the rest being dangerous frauds. As this is so important a question, being often a matter of life or death, not only to families, but to whole communities, we conceive we do only a pressing public duty in exposing the extent to which fraud in disinfectants is carried, in the hope that any new Act to deal with adulteration will contain powers to suppress these deadly rogueries. In our previous articles we made public the results of using a substance called the

VICTORIA CARBOLIC DISINFECTANT POWDER.

It was furnished with what purported to be an analysis by John Lubbock, chemist to the London Pure Drug Company, stating that the preparation contained 15 per cent. of carbolic acid. There was no such chemist, and our analysis of a sample of this carbolic powder showed it to contain no carbolic whatever. How much disease and death was caused by this swindle before we exposed it is now impossible of discovery, but Dr. Barwise, medical officer of health to the Derbyshire County Council, found that it had been used at the hilly village of South Wingfield for disinfecting typhoid excreta, and, of course, had no destructive effect whatever upon the typhoid germs. The result was that the germs, instead of being destroyed, polluted the subsoil water and were carried in it half a mile, contaminating wells used by families further down the hill, causing no less than 50 cases of typhoid fever and five deaths. We tracked this gang of murderous rascals, and found them pursuing their deadly swindle at Shoreditch. Their names and the facts were laid before the Board of Trade, who apparently red-taped the papers, pigeon-holed them, but did nothing to punish the villains, who removed the scene of their swindle, changed their names, and are now selling an equally deadly fraud from another part of London. But almost every day sees its new disinfectant nostrum, some of them launched with an effrontery that is positively enough to take one's breath away. Guinea-pig M.P.'s can always be got by company promoters at a price to frank any swindle, as Jabez Spencer Balfour's victims know to their cost, but it might fairly be supposed that our most virtuous professors would at least have too much regard for their honour, and be too careful to allow themselves to be made cat's-paws of to promote schemes of a dubious character.

Three weeks ago

THE SMOKE AND FUMES ANNIHILATOR COMPANY was launched, and the public were invited to take shares in that concern to the extent of £120,000. The prospectus showed an estimated profit of £9,000 per year by the sale of a disinfectant called

ELLIOTT'S ANNIHILANT.

The compounder of the substance with this imposing name—Mr. Sam Elliott, Albert Works, Newbury, wrote to *The Pall Mall Gazette* saying:

"As to the financial results, I of course have given away the larger quantity of the disinfectant in order to get it tested and in use, as it was an entirely new production, but I have sold thousands of gallons at prices ranging according to the quantities taken, from 4s. 6d. per gallon downwards, but in the future, if sold at even 1s. 3d. per gallon, a very large profit will accrue. I could have sold far larger quantities had I advertised it, or had the sale been organised, as it will be in the future."

The prospectus stated:

"The net profit to be derived from the sale of the liquid disinfectant, which can be produced at a very small cost in large quantities. The Mint machine can produce up to 6,000 or 8,000 gallons per week. A sale of, say, 15,000 gallons per week for 48 weeks in a year, at a profit of only 3d. per gallon, would yield per annum £9,000."

Amongst the persons whose names were used to recommend this scheme to the public was that of his grace the Duke of

Westminster. Now we should like to know from his grace if he personally knew anything of this company and of this disinfectant, in connection with which his name was employed as a decoy to induce the public to invest their money to the extent of £120,000? for his franking of Elliott's Smoke and Fumes Annihilator Company has caused many persons to take shares in a concern wherein they will either lose their money, or participate in a gross and dangerous humbug. In a report by Mr. J. Carter Bell, F.I.C., public analyst to the Cheshire County Council, the following analysis of ELLIOTT'S ANNIHILANT was given:

"The disinfecting liquid only contained 1 per cent. of sulphate of iron, with a mere trace of copper; this nostrum was sold for one shilling a pint bottle, and as sulphate of iron can be bought in the open market for about twenty-five shillings a ton, and one pound weight which would not cost one farthing, would make one hundred bottles of this disinfectant, which on being sold for £5 leaves a very respectable profit for all concerned. I would not dwell so much upon this latter if it had been really a good antiseptic and fairly worth its selling price, but I have performed so many experiments with this sulphate of iron, using large quantities, and have found it very unreliable; it is a deodoriser, but cannot be called a destroyer of micro-organisms. Though this subject does not come under the Food and Drugs Act, yet it does belong to public health, and that is my reason for introducing these two samples, so that local boards throughout the county may be on their guard in purchasing disinfectants. It cannot be too widely known that some disinfectants which are sold under fancy names at very high prices are almost worthless as regards their germicidal powers."

Another analysis of this precious disinfectant shows it to contain 98.71 per cent. of water and 1.29 per cent. of total solid contents dry at 100 c.—this residue being almost exclusively sulphate of iron. There was a trace of copper and of chlorine, and the liquid was slightly acid in reaction. Were this trash to be used as was the carbolic we instanced above, for typhoid excreta, it would have practically no germicidal power whatever. It is not pleasant therefore to be informed that Mr. Elliott has sold thousands of gallons of it at prices from 4s. 6d. per gallon downwards, and that the sale will be "organised" and the "preparation largely advertised." In the meantime, whilst we wait his Grace of Westminster's reply, we recommend the facts above given to the notice of the authorities, as the public run grave risks in the event of this rubbish being used in any epidemic. We could multiply the instances already given by the score, but we have already said sufficient to establish our claim that the question of disinfectants should be brought before the Select Committee of the House of Commons, and that if we have no law existing that can reach such dangerous nostrums as we have described, there is urgent need for such a law. Even from firms of good repute and honest intentions it is difficult to get disinfectants of a really reliable character. Everyone who has tried it knows, for example, that to mix 15 per cent. of carbolic in equal proportions in a powdered disinfectant is practically an impossibility. One part of the powder may have scarcely any of the carbolic, whilst another may contain a high percentage, yet who can ensure that the powder containing scarcely any carbolic may not be the one used for typhoid excreta? The use of powdered disinfectants is therefore necessarily uncertain, however honest the makers may be. For ordinary use liquid disinfectants are preferable, but as every chemist and oilman has on sale a stock of more or less fraudulent rubbish, those who require disinfectants are in a position of grave difficulty. They may buy a trashy preparation and use it, having full faith in its efficacy, thereby spreading a deadly disease through a household or a district. There is therefore good ground for the request, made by so many readers of our former articles on disinfectants, that in addition to exposing the useless ones we should tell them which are really reliable preparations. In previous articles we have dealt with several well-devised disinfectants—upon the present occasion we shall deal with a new article which has been largely offered to the notice of medical men and the public under the name of

IZAL.

Unlike many disinfectants, Izal comes with testimony by many of our ablest scientific investigators as to its genuineness. Dr. Klein, F.R.S., has made experiments and observations with the new product with the object, as he says, of ascertaining:

"To what degree the emulsion is capable of KILLING, i.e., disinfecting, pathogenic and non-pathogenic microbes, and in what proportion it is capable of INHIBITING the growth of those microbes, other conditions (medium and temperature) remaining favourable.

He experimented with the following microbes:

"(1) Spores of bacillus subtilis (hay bacillus); (2) spores of bacillus mesentericus (a common putrefactive microbe); (3) spores of bacillus anthracis; (4) bacillus subtilis, non-spore bearing forms; (5) bacillus mesentericus, non-spore bearing forms; (6) bacillus anthracis of the blood of an animal dead of virulent anthrax; (7) bacillus of diphtheria; (8) bacillus of typhoid fever; (9) bacillus of glanders; (10) bacillus of septicæmia (mouse); (11) bacillus of fowl cholera; (12) bacillus of fowl enteritis; (13) bacillus of pneumonia; (14) bacillus of grouse disease; (15) bacillus of swine fever; (16) bacillus of swine erysipelas; (17) bacillus prodigiosus (pink), non-pathogenic; (18) spirillum of Finkler; (19) spirillum of cholera (cholera bacillus); (20) staphylococcus

pyogenes aureus; (21) staphylococcus pyogenes albus; (22) streptococcus pyogenes; (23) streptococcus of erysipelas; (24) streptococcus of scarlatina; (25) proteus vulgaris (the common microbe of putrefaction)."

And found that as regards "All species mentioned as 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 25, and in all these instances the disinfectant used in the strength of 1 in 200 completely destroys in five minutes the vitality of the microbes; no living cultures can be produced with them. The experiments were made at first also in this instance with the disinfectant of the strength or 1 to 100, exposing the microbes in it for five, ten and fifteen minutes; and also to 1 in 200, exposure fifteen minutes; but it need hardly be said that all vitality was destroyed, as already 1 in 200 for five minutes is a complete disinfectant. (It may not be unnecessary to state here that the same cultivations of bacillus diphtherie and bacillus of typhoid used in this series of experiments—namely, exposure in the disinfectant of the strength of 1 in 200—were used, and with exactly the same methods also, for comparative experiments of disinfection with carbolic acid). Crystals of absolute phenol were dissolved in water so as to form a solution of the strength of 1 in 200; the microbes were then introduced into this solution and exposed to its action for various periods. As a result it was found that an exposure for two hours in 0.5 per cent. carbolic acid, i.e., 1 in 200, does not in the least injure the bacilli; good and typical growth can be established with them after the exposure. With regard to species 22, 23, and 24 (streptococci), these I knew from previous experiments with other disinfectants to be less resistant than the staphylococci and bacilli. I have, therefore, subjected these three species to the disinfectant in weaker strength, namely 1 in 300, and found that an exposure for five minutes in this mixture is fatal to these microbes, streptococcus pyogenes, streptococcus of erysipelas, and streptococcus of scarlatina. From these series it follows that an exposure for five minutes in the strength of 1 in 200 (1 in 200 would mean one ounce of the disinfectant emulsion distributed in ten pints of water) completely destroys the vitality of the microbes of diphtheria, typhoid fever, fowl cholera, swine fever, glanders, cholera, of suppurations, of erysipelas, scarlatina, and other non-sporing pathogenic and non-pathogenic species."

In addition to these experiments on the destruction of microbes, Dr. Klein made some researches as to the solutions that should be used with a view to inhibiting their growth, and states:—

"The result of all experiments on inhibition may be briefly summarised for all the 25 species tested, namely: (1) Spores do not germinate in medicated gelatine or broth if the amount of disinfectant added is 0.1 per cent.; (2) no micrococcus (staphylococci and streptococci) is capable of growing in medicated gelatine or broth of the strength of 0.1 per cent. medication; (3) all non-sporing bacilli and spirilla fail to grow in medicated gelatine or broth of the strength of 0.1 per cent. medication; (4) excepted from this are the bacillus prodigiousus and the bacillus of typhoid—the bacillus prodigiousus shows growth on gelatine medicated 0.1 per cent.; the growth is retarded, and always starts from the superficial layer of the medium; it proceeds considerably slower than on normal gelatine."

Dr. William Bruce Clarke in *The Lancet*, July 1st, 1893, reported on Izal for surgical use, saying:—

"The cases in which I have made use of this fluid may be described under the following heads: (1) fresh operation wounds which were uncomplicated by ulcers, sinuses, etc.; (2) cases demanding special purification—*e.g.*, ulcers, etc., in which skin grafting by Thiersch's method was employed; (3) abscesses and sinuses of varying degrees of complexity, all of which were either septic to start with or at least contained pus; (4) sinuses in connection with mucous membranes, including fistula in communication with the urethra and a case of prostatic abscess opening both into the rectum and bladder; and (5) foul mucous membranes, such as bladders in a condition of cystitis and mouths rendered foul by operations undertaken in their neighbourhood."

In all the cases the results were eminently satisfactory. Want of space prevents our giving more than the following:—

"*Sinuse in connection with mucous membranes.*—Some of the sinuses of this nature with which one has to deal from time to time may be classed amongst the most tiresome which are encountered in surgery, and perhaps amongst the most troublesome of all are those fistulae which are in connection at the same time with the urethra, prostate and bladder. The first case of this nature in which I made use of Izal occurred in a patient who had a perineal fistula subsequently to urethral stricture. Though the calibre of the urethra was fully restored the fistulous track refused to heal. It had been dilated, scraped and injected with various fluids, such as chloride of zinc, nitrate of silver, carbolic acid (1 in 20), etc., but all alike had failed, and rarely a day passed without a certain amount of urine trickling out of the fistula. It was injected with Izal, and a week later the urine ceased to come by the false track, which has remained permanently healed ever since—*i.e.*, for more than three months. The second case was that of a prostatic abscess which had burst both into the rectum and the urethra. A lateral cystotomy was performed, and the cavity scraped out with the finger and freely irrigated with the fluid. The wound completely healed in about five weeks without leaving any fistulous track behind."

Dr. Bruce Clarke's opinion is that "Izal is likely to prove more efficacious as an antiseptic than any substance at present known."

Mr. J. H. Worrall, F.C.S., F.I.C., thus describes Izal:

"During a research into the nature of uses of the bye-products derived from the Thorncliffe Patent Coke Oven, I found that one of these products was an oil, which has not hitherto been described, and which differs so remarkably in its properties from coal tar, although obtained from coal, as to be unique in its character. From this oil I extracted a body which evidently possessed high antiseptic power. I estimated this power, by observing the length of time the new body would arrest the putrefaction of a putrefying liquid, and then compared it with pure crystallised carbolic acid. The results clearly showed that its antiseptic power was considerably greater than that of this well-known antiseptic."

Our own experiments with it in various forms show that Izal is a reliable preparation, and one which our readers may adopt with full confidence in its efficacy to really do as a disinfectant what it professes to do.

(To be continued.)

ON RECOGNISED DEFICIENCIES IN THE PHARMACOPŒIA.

THE object of FOOD AND SANITATION has been to advocate pure food and drugs, and generally to conduce to the maintenance of hygiene. That our journal really met a want is testified by the demand we have for those issues which are particularly devoted to an exposure of articles, which either do not come up to the required standard of perfection, being of inferior quality, or which do not fulfil the claims put forward by their makers. True, it is the business of the sanitary inspectors and medical officers of health to enforce the Food and Drugs Acts, but notwithstanding their excellent efficiency, we fear that in many cases they are powerless to act, as the goods do not come quite within the meaning of the Act, being on the one hand neither simple foods nor on the other actual drugs, but rather compound substances which come under the generic title of specialities.

To show what we mean, let us take a typical case. Perhaps there is no remedy which is prescribed by physicians more frequently than iron in one form or another. The different scale preparations such as the citrate and tartrate as well as the chloride, bromide, iodide, phosphate, and sulphate, in powder, pill, or liquid form, are all very largely prescribed, and each receives the endorsement of different physicians. There is perhaps one form of iron which may be said to receive the approbation of all shades of medical opinion for the treatment of anemic and chlorotic patients, viz., the carbonate, this having been proved to be the form of iron most assimilable by the system.

The mode of administering it, however, to the best advantage is the question which gravely perplexes the profession, since the large quantity of impure and inert matter—amounting in some cases to 90 per cent.—is allowed by the authorities of the British Pharmacopœia because there was no known way of avoidance. For years past it has also been one of the highest aims of the chemist to provide a compound in which the full medicinal value of the fresh salt could be secured. There was an apparent insurmountable difficulty, inasmuch as ferrous carbonate is so prone to oxidation and inert oxy salts of iron become formed, which are of very little use medicinally. The value of ferrous carbonate therapeutically, on account of this very proneness to oxidation, is that as well as being readily assimilated it acts also as a vehicle to carry oxygen to the blood. To show how rapidly this oxidation takes place in ferrous carbonate, it is only necessary to mix even the exsiccated ferrous sulphate and exsiccated sodium carbonate, and place immediately in a well stoppered bottle, when, after a short time a red colour will be developed owing to the formation of ferric oxide. This is explained by the fact that it is almost impossible to drive off all the water of crystallisation from the ferrous sulphate, one molecule being associated as part of its composition, to decompose which, means to destroy the sulphate and convert it into an oxide. It will therefore be readily seen that decomposition must occur in the presence of the smallest amount of moisture, and how quickly a pill of ferrous carbonate, such as Blaud's Pill must decompose when moisture is added or where the salts are mixed: it will thus be understood why they become inert, and instead of assisting in the production of new blood, by upsetting digestion and causing constipation actually prove deleterious to the system. To show the unreliability of iron salts, let us take the case of ferrous arseniate, as that perhaps is the most flagrant and dangerous; 4.46 grammes of pure ferrous arseniate are equivalent to 100 cubic centimetres of the standard volumetric solution of a red chromate of potash, by which it is estimated, yet, according to Atfield's chemistry, the standardisation of a good commercial sample shows that 11.80 grammes are required for the full reaction of 100 cubic centimetres of the standard solution of red chromate of potash, which gives the result, viz., that only 37 per cent. of ferrous arseniate is active, whilst 63 per cent. is inert. In the British Pharmacopœia the result given shows even a greater discrepancy, for in the figures given in that work, 44.44 grammes are required for 100 cubic centimetres of the standard solution. Comment in such a serious matter is needless. In the same manner it can be shown that the official phosphate contains only 45 per cent. real phosphate of iron, and in the saccharated carbonate of iron, trade samples variously contain from 20 to 30 per cent., and sometimes but

rarely 35 per cent. real ferrous carbonate. Thus to tabulate these results we have—

Ferrous arseniate	with 90 per cent. to 60 per cent. inert matter.
Ferrous phosphate	„ 55 „ „ „ „
Ferrous carbonate	„ 80 „ „ 65 „ „

It became necessary, therefore, to devise some means whereby the ferrous carbonate, arseniate, and phosphate could be always freshly prepared and administered in their nascent condition. After much difficulty and experiment, it was found that this could be done by keeping the two salts which are used in their manufacture separated until they were actually taken into the stomach, when reaction could rapidly take place and the desired salt be formed.

Our attention has lately been drawn to a new invention, which we are pleased to note is of English origin, and of which we think very highly. We refer to the Bipalatinoid form of medication. The Bipalatinoid consists of a case of thin jujube very soluble and perfectly air-tight. This envelope is further divided into two parts by a septum of jujube, and in one compartment is placed the iron salt, while the alkaline carbonate is deposited in the other. Immediately on this double shell reaching the stomach, the gastric secretions dissolve the envelope and the salt (in this instance ferrous carbonate) is at once produced in a nascent state. So highly was this device esteemed by the Jury of Awards at the International Congress of Medicine held in Rome in April last, that it was awarded the only Gold Medal conferred upon any invention emanating from English-speaking countries. It, in fact, formed the text of a paper read by Dr. Hans Heger, secretary and official representative of the Austrian Pharmaceutical Society to this Congress, before the pharmacological section. In it he says:—“I am of opinion that these Bipalatinoids are the only new thing really worthy of notice in the way of medicinal administration: an invention which tests have proved to be of the highest order.” He further adds, “there is no doubt that this form of medication is an important advance in pharmacy and has a great future.”

We hear that a new edition of the Pharmacopœia is coming out during the present year, and we feel persuaded that the authorities cannot help recognising such an important advance in the administration of these delicate salts, and thus enable the practitioner to know for a certainty what he is administering, and what results he can expect, as at present he does not know whether he is giving 90 per cent. or 40 per cent. of the desired salt. So much depends on the methods employed by the manufacturer and the age of the medicaments. Not only is carbonate of iron administrable in this form, but phosphates, salicylate, and numerous other compounds.

To the medical practitioner, exactitude of dose is of the greatest importance, and therefore this form is certain to receive the approbation of the medical profession at large.

We are pleased to note that this advance in pharmacy and the administration of pure drugs has occupied the attention of the Editors of the *Medical Annual*, who in the last issue say:—

“The value of iron as a remedy in simple anæmia is so universally understood, that our patients often anticipate the “iron tonic” we prescribe. Opinions, however, widely differ as to the *modus operandi*—so much so that many physiologists of great eminence have arrived at very different conclusions, even after close study. On the other hand, clinical experience has clearly demonstrated the certainty with which we may predict a highly beneficial result from the administration of freshly prepared carbonate of iron, and more especially from nascent ferrous carbonate elaborated in the alimentary tract of the patient. This is now possible by the use of the “bi-palatinoid” mode of administration. This ingenious product of modern pharmacy, introduced by Messrs. Oppenheimer, Son and Co., Limited, 14, Worship-street, E.C., consists of two concave gelatine discs, joined at their edges, and through the centre of the intervening space of which runs a gelatinous septum. On one side of this, sodium carbonate is placed; on the other, ferrous sulphate. These two salts are kept apart until the action of fluid or the gastric juice causes the “bi-palatinoid” to swell up and release its contents, when the two salts by their union produce ferrous carbonate in a nascent state. Many have borne testimony to the great advantage which this mode of administering iron possesses, but no clinical tests have been yet made of its direct effect in increasing the quantity of hæmoglobin and we thought that some experiments we have made in this direction would be of interest.

In three consecutive cases of simple anæmia we were struck by the invariably rapid improvement which followed the administration of iron in this manner, the percentage increase in the hæmoglobin speaking for itself.

CASE 1.—S. A., female. On admission, 48 per cent.; after 11 days, 75 per cent.; after three weeks, 90 per cent.

CASE 2.—J. S., female, aged nineteen. Extremely anæmic on admission, 28 per cent.; after one week, 44 per cent.; after three weeks, 85 per cent.

CASE 3.—H. H., female, aged twenty. On admission, 36 per cent.; after one week's treatment, 48 per cent.; after three weeks, 73 per cent.

In all these cases two “bi-palatinoids” were given three times daily during the whole period of observation, and no other remedy. The results greatly exceeded our expectations. Professor Tumas in his experimental investigations on the pharmacology of iron, found that in artificial anæmia induced by

bleeding, the restoration of hæmoglobin progressed far more rapidly during the administration of iron than the restoration of the corpuscles. In our patients, of course, the deficiency was hæmoglobin only, the corpuscles not being markedly diminished in number. When we consider what a very minute percentage of iron hæmoglobin contains (.336 per cent., Zinoffsky), it is no difficult to understand that, provided the iron is administered in an assimilable form, the restoration should be so very rapid; but our chief difficulty hitherto has been to insure that the iron should be absorbed.

FILTERS AS DISEASE DISTRIBUTORS.

IF there is one article of domestic use which is an insanitary disease distributor, it is the filter. We have before now expressed our belief that an organisation which would act in the spirit of the Iconoclast and swoop down upon the average household, seize the family filter, and smash it into atoms would be doing a work more meritorious and wholesome than seven-eighths of the various philanthropic associations perform. In anyone doubts this, we commend the following facts to his careful consideration. Last year there occurred a serious outbreak of cholera in the East Lancashire Regiment, in India, the origin of which was for long a mystery to the authorities. It has at length been discovered that the cholera was propagated by the use of the barrack-room filter. The sand used as the filtering medium was taken from the Moli Ghat, on the river Gumbi, a district in which cholera had been prevalent amongst the natives. This filter was passed from company to company of the unfortunate regiment, as one body of cholera-stricken men after another were moved out into camp, and it distributed its carefully conserved cholera amongst the whole regiment. Filter advocates—and no doubt there exist some—may object that this is only an isolated case, not applicable to England, where the domestic filters in use have as filtering mediums silicated carbon, charcoal, spongy iron, etc., for each of which their makers claim every virtue. Those, however, who have really carefully investigated the question know, not only that the claims are preposterous, but that the filters actually contaminate the water that passes through them, instead of purifying it. A series of searching experiments with filters have recently been made by Dr. G. Sims Woodhead, and Dr. G. E. Cartwright Wood, and the results are such that, were their real significance known to every possessor of an ordinary filter, he would smash it forthwith and render it incapable of doing any further harm. The experiments were tried on every filter in general use, and were directed to determine to what degree the filters provided a safeguard against the passage of disease organisms into the water consumed. The whole of the filters were sterilised so that no micro-organisms could be present at the beginning of the tests; ordinary tap-water was then passed through them and the number of organisms in the filtrate computed and compared with the number in the tap-water before filtration. *In only two out of thirty-five filters examined was the filtered water free from micro-organisms.* In some cases scarcely any were arrested, and many of the filters were found to act as culture beds for the disease germs experimented with. Thus one ordinary cottage filter was infected with Koch's cholera bacillus, and was afterwards fed daily with ordinary tap-water. For thirty-two days the tap-water that passed through that filter was found to contain the cholera bacillus. Filters, of which 22,000 are alleged to be in use by our Government in military hospitals and barracks, when tested with the typhoid bacillus in the proportion of 20,000 to 30,000 in the unfiltered water, were found to pass into the filtered water as many as 5,000 to 6,000 of the disease germs. Another make, of which 300,000 are alleged to be in general use, passed from 9,000 to 10,000 typhoid bacilli into the filtered water. Perhaps some earnest member of Parliament may have enough regard for our soldiers and sailors to inquire next session who is responsible for supplying our army and navy with these deadly disseminators of disease. We have recently been thanking heaven that we are not as the French are. There are some matters in which it would be exceedingly to the advantage of the public service if we were as our Gallic neighbours. Drs. Sims Woodhead and Cartwright Wood only give wider publicity to what has been well-known to filter experts. We long ago published the experiments of Dr. Guinochet and the investigations of Chamberland, Miquel, Frankland, Kirchner, Prochnick, and others, showing that ordinary filters contaminate water instead of purifying it. Those responsible for the well-being of the French Army do what our officials apparently take no interest in doing—they carefully follow scientific advancement. The French Minister of War reported, as far back as 1889, in favour of the adoption of one of the only two filters out of the thirty-five examined by Drs. Sims Woodhead and Cartwright Wood which proved to really yield water free from germs, viz., The Pasteur Germ Filter.

The statistics of sickness in the French Army are kept and checked with the utmost care, each case being reported independently by the corps to which the patient is attached and by the hospital where he is received. The Pasteur Filter was adopted in the French Army as a preventive against typhoid fever, of which the previous average number of cases in the army had been 6,881 per year, and in the Paris barracks 1,270. The filters began to be introduced in 1888, and the number of cases of typhoid fever in 1889 (the first completed year of the experiment)

and following years were officially reported to the President of the Republic by M. de Freycinet, Minister of War.

The figures show a continuous and rapid decrease of typhoid fever, till more than 75 per cent. of the typhoid fever in the Paris barracks and more than one-half of that in the whole French Army had been stopped in three years after the introduction of the Pasteur Filter; and in the report of 1892, M. de Freycinet, reporting a still further reduction, adds: "Wherever the Pasteur Filter has been applied to water previously bad, typhoid fever has disappeared."

The Minister of Education, as a preventive against the cholera epidemic of 1892, forbade the drinking in any school in France of any water which had not passed through a Pasteur Filter. The schools were practically free from the epidemic, even in infected districts.

Dr. Barthélemy, who had personal medical charge of troops in the French expedition into Dahomey, in August, 1892, reports that so long as all the drinking water was filtered through the Pasteur Filters the troops under his charge were absolutely free from dysentery, which attacked them directly after the use of the filters were discontinued.

In the light of these facts it would be interesting to know if the Pasteur Germ Filter was ever offered to our War and Admiralty officials, and if they experimented with it before wasting all the thousands of pounds expended in purchasing the disease-disseminating death-traps they have supplied for Tommy Atkins and poor Jack. It is a sinister satire on Lord Wolsley's advice to Tommy to drink nothing but water. Our advice to Tommy is to leave barrack-room water severely alone so long as it comes to him through the present filthy polluting filters.

LIQUORICE IMPOSTURES.

THE search of Diogenes for an honest man was scarcely more difficult than would be that of the average man for genuine liquorice; for, strange to say, liquorice is adulterated to any extent, and there is no definite standard of purity for this generally used article. Potato starch, millers' sweepings mixed with sugar, and rubbish of any kind are added to it. We have examined samples that swarmed with weevils, and have found liquorice in the establishments of reputable chemists that contained farinaceous substances in heavy proportions. This ought not to be allowed, for the juice is extensively used in the manufacture of lozenges, and in many pharmaceutical preparations. Mr. Simmonds, in the *Bulletin of Pharmacy*, says:—

"The inspissated juice, popularly known as 'Spanish juice,' is the sweet extract of the root boiled down and evaporated to dryness. When the extract has been obtained, it is formed into rolls, about eight inches in length, bound with bay leaves to prevent their adhering together. The best quality should be quite black, bright, brittle without pores; break with a glossy fracture; have a good smell, a sweet taste without empyreuma; and be almost entirely soluble in water. It is, however, much adulterated—the French to the extent of 70 per cent. Containing an emollient principle, liquorice is prescribed medicinally in catarrhs and tickling coughs, in the form of extract and powder; frequently in lozenges. Its medicinal properties cause it to be used as an excellent demulcent, in the form of decoction, in catarrhal affections and in irritation of the mucous membranes of the bowels and urinary passages. It is also a useful adjuvant to decoctions of bitter and irritating vegetable substances. In the preparation of pills it is employed to give them consistence and prevent adhesion. It is also an important ingredient in compound decoction of aloes.

"In China the roots of *Glycyrrhiza echinata* and *G. glabra* are used in a great variety of medicinal preparations possessing tonic, alterative, and expectorant properties, and as a mild aperient. Its importance in Chinese pharmacy is next only to that of ginseng, and to it are attributed rejuvenating and highly nutritive qualities.

"The Continental names for liquorice are chiefly derived from the Spanish and Italian *Regaliz* and *Regolizia*; in French, *Reglisse*. The German is *Sussholz*. The qualities of the root vary greatly in different countries. The juice from Turkey and Greece is said to be bitter; that from Sicily and Spain sweet; but that from Italy is the richest of all. The best brand is Solazzi. The root is largely grown in Russia, Spain, Sicily, and Asia Minor; in Persia, plains are covered with it, but it is generally looked upon as a nuisance by farmers, who try their best to extirpate it.

"The root varies in quantity and quality according to soil in different countries and districts, changing its colour to red, yellow, or brown, and the proportions of saccharine and starch vary also.

"A crop can be gathered every three or four years from the same ground, and the digging commences after the autumnal rains have set in. In Asia Minor the digging begins in October. There are two kinds of liquorice root; one which sends down a tap-root from three to six feet deep, and the other only half that depth. Hence the latter is more highly prized. Damascus exported 8,400 cwt. of the root in 1891, valued at £2,000.

"The liquorice-root grown in Yorkshire, England, is mostly used for the preparation of the lozenges known as Pomfret cakes, which are made at Pontefract. In the Caucasus the root grows wild in abundance, and large quantities are sent to England and North America. Two factories established by British subjects in

Transcaucasus, each exported about 4,500 tons of roots in a year. The cultivation has been attempted in Virginia and other parts of the United States, but its profitable culture is doubtful, in view of the abundant production in Europe and Asia. The sweet sub-acrid mucilaginous juice contained in the root is much esteemed as a pectoral demulcent."

Of the numerous samples we have examined, only one, viz., Solazzi, was found to be of genuine quality, and it must be confessed that it is scandalous that there should be practically a *cassez faire* in the adulteration of liquorice.

MALTOSE versus GLUCOSE.

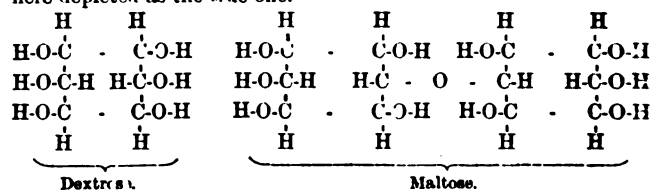
By R. G. ECCLES, M.D., BROOKLYN.

THE physiological reasons for my recently published objections to glucose as a food were, I thought, so well understood by educated men that I did not attempt at that time to amplify them. I was surprised, however, to learn that a number of my acquaintances had got the impression that my reasons given for its condemnation might apply also against prepared foods for infants and invalids and the various malt preparations on the market. It thus became evident that in the minds of even medical men there was still considerable confusion concerning settled points in the physiological chemistry of starch digestion. Hoesa's exclamation of "My people are destroyed for lack of knowledge!" may prove to be an apt quotation at this juncture. The misunderstanding of this subject is likely to lead to results fraught with danger to their patient, for it appears that a number of physicians hold to the notion that the ptyalin of the saliva converts starch into grape sugar, glucose, or dextrose. This error was refuted almost half a century ago, but periodically it is found to crop out in medical literature or enter as a factor into medical polemics.

The first discovery of the production of sugar from starch was made by Kirchoff in 1811.* He showed that dilute sulphuric acid when boiled with starch converted it into sugar. In 1813 he also discovered that grain, and especially malted grain, contained an albuminous substance capable of producing sugar from starch.† He considered the sugars of these two methods of transformation identical. In 1831 Leuchs found that saliva had the power of changing boiled starch into sugar.‡ In 1833 Payen and Persoz succeeded in separating the amylolytic ferment from germinating barley and to the new product they gave the name diastase.§

In 1845 Mialhe separated the ferment from saliva and called it animal diastase.|| He believed that the diastase from malt and the new product from the saliva were the same, and that the sugars of both were identical with that produced by boiling with dilute sulphuric acid. It remained for Dubrunfaut, in 1847, to prove the falsity of part of this conclusion. He showed that, whereas the two organic enzymes produced the same sugar, that which was developed by boiling starch with sulphuric acid was quite a different one.¹ To the sugar produced by the action of the enzymes he gave the name maltose. His work remained unverified and almost unnoticed till 1878, when Musculus took up the subject, confirming what had been said, and adding more to our knowledge in the same direction. Since then this matter has been repeatedly confirmed by a large number of experimenters, but the work of Brown, Heron, and Morris completely set the matter at rest by placing it on a thoroughly reliable basis.² This work was done between 1879 and 1885. It was at this time that the proof was discovered of the identity of the products of diastatic and ptyalic digestion, though it was clearly shown that diastase and ptyalin could not be alike. Maltose and not dextrose is the product of the action of the organic enzymes. O'Sullivan has shown us how these two sugars possess different rotatory powers under polarised light and different crystalline forms, and how they reduce Fehling's solution in entirely unlike degrees.³ Maltose, he has shown, is isomeric in structure with ordinary cane sugar or sucrose.

The difference between these sugars becomes apparent on placing two graphic formulæ together that contain their elements in proper proportions. The exact structures not having been determined, these are, of course, but fanciful arrangements and are only introduced to facilitate thought. It is quite certain that the true formulæ, if we knew them, would be related in some such manner. Indeed, the fact that the sugars so readily produce oxalic acid on oxidation, points to some such structure as that here depicted as the true one.



* Schwelg, *Journal*, iv., 108.

† *Ibid.*, xiv., 389.

‡ Wagner's *Handwörterbuch d. Physiol.*, vol. iii., part 1, p. 76c.

§ *Annales de chimie et de physique*, vol. liii. (1833), p. 78.

|| *Comptes rendus des séances de l'Académie des sciences*, vol. xx., part 1, page 964.

¹ *Annales ch. phys.*, ser. 3, vol. xxi., p. 178.

² *Journal of the Chem. Soc.* (Transactions), p. 596; *ibid.*, 1885, p. 527.

³ *Journal of the Chem. Soc.*, second series, vol. x., p. 579.

The first act of digestion in the human body is that of the enzyme of the saliva upon starch, the product of which we see in maltose and not in dextrose. The importance of this fact will be made clear when we come to consider the successive steps in the assimilation of food. The physiological balance of our bodies can only be properly maintained by the thorough mastication of our food, as much because of this fact as for any reason hitherto assigned. Whoever fails to impregnate what he eats with saliva and its ptyalin is courting dyspepsia by hindering other subsequent acts of digestion. One of the gravest mistakes we have made in the past has been in supposing that the stomach only had to deal with proteids—that within it only albumen, casein, gluten, and the like were disposed of. The fact is that the very first important act performed in the stomach is the digesting of starch. All gluten reaches it enveloped in an insoluble coating like the sugar or gelatin on the outside of a pill. To make way for the digestion of proteids this must be rendered soluble and removed. To do so starch-digesting has to be the first task of the stomach. Following it comes proteid digestion. Digestion is both an alternating and a simultaneous process, and the alternations are not as few as we had supposed. When it was discovered that ptyalin action was arrested by hydrochloric acid, the assumption hastily made was that it had no very important place to fill. We supposed that the conversion of the trifling amount of starch during the act of mastication was all the duty it performed. Believing that gastric digestion began as soon as our food entered our stomachs, and likewise assuming that the hydrochloric acid came at once and destroyed the saliva enzyme, there was no alternative but to believe that nature had made a gigantic mistake in supplying the mouth with a special ferment of this kind that was neither useful nor ornamental. The facts, however, were not all in, and we were found “reckoning without our hosts.” Ptyalin never was intended by Nature to do its digestion in the mouth. We have now discovered that it works with vastly greater vigour in a neutral than in an alkaline medium. As found in the mouth it is alkaline. Shall we hastily assume that this, too, is one of Nature's blunders? On food entering the stomach, the flow of acid gastric juice slowly neutralises the ptyalin. The longer the food has been chewed the more of the alkaline medium is present and the longer it remains in the stomach before reaching a condition of acidity. Its power is exerted with steady but certain acceleration up to the point that acid and alkali balance, when retardation slowly sets in. Nature, then, has evidently made no mistake. Not only is the ptyalin a necessary agent in digestion, but the alkalinity of the saliva is equally necessary and its function a useful one. To it we owe the fact discovered by Veldon, that it takes the stomach three quarters of an hour after the ingestion of food to reach the point where free acid appears. Clittenden, Ely, and Smith have proved the increasing power of the ptyalin up to the point of neutrality, and Haliburton suggests that the acid peptones may retard the ptyalin before free acid appears. View it as we will, there is about half an hour and sometimes more time given up to starch digestion by the stomach before it can fairly begin the production of peptones. Americans, more than any other people on the earth, are given to “bolting” their food, and as a consequence dyspepsia is a national disease. The ptyalin does not get mixed with the food. The starch is not digested from around the gluten. The pepsin cannot do its work, and disease is the consequence. This is the reason why diastase plays so important a part in therapeutics, in spite of the fact that from the old standpoint such treatment was scoffed at by the knowing ones as unscientific. The fact, as it now appears, by the very latest developments of physiological chemistry, is emphatically in favour of just this very line of treatment.

To those who, from force of habit, haste, or bad teeth, fail in fully masticating their food and thoroughly impregnating it with their saliva, no safer course could be pursued than to take with their meals a tablespoonful of a good active malt preparation. The higher the diastatic value of the preparation the more efficient it will prove. To such as fail to secrete sufficient ptyalin, because of an atrophied condition of the supplying glands brought on by years of past neglect in the particular here referred to, it would almost seem to be an imperative necessity that they follow this advice if they wish their bodies to be properly nourished. Such treatment helps the gastric juice to do its duty far more effectively than by giving pepsin. As an artificial aid to digestion pepsin fails because it cannot get at the gluten of the bread, because it is buried in starch. Digest this starch with added diastase, and the evil is overcome. The pepsin can then accomplish its work.

When the stomach completes its task the ferments of the pancreas are called into use. There are four of them. The amyllopsin takes the place of the ptyalin and digests starch, the trypsin takes the place of the pepsin and digests albuminoids, the steapsin splits up the fats and oils, and an unnamed ferment manifests a curdling power on milk. The product of the digestion of amyllopsin is also maltose. From the mouth to the duodenum no trace of the production of dextrose is apparent. Why is this so? Neither maltose nor cane sugar can be assimilated as such. It is only as dextrose or levulose that they are capable of entering the blood.* If, however, the mucous membrane of the intestines in finely divided condition is immersed in starch solution, dextrose results.† The

cells of this part of the body have the power of inverting sugar. It is natural on this account to assume that all kinds of sugar are changed into dextrose at this point and are carried into the lacteals or blood-vessels. No such inversion occurs further up. The stomach and upper part of the duodenum seem to be effectually guarded against the production of dextrose. Surely there is some good reason for this. Whether our belief is in natural selection or creation, we must necessarily look for a reason for the perpetuation of this condition of things. We must look upon it as an adjustment of the organism to conditions tending toward its perpetuation. Viewed as such, then, we should expect to discover that for the stomach to absorb large amounts of dextrose would result in injury. A constant amount of dextrose is being supplied to the blood from the glycogen of the liver and from the glycogen of muscle.‡ This dextrose has to be oxidised or it would rapidly increase in the blood, bringing on a condition of glycosuria. The physiological balances always maintained in health make the oxygen supply just adequate to the normal demand here pointed out. Any additional demand would necessarily overtax normal function. If, under such conditions, dextrose is poured into the stomach in large amounts, its direct absorption into the blood puts an unusual strain on the oxygen supply, and the glycogen is dammed back in the liver and muscles, while a whole train of reverse processes is set up the consequences of which we are unable to forecast. Who can say how much of the anæmia, headaches, chorea, and other ailments of school children is due to the eating of glucose candy? Who can tell how many cases of incipient diabetes are developed by the use of inverted sugar? With pure sucrose and maltose, absorption can only occur in the way and at the places Nature has appointed for such a duty. The whole mucous membrane of the small intestines produces an enzyme that has the power of converting maltose into dextrose and cane sugar into levulose and dextrose.§

When sugar is inverted at this place there is no opportunity for it to fill the stomach with putrid or sour food by its remarkable powers of fermentation. No known substance more easily becomes the prey of micro-organisms. In this fact, indeed, lies its chief source of danger to the user. As the stomach is always invaded by such pests carried in both in food and in drink, delayed digestion in the presence of glucose, the principal part of which is dextrose, is very likely to result in sour stomach with its concomitant evils. Syrups that have been adulterated with glucose and preserves that have been sweetened therewith thus become a menace to health. Imperfectly masticated food that has not become sufficiently impregnated with ptyalin is in the same manner likely to sour. A dose of bicarbonate of sodium may bring a momentary relief, but is pretty sure to be followed by a speedy recurrence of the evil. The proper remedy to give where such a tendency is known to exist is a dose of diastase to perfect and hasten digestion. This enzyme is best administered in a thick malt extract, where it is found sufficiently concentrated to be of actual worth. But here a danger lurks. Dextrose syrup, under the commercial name of glucose, is only worth from a cent and a half to two cents a pound if bought in large quantities. It is of about the same consistence as a thick extract of malt and could easily be used as an adulterant. A pure malt preparation costs vastly more, so that the desire to mix them is quite tempting to an unscrupulous person. The practical difficulties in the way of detecting such an adulteration are so great that but few would go to the expense or trouble. When the writer had definitely settled upon writing this paper it was resolved that the investigation of the point here raised was important. What would be the use of advocating the advantages of a malt extract to overcome certain evils when the presence of glucose in that very extract would augment the evils sought to be overcome? The easiest way to settle the question was to visit a place where malt extract was manufactured and look out for signs of glucose. Had a factory been near New York where a low-grade article was made our choice for a call would naturally have been to it. Fortune did not favour us in this respect. The only manufactory in this part of the country is one having the reputation of supplying the most active diastatic preparation on the market. I visited Yonkers, went to the extensive works of the Maltine Company, and asked to be shown around. On learning who the visitor was the chemist in charge took particular pains to show and explain their various processes. He showed me the barley, wheat, and oats used, the different preparations that they make, and the machinery employed. I examined their vacuum pans, their malt mills with their fine vernier adjustments for cutting, their great stock of coca leaves for making their maltine with coca wine, their agitators, and their bottling machines. He showed me where they assayed the finished product to determine its diastatic value before sending it out.

We went down into the storage basement and up into the garret, and, keeping my own counsel, while watching eagerly for glucose, I found none anywhere or anything that indicated its presence in or around the place. The chemist told me that he had lately succeeded in shortening one part of his work three-quarters of an hour, and so adding to the diastatic value of maltine, high as it was before. He pointed out, what was already a familiar fact to me, the great value of maltine as a nutrient, independent of its diastatic power. Practical, clinical experience of its value is abundant. It contains not only the maltose from the digestion of

* Bimmermann. *Pflüger's Arch.*, Bd. xx. (1879), S. 201.

† *Proc. of the Royal Soc.*, No 204 (1890), p. 393.

‡ *Pflüger's Arch.*, Bd., xxiv. (1881), S. 23.

§ *Gumgee's Phys. Chem.*, vol. II., p. 416.

its starch; but the albuminoids of wheat, oats, and barley besides. Chemical analysis places it in the front rank of digestive agents, and a most careful examination of its composition fails to reveal the presence of glucose.

DR. BOSTOCK HILL ON CONDENSED MILK.

IN a recent report Dr. Bostock Hill stated that he desired to call attention to the fact that it is the custom for condensed milk to be sold, stating on the label "in condensation nothing but water is taken from it, and only a small quantity of pure cane sugar added." In one sample submitted during the quarter, he found that the quantity of added cane sugar considerably exceeded 30 per cent., and as its presence was unnecessary, and in many respects deleterious to the health of infants and invalids, it was a question whether proceedings should not be taken against the vendors. It seemed hardly a proper statement of fact to call one-third of the entire bulk of the article a small quantity.

BAKING-POWDER AND ALUM.

OF samples of baking powder sold in Bethnal Green at 2d. per lb., one was found by the public analyst to contain 53½ per cent. of powdered rice, the other 40 per cent.; the former containing also tartaric acid and bicarbonate of soda. The latter contained alum as well as bicarbonate of soda. Mr. Stokes says:—"The presence of so large a quantity of rice explains their cheapness; some starchy matter, such as rice, is advisably present to prevent the powder deteriorating in strength before use. But so large a proportion as 50 per cent. is not necessary. Baking powders, however, hold a peculiar position. It has been held by one of the higher law courts that baking powder is neither a drug nor a food, so that until it forms part of some bread, the vendor cannot be prosecuted for using alum as one of its constituents. Until further legislation takes place, baking powder may be made up of almost any things that are not absolutely poisonous."

A TEST CASE UNDER THE FOOD AND DRUGS ACT.

AT the Skipton Police-court, on January 26th, a case of interest to grocers and provision dealers was heard, in which John Harrison, grocer, Keighley-road, Skipton, was summoned by Inspector A. Randerson for refusing to sell him a quantity of margarine—which was exposed for sale—for the purpose of being analysed. Mr. Brutton, from the office of the County Council's solicitors, prosecuted, and Mr. Waugh, barrister, defended. The simple issue to be dealt with by the Court was whether the defendant was justified in refusing to sell out of a whole keg of margarine standing on the counter of his shop, and which was labelled 6d. per lb. The defendant refused to sell any portion of the keg to the inspector, but offered to supply him with some of the same quality standing on the counter. This was refused. The defence put forward was that the keg in question was not exposed for sale by retail, and, if so, then the inspector had no right to demand that it should be cut into. It would be monstrous, submitted Mr. Waugh, if an inspector were entitled to go into a shop and demand samples out of as many kegs as he liked. The Act of Parliament never contemplated such a possibility. The Bench, after hearing evidence, decided that there was no doubt of the article in question being exposed for sale by retail. The public must be cautious in refusing to supply an inspector with goods required for the purpose of analysis. If they did so they were liable to a heavy penalty. As that was a test case the full penalty would not be inflicted, but the mitigated fine of 20s. and costs would be imposed.

A MONTH'S IMPRISONMENT FOR BUTTER FRAUDS.

AT Thames, Edward Plenty, of the Daisy Dairy, Redman's-road, Mile-end, was summoned for selling butter which consisted entirely of margarine. Mr. Young, who prosecuted, said the defendant, in order to attract customers, had printed cards circulated to the effect that the holder was entitled to "¼ lb. butter and a 2lb. loaf of bread for 4d." A person in the service of the Mile-end Vestry presented a card, and was supplied with the "butter" and bread. Mr. Lyons, sanitary inspector, then walked in, and stated that the articles had been purchased for the purpose of analysis. The defendant thereupon made use of disgusting language and snatched away the butter. Mr. Lyons threatened to give him into custody for stealing the article and he then returned it. It was afterwards found to consist entirely of margarine. Mr. Bedford, who defended, called his client into the witness-box. The defendant said he sold the article for margarine, as for 4d. one could not get stuff good enough to be used for cart grease.—Mr. Young: Have you been here before?—The defendant: You know I have.—Mr. Young: I thought I recognised your face.—The defendant: We have had dealings together.—Mr. Young: What have you been here for?—The defendant: I have been convicted for conspiracy to defraud, and am a licensed man at the present time.—Mr. Mead said the case was unlike many that came before him, as here swindling had clearly been proved, and he was satisfied that the defendant had perpetrated a fraud. Many persons had doubtless been cheated by him, and the case was aggravated by the fact that the defendant had already been convicted for fraud. The full penalty of £20 would be inflicted.—The defendant: I have not the money and no goods.—Mr. Mead: Then you must go to prison for one month.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. JAMES LONG'S EVIDENCE.

XXXI.

(Continued from page 32.)

SIR MARK STEWART: One question arising out of Mr. Channing's examination: do you say that you find no difference in the quality of milk of cows owing to the feeding that they receive?—No material difference.—If a cow is fed on bean meal heavily, does it not produce a richer quality of milk?—I would not say that it does. In my experience I have found no essential difference whatever the feed has been, except with regard to the yield. I believe bean meal is an excellent food to increase the yield.—And cotton cake is generally supposed by farmers, is it not, to increase the richness of the milk?—It is supposed to, but there is no real evidence upon that point.—Colonel Warde: I think you said just now that the registration of retailers of milk and the inspection of their premises is very ineffectually carried out at present?—Yes.—Can you give us any reason for that?—No, excepting a lack of energy on the part of the local authorities, a lack of sympathy on the part of those who are supposed to inspect with the work they are required to perform; a general laxity all round. It appears to be nobody's business, or rather everybody's business, and therefore nobody's business.—Can you suggest any remedy in the way of any alteration in the law, or anything to make it more compulsory?—Only that the whole of the work of dairy inspection should be placed under one bureau or department, and that the officers should be appointed and should be compulsorily required to carry out the work.—Mr. Colman: You said in one of your answers on Friday last that you believed that Dr. Bell and his staff had been very commonly responsible for permitting fraud to be continued, by the mild way in which their analyses are made?—Yes.—And you say the same as to milk?—Yes.—You think they have been much too lenient upon milk?—Much too lenient.—You were asked a question just now as to the price of fresh milk; I understand that it was put at from 6d. to 8d. a gallon. Would you say that that is the price that the farmers can get on an average the year through at their own farms?—I think they get more than that on their own farms?—Sixpence to 8d. at the farmyard?—Sixpence to 8d. at the farmyard.—The question was put in reference to separated milk at 1d. and 1½d.; and the circumstances would be precisely the same at the farmyard, would they not?—Yes.—Do you think that 6d. or 8d. would be a fair price as compared with the 1d. and 1½d. at the farmyard?—No. I rather suggest 7½d. to 8d.—At the farmyard?—At the farmyard.—Do you consider the separation of milk advantageous to the farmers; I mean the new modern method of separating their cream; is that an advantage to the farmer?—In many cases it is, but I think in some cases it is not; it depends upon the class of work that he performs, whether he sells his milk, in which case it is not advantageous; or whether he makes butter, in which case it is advantageous; or whether he makes cheese.—I presume that the separator has sprung up and got into use to a great extent because they get more butter or cheese from the cows in that way than they did in the old way?—They get more butter, certainly, but I would not like to say that the butter is of a higher quality.—As to the question of the price of butter, have you any information at all as to what Australian butter is coming in at, and how far that is affecting the price of English butter?—I cannot give you data at the present time (this is out of the season), but last year Australian butter was being retailed at from 11d. to 14d. a lb. I am bound to say, to be fair to that class of butter, that in some cases the consumers would not have been able to obtain good butter at all but for the Australian butter.—Have you any idea how those prices remunerated the Australian producers?—I receive their papers, and occasionally reports; I myself reported for the Government of New Zealand on the industries of the colony; and they say, just as much as we do, that they are dissatisfied with the prices which they obtain.—Sir Mark Stewart: What are the expenses off the 11d. a lb. for freight and so on?—I think the freight costs about 1d.; I would not like to speak with certainty.—And 1d. here for selling, or 1½d.?—I think the 1d. would include the whole.—Mr. Colman: You said that in America they had stamped out the sale of margarine?—In New York State.—Not in America?—No; not in America.—Then in other parts of America there is a considerable quantity of margarine or other butter substitutes sold?—There is; there is a different law in every State of the Union, and it depends very much upon the nature of the law whether the sale of margarine or its manufacture is large or small.—You gave us the cost of butter in New York; do you know anything about the cost of it at other places in the States?—No; I could not give you any figures with regard to any other place.—Would it be anything like this: Boston 1s. 10d. and Philadelphia 1s. 11d.?—I should say not; I should say that those are rare prices. I know what is realised by some of the best makers; take for example, Vice-president Morton, who has Leviathan Farm on the Hudson River; he obtains about 1s. 6d. a lb. in the summer season for butter made upon the English principle.—Mr. Frye: The wholesale price?—Yes, the wholesale price supplied to hotels.

(To be continued.)

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Food and Sanitation.

SATURDAY, FEBRUARY 9TH, 1895.

FACTS ABOUT KOLA.

THE public are now being recommended to use Kola, and astounding assertions are made in its favour. The Editor of the *Medical Age* has the following searching observations on the "new" nostrum.

"But what is this Kola nut? Merely the seed of a tree indigenous to tropical regions, possessed of properties identical with those of coffee, tea, guarana, and Paraguayan maté. The chief active principles are caffeine, of which there is about 2.5 per cent.—about one-half the yield in tea, and slightly greater than in roasted coffee; an infinitesimal amount of theobromine; 1.5 per

cent. tannin; and starch, cellulose, and the other ordinary constituents of seeds. It is a product so "new" that it was described as early as the sixteenth century; and its virtues at that period were so thoroughly tested in Europe, that it was speedily relegated to desuetude. As in its native haunt it is chiefly used by burden-carriers, a class who perform very severe work on comparatively little food, it was perhaps natural their powers of endurance should be attributed to Kola; but as the active principles contained, and its effects upon the economy, are identical with those of tea and coffee, it can be readily understood to what extent and under what circumstances it is apt to act as a refreshing stimulant or as a means of sustenance. The observations made by Surgeon Frith, in the habitat of the nut, on British soldiers,* proved that Kola is in no sense a food, that it does not affect the output of nitrogen from the body, and that while it possesses some slight power when taken continuously under exertion or during fasting, it is far from being marked in warding off the sense of hunger and fatigue, and really inferior to tea. Any benefit that may be derived from it in nervous maladies, in alcoholic craving, or as a diuretic or heart stimulant, depends entirely upon the contained caffeine, while the results claimed to follow upon its administration in diarrhoea and dysentery are only those that accrue to coffee, which, in many countries, notably of Central Europe, is a favourite remedy under like conditions. Upon the reproductive organs its effects are absolutely nil.

Thus Kola is one of many sources from whence may be derived caffeine; and an attempt to force anew upon the profession and general public a "cure all" savours strongly of impudence, since it offers nothing in either dietetics or therapeutics above other cheaper and more profitable sources of this alkaloid. Such procedure, to put it in the most mild light, "constitutes a ghoulish science calculated to delude a dying man with a pretence."

We would not be held as declaring that the sale of, or manufacture of preparations from, Kola is either illegitimate or unfair. On the contrary, if there is a legitimate demand, therefore, it is undoubtedly the right and privilege of every pharmacist to cater thereto; but to attempt first to create the demand falsely, and then to force the product upon the public as a panacea, savours too loudly of the schemes of the patent-medicine man and street-corner fakir.

The rubbish, too, regarding "fresh (undried)" Kola, is both sophistical and chimerical. It is well known that all caffeine derivatives are much more rich in alkaloid after drying than in a green state, that roast coffee yields a greater percentage than the green berry, and cured tea-leaves more than the undried. Yet so far as Kola is concerned there is no appreciable difference, except perhaps in the amount of useless and effete matters commonly described as "extractives." Then, too, when is remembered the fact that this "fresh (undried)" Kola is claimed to be imported from Central Africa and Sierra Leone, or by way of the Soudan, that the means of communication with these portions of the "Dark Continent" by the civilised world are by no means electric or telegraphic in point of speed—that no "Campania" or "Lucania" plies along the pest-ridden shore—that at moderate computation three or four months must intervene between the gathering and laying down in London, which is the distributing mart, and that as many weeks more must elapse ere they can reach the heart of the United States and be transformed into fluid preparations, the value of the adjective *fresh* can be imagined, and likewise what unusual advantages are

*Practitioner, Vol. XLIII., 1889; *British Medical Journal*, July 27, 1889.

possessed over the every-day Kola nuts to be found in any pharmacy.

There are in the market, among the wares of many manufacturing houses, numerous pleasant-tasting preparations of Kola which in some few instances are claimed as positive cures for this, that, and the other, all appealing to the worst passions of the race; and examination of the majority of these reveals the fact that they are merely well-flavoured *toddies*! Their component parts are chiefly alcohol, being made from clear spirits, or sometimes with the addition of a little poor wine or bad brandy, the flavour duly disguised by means of essential oils, aromatics, and syrups. They are intended to cater to the drink habit, and are pledged to relieve "big head" of certain kinds, abolish sexual frigidity, and entirely cure impotence. The price in the main is largely in excess of the value of the drug represented—often, indeed, exorbitant; but then such preparations must appeal to the class for whom they are especially intended—those who desire cocktails, pick-me-ups, and purported temperance draughts embodying all the stimulant properties of a spirituous liquor—and the consumer should pay for the luxury.

In the interests of medicine, and in the interests of temperance and morality, we think it a duty of the profession to call a halt, both in the manufacturing and promoting of so-called pharmaceuticals of this class; and we again call attention to the fact that by winking at their manufacture, legitimate business is taken from the practitioner and placed in the hands of the peripatetic laity; that the manufacturer seeks his chief consumer in the lay public; that his interests are sordid, and every way inimical to medical art.

FACTS *re* AMERICAN BEEF.

THE New York State Board of Health says that tuberculous cattle are no doubt extensively distributed through the dairies of the State, and that protection is required for the citizens who use the milk and the butter from such animals.

Governor Hogg, of Texas, has issued a proclamation declaring a quarantine against Mexican cattle arriving in Texas. The Live Stock Sanitary Commission of that State has discovered splenic fever among Mexican cattle, also that there are no sanitary regulations in that country to prevent the spread of the disease.

The report of the Massachusetts Cattle Commission on tuberculosis discloses the fact that in the two principal stock yards of the State, namely, at Watertown and Brighton, the condemnation of cattle found diseased amounted to about 12 per cent. It is expected that the general average of the State will be about 8½ per cent, and this will mean the slaughtering of nearly 25,000 cattle.

THE "BOND" TEA SWINDLE.

ALBERT EDWARD LYCETT, carrying on business as a tea-dealer in Hanley, was convicted at the local police-court of keeping a lottery. An inspector of police proved that he bought a quarter of a pound of tea from the defendant, for which he paid 6d. He received the tea in a wrapper which said that Lycett and Co. gave £10 to every customer. The stipendiary, Mr. Harold Wright, in sentencing the defendant to pay a fine of £25 and £7 13s. costs, said that the way in which the business had been done was that it was advertised that any customer who came to the shop would receive a bond of the value of £10, and that that bond would be redeemed when 120,000 boxes of 100lb. of tea each had been sold. Suppose that Mr. Lycett had 1,000 customers per day, and that continued through the whole year, it would take 150 years to sell all the tea. Suppose all the tea were sold, Mr. Lycett would become indebted for an amount equal to about half the National Debt. It was impossible for anyone who had heard the evidence to say that the thing was anything else than a swindle.

THE MATTEI SWINDLE IN COURT, BUT W. T. STEAD WAS ABSENT.

THE thieving nostrum which W. T. Stead foisted upon the public occupied the attention of his honour Judge Masterman, on January 15th, at Workop County-court.

At a previous sitting a lady named Blakeley, who lived at "The Mattei Depôt," Newcastle-avenue, Workop, sued a number of Workop and district residents for sums of money which she alleged were due to her for medicines supplied. At the hearing of the case it appeared that the plaintiff had represented herself as a doctor, and had dispensed the Mattei remedies. A young lady, named Nelly Pinder, who appeared for the plaintiff, said the prescriptions were made up by herself, and they did not, according to her belief, contain poison. His Honour then adjourned the case in order to have the medicine analysed, and commenting on the fact that unlicensed persons were allowed to dispense things of this sort, he said that if allowed by law it was a source of danger to the public at large. At the first hearing several of the people who were sued alleged that the whole thing was a fraud. *The plaintiff was now represented by Mr. A. Charles, of Retford, who stated that the whole of the cases entered into at the previous court were now withdrawn*, and one of the defendants from Carlton-in-Lindrick asked for costs, and this Mr. Charles opposed on the ground that notice had been given the defendant, who need not have come, and His Honour said it was very likely he should not allow costs for the day, but whether he ought to have the costs of the previous attendance he would decide later. Mr. Charles said his client, being a woman, was ignorant of the mode of procedure and also of the law when she brought the action, but she had since been advised, and it was seen that she was wrong. *His Honour said from the analysis made by the county analyst, the contents of the bottles handed to him at the previous court consisted only of tap water, and if that had been given in evidence before him he should certainly not have found for the plaintiff.* Mr. Charles again said that his client had no cause for action. His Honour said plaintiff must pay for going outside the law. He allowed the defendants who appeared the costs for attending the previous court. His Honour further remarked that the county analyst failed to find anything in the bottles except tap water, and was also satisfied that there was no appreciable medicinal active ingredient.

ADMIRAL FIELD IMPROVES.

ADMIRAL E. FIELD, M.P., Colonels C. M. Longmore and L. G. Rodney, Dr. J. R. Kealy and Mr. E. Laphorn were in attendance at the Gosport Petty Sessions, on January 22nd, when George Jones, grocer's manager, was summoned by Ernest George Hawkins, Inspector of Police at Alton, for selling to him, to his prejudice, butter adulterated with 17 parts of foreign fat. Mr. E. J. Harvey appeared for the defence, and took a preliminary objection to the proceedings. Jones was not the seller of the butter. A man named Johnson sold the butter. Jones was one of the servants of Mr. Williams, who traded as the World's Tea Company in a house not registered in the name of Jones. Jones was not the manager, but a weekly servant, subject to dismissal at three days' notice. He submitted that Mr. Williams should have been summoned. Mr. Williams was a large merchant in London. He had no manager, but came down once a fortnight to look over the assistants' work.—Mr. Hawkins said he would prove that Jones told him he was the manager, and responsible. A long legal argument ensued, and Mr. Harvey said that Mr. Williams was quite prepared to become defendant. Admiral Field said it was only just that the owners should be summoned, and the information was therefore amended, Edward Williams being substituted for George Jones. Mr. Hawkins said he was in charge of the Alton Division of Police and an inspector under the Food and Drugs Act. He forwarded one part of the butter to the county analyst, retained one, and gave Jones the other. The butter was wrapped in the paper produced, which was marked "The World's Tea Company's Delicious Butter. Guaranteed Absolutely Pure." The analyst's certificate said the butter was adulterated, being a mixture of 83 parts of butter and 17 parts of foreign fat. Mr. Harvey said the defence was that the defendant had a warranty that the butter was pure when he received it. It was Australian butter, and came over in a cold storage room, which rendered it so hard that it was impossible to

adulterate it after being unshipped. Mr. T. R. Bond, salesman to Mr. A. Mostyn, Tooley-street, London, said to be one of the largest importers of Colonial butter in England, said that on December 8th he took some samples of butter to defendant, who afterwards bought 101 $\frac{1}{2}$ wt boxes, the invoice for which (produced) was to the effect that it was pure butter. The butter was in boxes similar to that produced, and came in them from Melbourne through the Fresh Food and Fruit Storage Company. Each box was stamped by the Department of Agriculture for the Colony of Victoria. The butter was considered one of the finest brands in the market, and always fetched the highest price.—By Mr. Hawkins: The invoice was a guarantee as well.—Mr. A. E. Martin, receiving clerk to defendant, proved the receipt and deposit in store of a number of cases of Australian butter on December 17th. Two of the boxes were sent to Gosport next day, unopened and untouched. The delivery of the boxes having been proved, Mr. G. Jones deposed that the box in question was opened, and the butter placed direct on the counter for sale. From the time the butter was received till the time the pound was sold it was not tampered with.—By the Bench: They sold margarine, some of which was in the shop at the time. Mrs. Healy was told the price of the margarine, 6d., 7d., and 8d. a pound, and witness said that all the butters were pure. Defendant, in the witness box, said he bought the butter as being pure. He had no doubt that it was sold in the same state. The present case was the first one with regard to Australian butter, the quality of which had hitherto not been doubted. He had had samples of the butter analysed at various times, and they came out pure. He had had the sample left by the inspector analysed by Dr. Muter, of London, and submitted to three tests. Out of two of them it came pure, and in the other the analyst agreed with the public analyst who analysed the other samples (Dr. Angell). Dr. Muter, however, said it was his opinion that the excess of foreign fats was the effect of cold storage, and not of impurity in the butter. Admiral Field said that was not evidence.—By Mr. Hawkins: He did not have an express written guarantee or warranty.—Mr. Hawkins contended that an invoice only was not sufficient warranty, and quoted a case (*Rook v. Ropley*) from *The Justice of the Peace* in support of his argument. John Jones, who was called Johnson because of the name of another assistant in the shop, deposed to cutting the butter, and Jack Harraway, butterman, also gave evidence. After a lengthy retirement, Admiral Field said the case had been ably argued by the solicitor and by the inspector who conducted the case. There was no question whatever that the facts in the information that there were 17 parts of foreign fat, had been proved. Therefore, the question turned on the warranty. As there was written underneath the invoice that the butter was guaranteed pure, the magistrates, acting as jury as well as judges in the case, were of opinion that this was sufficient warranty to exonerate the seller and purchaser from Mostyn. The prosecution was a very important one, and affected enormous interests in the importation of butter from the Colonies. The whole question turned on the warranty, and if the authorities, on receiving the report of the inspector, were of opinion that they would like to take the opinion of a Higher Court, they would gladly state a case, and there would be no necessity to send anyone down to ask officially for the case. The information would be dismissed. The case was not satisfactory as it stood, and the Bench hoped that the authorities at Somerset House would take some further action in the matter.

PROSECUTION CASES.

AT Bradford-on-Avon Petty Sessions, Isaac Evans, grocer, of Turley, was summoned for selling to Frank Beardsley, inspector of weights and measures and under the Sale of Food and Drugs Act, on December 28th, a quarter of a pound of coffee, adulterated with 90 per cent. of added chicory. Defendant said he bought the coffee of Mr. Wootten, of Trowbridge, and he was not aware but that he had the right to sell it the same as he purchased it. The Bench said defendant would have to pay half a crown and the cost of the analyst's fee, 10s. 6d., or in all £1 1s.

At Gloucester Police-court, on February, 1st, Thomas Hastings, milk-seller, Melbourne-street, was summoned by the sanitary authority, under the Food and Drugs Act, for selling milk adulterated with 18 per cent. of water, on January 7th. Mr. Seacombe prosecuted on behalf of the Town Clerk, and Mr. Langley-Smith appeared for defendant, who pleaded guilty, but said the milk was retailed by him in the same condition as purchased. Mr. Owner, sanitary inspector, estimated that the defendant sold forty gallons of milk per day; but, putting the sale at half that quantity, with the milk adulterated with 18 per cent. of water, a milk-seller would be making a profit of 5s. per day, or £1 15s. per week, or £90 per year. The Chairman, addressing the defendant, said the offence was regarded by the magistrates as a very serious one, and he would be fined £5 and costs. The law in these cases required a defendant to produce a warranty from the person from whom he purchased the milk, if the defence set up was that the milk was sold in the same state as received, and milkmen, for their own protection, would do well to insist upon getting such a warranty.

PETERBOROUGH APPOINTS AN ANALYST.

MR. JAMES BAYNES, F.I.C., F.C.S., public analyst, Hull, has been appointed public analyst to the County Council for the sake of Peterborough, and the appointment has received the sanction of the Local Government Board.

THE NEED FOR TAKING SAMPLES OF DRUGS.

AT Birmingham, on January 25th, Colin Clent, 28, Bolton-road, druggist, was fined 10s. and costs for selling 2oz. of precipitate of sulphur containing 47 per cent. of sulphate of lime. Inspector Davis proved visiting defendant's shop and purchasing 2oz. of precipitate of sulphur, which on analysis was found to contain 47 per cent. of sulphate of lime.

ALLEGED FALSE WARRANTY OF LARD.

AT Pontypridd Police-court, on January 30th, Messrs. Dixon and Sons, merchants, Bristol, were summoned by the Glamorgan County Council for supplying a false warranty of lard to Messrs. Davies and Co., grocers, Pontypridd. For the defence, Mr. Edward Dixon, of Bristol, stated that he had bought the lard from Messrs. Duerdon and Sons, refiners, Liverpool. He bought the whole of his lard from that firm, who guaranteed its pureness. The case was dismissed, the Stipendiary hoping that the case would be taken to a superior court.

MAIZE IN OATMEAL.

WILLIAM DAKIN, grocer, of the Market-place, South Normanton, was charged at Alfreton with having sold to William Marples 1lb. of oatmeal which was found to be adulterated with 3 per cent. of maize, on December 18th. Colonel Shortt, inspector of weights and measures, prosecuted; Mr. R. Christian, of Sutton-in-Ashfield, defended. Mr. White, the county analyst, said the sample of the oatmeal he analysed contained 3 per cent. of maize, besides traces of barley meal. Defendant was under the impression that if he got a written warranty from the person he purchased the oatmeal from, he would be protected. A nominal penalty of 1s. and £1 4s. costs was imposed.

GETTING AT THE DAIRY FARMERS.

AT Manchester, on January 30th, James Charnley, farmer, Lark Hill Farm, Haslingden, was summoned for having consigned to a man named Clayton, a retail milk dealer in Lower Broughton, a quantity of milk which was found upon analysis to have had 56 per cent. of fat abstracted. Mr. Withers, Blackburn, who defended, urged that the defendant was innocent, and that the offence had been caused by the carelessness of his wife. A penalty of £10 and costs was imposed.—Joshua Critchlow, farmer, Coltes Fields, Hartington, near Ashbourne, was fined £5 and costs for sending to a retail milk dealer in this city a consignment of milk which a subsequent analysis proved to contain 10 per cent. of added water.

PURE NORMANDY BUTTER CONTAINS 75 PER CENT. OF MARGARINE.

AT Fareham, last week, John Evans, grocer, of Trinity-street, Fareham, was summoned at the instance of Police-inspector Hawkins, of Alton, acting under the Food and Drugs Act, for selling butter on the 19th ult., which on analysis was found to be adulterated with foreign fat to the extent of 75 parts. It was stated that 1s. was paid for a pound of butter purchased at the informant's request by Agnes Healy, of Winchester. Defendant contended that he had bought the butter as "Normandy butter," and that a printed notice on it stated that it was pure. The magistrates fined him 20s. and 3s. costs, advising him to change his butter merchant. The Defendant: Well, he will have to pay it, sir.—John Crayton, Brown, grocer, of Cosham, was summoned for a like offence on the same day. Mrs. Healy had bought of the defendant's wife all the "butter" she alleged she had (ten ounces), at 13d. per lb., but the analyst, in his certificate, stated: "This is margarine, and contains less than 1 per cent. of butter." Defendant said that the stuff had been bought as butter and sold as such. The Superintendent of Police said that defendant's shop was situate at the east of Cosham, among the poorest of the population. The magistrates considered it a very bad case, and fined defendant £3 and £1 6s. costs, or 14 days imprisonment, a week being allowed for payment.

A FOOD AND DRUGS ACT INSPECTOR REQUIRED AT WEST BROMWICH.

PUBLIC APPOINTMENTS.

THE General Purposes Committee have decided to recommend the Town Council to appoint an inspector under the Weights and Measures and Food and Drugs Acts, at a salary of £150 per annum.

THE OYSTER AND TYPHOID.

A MEETING of the Board of Works for the Strand-district was held on January 30th. According to the medical officer, Dr. Allan, two of the 28 deaths that had occurred were due to oyster-eating. In reply to Mr. Gamble, Dr. Allan stated that a considerable number of cases of illness had arisen from eating oysters contaminated by sewage that had come from dwellings where there had been typhoid fever patients. Oysters were, in many instances, placed at the mouths of rivers, and there the shell-fish received an element that contaminated them. More than half the cases during the last three months were those of persons employed in hotels and restaurants, and the medical men in attendance were disposed to blame the oyster. There was no reason to suspect that the premises were in an indifferent sanitary condition.

THE VENTILATION OF THE HOUSES OF PARLIAMENT.

MR. JAMES KEITH has prepared a further report on the heating and ventilation of the Houses of Parliament, in which he points out very serious defects in addition to those dealt with in his previous report. Mr. Keith points out that the sewer gas which is openly liberated into the lower section of the ventilating shafts finds its way into the Committee Rooms and Press Gallery, and occasionally into the Debating Chambers of both Houses of Parliament. He further states that the atmosphere of the Committee Rooms and corridors is contaminated through the arrangements for ventilating the adjoining lavatories. His chief recommendations for remedying the defects are that the sewer gas be liberated through separate pipes running to the top of the tower, and that silent fans be used for extracting the vitiated air, instead of coke fires as at present.

PURE LARD REFINERS MAY THANK MR. BANNISTER FOR THIS.

THERE are indications (says *The Paint, Oil, and Drug Review*, Chicago) "that even the most radical agitators in England who have from time to time harassed American exporters of lard may understand that the use of beef stearine in that product in moderate quantities is not an adulteration. An English chemist, in his testimony before the Select Committee on Adulteration, being asked if in his opinion the use of a moderate quantity of beef stearine for the purpose of stiffening it was an adulteration, replied emphatically that it was not; that it was customary in England to put a small quantity of mutton suet into the lard to keep it hard and make it convenient to work for domestic purposes. Some of the samples submitted for analysis, and which were said to be adulterated with beef stearine, were found to contain no stearine at all."

BUT EVERYBODY (SAVE SOME MAGISTRATES) KNOWS SOMERSET HOUSE CAN'T ANALYSE BUTTER.

At the last meeting of the Clerkenwell Vestry, Mr. Binyon drew attention to a case of alleged adulterated butter. That Vestry, on the advice of their analyst, had prosecuted a vendor of butter; but the defendant had submitted the third portion of the sample to the authorities of Somerset House, who declared it to be pure. Consequently, the magistrate dismissed the summons, with £4 4s. costs. What had the sanitary authority to say to this? Mr. Putterill said it was the first case they had lost in this way. Mr. Kelly: And it is a well-known fact that Somerset House analyses form an altogether different standard to other people. In fact, nobody knows what their standard is. Mr. Colwell and the Vestry can put it down to Somerset House incapacity.

BIRMINGHAM AND WHOLESOME AND PURE FOOD.

IN the opinion of Birmingham magistrates it is evidently a holy and wholesome action to give or sell meat unfit for human food. On January 25th, Eliza Baker, 237, Summer-lane, butcher, was summoned for having exposed for sale, on December 27th, a quantity of meat which was unfit for human food. Inspector Wiltshire stated that he visited defendant's premises on the day named, and seized 42lb. of pork, mutton, and beef, which was in a slimy condition and gave off an offensive smell. The meat was submitted to Dr. Alfred Hill, and subsequently was ordered to be destroyed. Dr. Hill stated that the meat was not diseased, but was in a state of incipient putrefaction. Mrs. Baker said that the meat was not intended for sale, and called the shopman, who stated that the shop had been closed since Christmas, and that there was no intention to sell the meat. In answer to Mr. Carter (magistrates' clerk) witness said that on a previous occasion when they had a quantity of bad meat they gave it away. Mr. Carter: Who do you give it to?—Witness: We give it to anyone who will take it.—And you don't ask them what they are going to do with it?—No.—Dr. Warden said that the case was very properly brought before the court. There was an element of doubt in it, however, and they were disposed to give the defendant the benefit. The summons was dismissed.

THE METHODS OF THE STANDARD OIL GANG.

THERE are, at times, in our American contemporaries, items which, if their full significance were understood by the Select Committee on the keeping, selling, and flash-point of petroleum, etc., would lead whatever honest men there may be on the Committee to regard the evidence of London County Council experts with the gravest suspicion. The American oil gang have just concluded, it is stated, an arrangement with the Scotch oil producers by which English candle users and others will be bled out of an enormous sum, and as a *quid pro quo* the Scotch agitation against the murderous American oils that cause hundreds of English people to be roasted alive yearly is to be dropped. We have opposed "Abel's" flash-point not in the interest of one gang of thieves or the other, but because we fail to see any reason why English men, women, and children should be the victims of explosions and burning to death to benefit the Standard oil gang. A recent issue of our Chicago contemporary, *The Paint, Oil, and Drug Review*, has the following:—

"*The Oil and Colourman's Journal* speaks of the product which the Standard sells for illuminating purposes as 'slops and low-grade burning oils which the Americans themselves will not have.' For the information of our English contemporary it may be stated that the oil referred to comes from the Lima field, and is the same which is sold for lighting in this country. Some years ago the Standard contended that the Lima oil was only fit for lubricating purposes, but since it has become the most heavily interested of all the investors in that field, it contends that the Lima oil as an illuminant has no superior."

Just so, and for its *quid pro quo* the Scotch oil firms, will, it is stated, say the same; but the public safety demands that this sort of mongering must be combated strongly, and there is only one side on which honest men can range themselves.

JEYES' DISINFECTANTS.

THIS successful company have been awarded a diploma and gold medal at the Trades Industrial, Electrical, and Engineering Exhibition, just closed at Sunderland, for disinfectants and toilet requisites, bringing up the total number of awards to sixty-nine.

CHAMPION'S MUSTARD

MANUFACTURED AND MILLED FROM

MUSTARD SEED ONLY.

CHAMPION & CO., so far as they are aware, are the only makers of importance who

DO NOT MAKE AN ADULTERATED MUSTARD.

CHAMPION & Co. confine their attention to selling only Genuine Mustard Flour, milled and manufactured from Mustard Seed. They frequently sell 20,000 tins of such Mustard in a day in London alone.

To make CHAMPION'S Mustard, it is essential to use only the finest Mustard Seeds, inasmuch as chillies or ginger cannot be employed to produce pungency, nor can turmeric be utilised to secure high colour; consequently ripe and perfectly-coloured Mustard Seed only can be used.

COPPER IN PEAS.

THE Bristol magistrates, on January 25th, resumed the hearing of the charge against Mr. Samuel Shirley, Bristol, grocer, under the Food and Drugs Act, for selling preserved green peas coloured with copper, and alleged to be injurious to health. For the defence Dr. Paul, analytical chemist, London, denied that copper colouring in peas was hurtful; it was insoluble and innocuous. Foods coloured with copper were not hurtful if the proportion of copper were one in ten thousand. Copper was partaken of in daily food by human beings, and could not be excluded. Some foods had a considerable quantity of copper, that in chocolate and cocoa exceeded the quantity in these peas. Dr. Dougall, who held many appointments at Glasgow, agreed that the peas were not injurious to health, leguminate of copper being insoluble. Dr. Blagg, a Clifton doctor, who had used these peas for two years, found no ill-effect on himself or his three-year-old child, who was fond of them. While defendant's case was proceeding, it was intimated that an adjournment would be necessary for the prosecutors to call Dr. Stevenson, of Guy's Hospital, and other witnesses, and the Bench adjourned the case at this point until February 5th. Many Bristol grocers were in court during the day, and Mr. Holman Gregory watched the case on behalf of the local Grocers' Association.

SUPPRESSING MILK ADULTERATION IN CAMBERWELL.

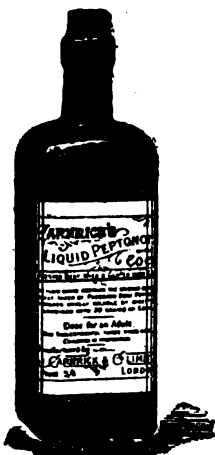
MR. G. W. MARSDEN, solicitor to Camberwell Vestry, appeared, on January 25th, before Mr. Biron, at Lambeth, in support of several summonses against tradesmen for offences under the Food and Drugs Act. F. Lloyd, of Choumert-road, was summoned by Inspector Chadderton for selling milk containing 9 per cent. of added water. Mr. Biron fined him 40s. and costs.—George Fellowes, of Sumner-road, Peckham, was summoned by Inspector Chadderton for selling milk from which 10 per cent. of the original fat had been abstracted. Fined 40s. and costs.—Henry Cox, of Asylum-road, Peckham, was summoned by Inspector Chadderton for selling milk containing 12 per cent. of added water. Fined 20s. and costs.—Emma Bruce, of Acorn-street, Camberwell, was summoned by Inspector Groom for selling milk containing 14 per cent. of added water. Fined 20s. and costs.—Thomas Smy, of Brisbane-street, Camberwell, was summoned by Inspector Kerslake for selling milk from which 35 per cent. of the original fat had been abstracted. Fined £5 and costs.—John Edge, of Hartington-road, South Lambeth, was summoned by Inspector Kerslake for selling milk from which 40 per cent. of the original fat had been abstracted. Fined 40s. and costs.—H. Rollins (South-Eastern Dairy), Cornbury-street, Old Kent-road, was summoned by Inspector Morley for selling milk from which 75 per cent. of the original fat had been abstracted. Fined £5 and costs; and William Brown, the man who was selling the milk, was fined 1s. and costs.—Frederick Newman, of Upland-road, East Dulwich, was summoned by Inspector Scudamore, and fined 20s. and costs on each of two summonses, one for selling milk containing 22 per cent. of added water, and the other for selling milk containing 19 per cent. of added water.—Messrs. Hanbury and Sons, of Lordship-lane, East Dulwich, were summoned by Inspector Scudamore for selling milk containing 10 per cent. of added water. Fined 20s. and costs.

A WARRANTY FAILS.

MR. G. GROVES, of the Camberwell Green Dairy, appeared before Mr. Hopkins at Lambeth, on February 1st, in answer to two summonses taken out by Inspector Kerslake, on behalf of the Camberwell Vestry, for selling milk containing added water. Mr. G. W. Marsden appeared on behalf of the vestry, and Mr. W. H. Armstrong defended. In each case the summons charged the defendant with selling milk containing 9 per cent. of added water, and from which 14 per cent. of the original fat had been abstracted. Mr. Armstrong submitted that the summonses were bad on the ground of duplicity, there being more than one offence alleged on each summons. After some discussion Mr. Hopkins amended the summons by striking out the part relating to the abstraction of fat. Mr. Marsden stated to his worship that this was a very bad case, as only a month ago Inspector Kerslake summoned the defendant to the court, the adulteration of milk being then 18 per cent. of added water, and the case was then dismissed as the summons had not been served within the stated time, also that the defendant had been using handbills stating that he sold pure new milk at 3d. per quart and that he would prosecute any master or man who would say he adulterated his milk, and, moreover, he would pay £50 to any local charity if he was convicted for adulteration. Inspector Kerslake stated that on Sunday morning, January 13th, he saw the defendant's man in Denmark-road, Camberwell, in charge of a milk trolley containing a churn and two hand pails. Witness asked for a pint of new milk and was served by the defendant's man from one of the hand-pails. He then asked for a pint of new milk from the churn and also from the other pail. The man refused at first to supply from the churn, saying his master told him not to; but after being threatened with proceedings for refusing to sell a sample, the man supplied him. The milk in each case was sold at threepence a quart. Upon analysis the first sample proved to be genuine milk, but the other two samples were certified to contain 9 per cent. of added water and 14 per cent. of abstracted fat. The defence was that the milk was bought under a guarantee as pure milk, and that it was sold in the same condition as received. Evidence was called to that effect. The churns, it appeared, bore a warranty from the farmer to the contractor who supplied the defendant. Mr. Marsden contended that was not sufficient. Mr. Hopkins agreed and said the only warranty which would absolve the seller in London was a warranty from his vendor. The case did not strike him as one for anything more than a nominal penalty. The defendant would be fined 20s. upon each summons, and pay two guineas costs.

THE Rutland County Council have passed a resolution in favour of a fixed standard for water in butter; and recommending that margarine should be sold in such a form as to be readily distinguishable from butter.

DR. S. W. ABBOTT, Boston, Mass., in his report on the Inspection of Food and Drugs, in November, says:—"One sample of Distilled Water was found to contain 122 parts per 100,000 of solid matter, instead of 0 part. One four-ounce bottle of Face Bleach contained 27 grains of Corrosive Sublimate. Among a lot of samples obtained at the Pure Food Exhibition were the following: Samples of Mustard containing 40 per cent. of foreign ingredients; Catsup, cider, and grape-juice containing salicylic acid; and shredded codfish containing boracic acid."



CARNRICK'S BEEF PEPTONOIDS (POWDER)

THE MOST CONCENTRATED AND NUTRITIOUS FOOD IN THE MARKET.

"It would take 80 pints of Beef Tea made from 80 lbs. of steak to obtain the flesh-forming constituents present in one pound of CARNRICK'S BEEF PEPTONOIDS."—Prof. STUTZER, BONN.

CARNRICK'S LIQUID PEPTONOIDS

(BEEF PEPTONOIDS ENTIRELY DIGESTED AND DISSOLVED).

A DELICIOUS NUTRITIVE CORDIAL.

A MOST VALUABLE TONIC, STIMULANT AND FOOD.

"A very powerful Tonic and Stimulant."—Lancet.

Also Carnrick's Liquid Peptonoids with Coca, and Peptonoids, Iron and Wine.

CARNRICK & CO., Ltd., 24 & 25, Hart Street, Bloomsbury, London.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. JAMES LONG'S EVIDENCE.

XXXII.

(Continued from page 40.)

MR. COLMAN: Then there is another question as to the price in New York; would not that be affected by the duty they charge upon butter coming in?—I do not think it would be. The producing powers of the American farmers are so great, and the dairy industry is so enormous in its character, that they can do almost what they choose.—I presume that the object of that duty would be, if I may put it so, to increase the price of butter?—Yes.—Which formerly was 2d., and I believe now is 3d. a lb.?—Yes.—Do you think that it would be desirable to drive out margarine from this country, and so increase the price of butter?—I do not suggest that we should drive it out; I simply suggest that we should stamp out the sale of margarine as butter. I am quite willing to admit my belief that it is a good food for the people, and a desirable food sold at its real value.—Mr. Frye: I suppose that many poor people would have no butter at all unless they could get margarine?—That is so; and many would have twice as much if it was sold at its proper price.—Mr. Colman: Have you examined samples or had specimens of the label that you referred to as to the inch and inch and a-half letters. Here are some that have been handed to me; it strikes me that they are rather large for small quantities of butter (handing some labels to the witness)?—No, I think that would be a very fair size.—For small parcels?—Yes, for small parcels. I would put the letters much closer together.—What fine does the Margarine Act give now for third offences?—£100.—How would the exhibition of the invoice, which was a warranty, exonerate the man who might be guilty? Must a man pleading for defence a warranty prove to the Court that he sold the article in the same state that he received it?—Yes.—Is there not a fallacy in receiving a warranty and then giving a verbal statement?—I think so; I pointed that out last week. I think it is useless to admit it unless you can prove that the butter was sold exactly as it was received from the shipper or merchant.—And might there not frequently be some misunderstanding as to the statement on the subject?—Yes.—You said that the identity of the goods could not be proved; are you aware it has been proved to the satisfaction of the Court. Are you aware also that it is frequently proved when the retailer is summoned before Courts of First Instance. I am told there are cases of that sort?—I have not come across any single case.—Do you happen to know what is the price of the largest proportion of margarine imported?—I do not.—Would it be about 6d. a lb.?—Considerably less than that. I have seen it ticketed by the retailers at 4½d.—You referred to the question of factories; are not factories where fat-melting is carried on now under the inspection of the Public Health Act?—I cannot answer the question.—When you say that you advocate the inspection of factories, do you mean factories where the process is carried on, where it is being prepared; or where the article is being produced ready for the market?—Where the oleo is being produced, and where the margarine is being produced.—The factory itself?—Both factories.—Not merely the warehouse in which it is ready for sale?—Not merely the warehouse, certainly.—You referred in one of your answers to the co-operative society and other sellers; do they continue still to sell margarine?—I believe so.—You referred to a wholesale merchant; was he a butter dealer or a butter and margarine dealer?—I have referred to several; I do not quite understand which it may be.—You said "One wholesale merchant writes me to this effect: That a customer of his was getting 25 casks of mixture a week"? Yes; he sells both butter and margarine.—Did you suggest that Irish butter is ever mixed with margarine?—I did.—In some instances?—I suggested, at least I referred to the fact, that the South of Ireland Association had complained to the Corporation of Limerick with regard to that admixture.—You referred also to the price of 2s. 7d. and 2s. 9d. for butter sold in some parts of Paris, that would, I suppose, include their Parisian octroi duties?—That would be the price realised in the market.—After they had paid the octroi duty?—The duty would be taken from that.—Have you any idea what that would be?—I have not.—You suggested, I think, that because those prices were made in Paris and lower prices were made in England the butter that comes here must be adulterated; is not that a little bit of a fallacy, taking the highest price that it makes in Paris and the lowest price here?—No; I referred in particular to the higher classes of butter that come from France to this country. I think I gave the price in Paris as from 1s. 4d. to 1s. 6d. a lb.?—I know of no butter coming from France of high qualities higher than that.—But the butter sold in Paris would be sold subject to various expenses, which it would not be if sold from the farmer who makes the butter?—That would be a bagatelle in comparison with the price of the butter.—There is the carriage of it surely from his own place to Paris?—Yes.—And all those duties that it has to pay; therefore you must take something substantial off the price that he gets; do you know what that would be?—No, I do not. Coming to England, of course, there would be the shipper's commission and the cost of carriage to this country as well to be deducted.—Do you think still that there is a large quantity of butter sold mixed with margarine, and that the sellers do not get any punishment for it?—I am quite convinced that it is so.—Are you aware that

the Grocers' Associations have taken this matter up and promoted some prosecutions?—Yes, I am aware that the Grocers' Associations also are very closely in unison with us as regards the propositions that we made, with the exception of colouring, and, perhaps, one other point.—Then you do not imply that they are lax in the matter?—Not at all; on the contrary, I think they are very fair. There is one point, would you allow me to refer to, in regard to the French exports? In my evidence, as printed, there is a slight mistake that I should like to take the opportunity of correcting. I said that I took a party of English people over one of the factories. I said, "We were under the impression at the time, from what we were shown, although we were not allowed to touch it, that it was all pure butter; but since then I have been informed." Then it says, "by the scientific advisers of the firm that they also blend." I have suggested the alteration, "informed by a scientific adviser of such firms." As a matter of fact, this would be very unfair to this gentleman, because he is a scientific adviser to one of the French margarine manufacturers, and I had the evidence from himself.—Mr. Colman: Then if they blend, as you say in this answer, very skilfully, it may be very difficult for the retailers to detect anything that comes over?—Undoubtedly; it would be impossible, I should say.—Now, touching the question of licences for the sale of margarine, do you suggest that any fee should be paid for the holding of the licence?—No.—Simply that they should not be allowed to sell it unless they have a licence?—Licence registration would be quite the same to me. I think that as the milk sellers are required to be registered, although the law is not carried out, so the margarine manufacturers and dealers and retailers should be required to hold a licence of authority or to register themselves.—Whether they are shopkeepers or whatever they are?—Yes.—That would not be very easy, would it, to carry out, for milk, in country districts?—It is supposed to be carried out at the present time, although it is not. Nothing could be simpler; everyone is known who sells milk or produces milk.—You said something about a block of marble, I think, on the question of its being in some shops; do you imply that that is used and put up for the purpose of concealing fraud?—Not put up for the purpose; I remember it before margarine was introduced, long before it was introduced; but I do suggest that in some cases it is used as a screen, behind which the unscrupulous salesman can mix and does mix the two articles together.—Is pale butter popular in Lancashire?—I have some experience of Lancashire, but I have no particular experience with regard to colour. I have observed that the colour of butter there is like it is elsewhere.—Is it very different from what it is in London?—No.—Mr. Frye.—Did I rightly understand you to say that you are in favour of margarine not being coloured?—Yes.—And butter at the present time is also coloured, is it not, to some extent?—I should say very little indeed.—Would you prevent the artificial colouring of butter?—I should not object to do so at all, but I think it would be unnecessary. I think that so little colour is put into butter that it is practically *nil*.—Then, if margarine were sold uncoloured, I suppose you would remove all the present restrictions that there are at the present time upon selling it?—Which restrictions do you refer to?—The letters put in the packages, and so on?—No, I would keep the whole of them.—But what would be the object; everybody would know it, would they not, by the colour?—But there would still be possible mixtures, so long as it is impossible to prevent the two things being mixed together.—You have spoken of margarine cheese; is it easy to detect it from ordinary cheese?—I should say not at all easy.—I suppose you would be able to detect it?—Not in all cases I would not like to say that I should. I have detected it.—The public would not be able to detect it, you think?—It is in a very incipient stage at present, and it is quite possible that the public may in many cases detect it. But when it is skilfully informed, as in the case of margarine itself, it would be impossible.—Do you know the price that it is sold at?—I could not give you any quotation.—Something has been said about skim milk cheese; do you approve of that?—Of its being made?—Yes?—Yes.—Would you brand it as such?—It brands itself really; it is quite unnecessary to brand it.—There is a great quantity of cream sold now in small pots; is that preserved?—I believe it is all preserved.—How is it preserved?—I am afraid that is a trade secret; but there are several materials: glacialine, boracic acid, and a material known as formalin. These are all used for preserving cream.—You know, of course, that margarine factories in this country have to be registered now by the local authority?—Yes.—In your evidence the other day you said that the importation of margarine had increased; have you any figures to show that?—I quoted the figures then; I do not know whether I have them with me again; I think they are in my evidence.—I will give you them. Are you aware that the imports of margarine in the year 1888 were of the value of £3,000,000, and that in 1893 they were practically the same?—I could not answer the question without having the returns before me.—That the imports of butter had increased from £8,000,000 to £12,000,000?—Yes, that I can quite understand. The perfection of the system of blending the two articles would account for the difference. We may go on having a reduction in the importation of margarine under the present law until we have very little margarine at all.—These figures are quite the reverse of what you stated the other day?—I think my figures were with regard to Holland alone.—Do you know whether many prosecutions have taken place during the last three years on samples of mixtures imported into this country?—A great many.—I am told that there has been only one in the last three years?

—But they appear in the trade papers every month.—You said that for the third offence of selling margarine as butter a man should be imprisoned?—After the third offence, I said.—Would not that be very severe?—The term of imprisonment which I suggest is infinitely less than it is in other countries. Under the new French proposal it is up to two years.—Would not that prevent a great many honest dealers going into the trade?—I take my hints from one of the largest men in the trade, Mr. Lovell, who, I believe, himself suggested before the Margarine Committee that imprisonment would be calculated to deter men from committing a fraudulent action.—Have you ever heard of a shopman who was under dismissal selling margarine as butter in order to spite his master?—I know of many cases. I have heard from London traders themselves that they have been subjected to great loss and annoyance and trouble through the misdeeds of shopmen. I think that is provided for with regard to the sale of milk.—Then you said that great quantities of margarine were imported into Ireland; are you aware that there is a very large factory at Limerick?—I do not think I said so, but I believe it is so nevertheless. There is a factory at Limerick, I know.—Then, about the price of French butter; are you aware of the price to-day of the two best brands of French butter imported into this country?—I cannot give you this day's price.—Would it be about 1s. 1½d. a lb.?—I suppose it is.—Mr. Kilbride: I think you stated in reply to the chairman that in your experience food had no effect on the quality of milk that the cow produces?—No material effect.—Might I ask you, have you analysed many samples of milk where the cows were mainly fed on grains?—No, I do not analyse myself; I am not an analyst.—Could you give us any evidence at all upon that point?—I believe that grains increase the flow of milk, and that to a small extent it diminishes the solids.—Only to a certain extent?—Only to a certain extent. I do not think that grains have an influence of diminishing the quality of milk to so large an extent as is generally supposed.—You are aware that it is usually supposed that grains have that effect?—Yes.—You were asked something about tuberculosis, and you said that practically it was confined to city dairies, and that the country dairies were almost free from lung disease, I think?—Comparatively free.—Is it not the fact that the appearance of lung disease in city dairies is largely due to the fact that cows are fed with stimulating food, and that they have not sufficient space?—As regards the food I should not like to commit myself; but I do believe that it is largely owing to the fact that they are confined in a limited space with an insufficient quantity of pure air and want of exercise.—You would not say that stimulating food, such as grains given hot to the animals, has any appreciable effect upon the perpetuation of the disease in city dairies?—I think that in the nature of things the physique of an animal must suffer, and consequently the constitution, with high feeding and absence of exercise.—You would be in favour, then, of giving all local authorities, I presume, compulsory powers to remove dairies altogether from the inside of cities?—I think I should. I do not at all approve of city dairies where cows are kept.—In reply to Mr. Colman you stated that the New York State authorities had stamped out the sale of margarine?—Yes.—By what process?—By exercising and carrying out the law with the utmost rigour.—The law preventing the manufacture and sale of margarine in the State.—In New York State, then, the law absolutely prohibits the sale?—The manufacture and sale.—Are you opposed to the sale of margarine if it is sold in this country as such?—Not at all.—You are only opposed to the sale of margarine because it is sometimes sold here as butter?—If it were only sometimes I would not take the trouble to get up evidence against it, but I believe it to be consistently sold as butter through the medium of mixture.—Then, do I rightly understand that what you have principally objected to is what is called high-class mixture, which only contains about 20 or 30 per cent. of margarine?—I object to all mixtures, unless they are sold as mixtures.—And you object to the colouring of margarine?—I do.—Do you object to the colouring of butter?—Upon broad principles I do, because I think it is a most unnecessary and careless proceeding; careless because there is no need to do it all, if the proper cows are kept.—The colouring of butter, in your opinion, does not lead to fraud. I put it to you in this way: that the consumer, when he goes into a shop to buy butter, whether it is coloured or not, is under no deception, and there is no fraud committed upon him; it is butter that is being sold all the same?—I refer to a case in which butter is of the abnormally pale type which is very seldom seen.—Except in winter?—And very seldom seen in winter. I think if a consumer were asked whether he would pay a penny for coloured butter or this abnormally pale butter, he would pay the penny for the butter. I think he would show a preference for the coloured butter; therefore, if he pays the penny for it because it is coloured, I should say that he was defrauded, inasmuch as he would be buying margarine as butter.—But am I right in supposing that your great objection to colouring margarine, is that it defrauds the consumer; that the colouring of the mixture gives facilities to the trader by which he imposes the article upon the consumer for something which it is not?—Certainly.—And it is because you are opposed to fraud that you are so strongly opposed to the colouring of margarine?—Yes.—And you would be in favour of some legislation which would absolutely prohibit the colouring of margarine or the mixing of margarine with butter?—I would.—I think you stated, in answer to Mr. Whiteley, that “A short time ago a deputation from the South of Ireland Butter Merchants’

Association attended the meeting of the Limerick Corporation to call attention to the increased growth of butter adulteration or mixture in that city, when it was shown that tons upon tons of margarine were imported into Limerick.” I think, in reply to Mr. Frye just now, you corrected that and said that the margarine was not imported into Ireland?—No.—Were you aware that there was a margarine factory in Limerick?—I was. So far as I remember I made no such statement as that.—You did not state that margarine was imported into Limerick?—I merely quoted what had occurred between the South of Ireland Butter Merchants’ Association and the Limerick Corporation.—You are aware, as it appears there, that the South of Ireland Butter Merchants’ Association are in favour of having the pure Irish butters sold, and nothing else?—I know they are.—And they took this action in order to put down the mixture of Irish butter with margarine, to be sold in Irish towns as Irish butter?—Unquestionably.—Do you think, then, that the South of Ireland Butter Merchants’ Association are deserving of every support?—Unquestionably.—In their desire to put down fraud?—Yes.—And to put down adulteration?—Certainly.—It was stated here that Irish butter, when it came to England, was sometimes mixed with margarine; is that so to your knowledge?—I have no knowledge at all of it.—Are you aware of the fact that neither the South of Ireland Butter Merchants’ Association in Limerick city, nor the Cork butter people, will permit, so far as they can prevent it, any Irish butter leaving Ireland except as pure butter?—I know that so far as the Cork markets are concerned they would not allow it; and I believe that, so far as the South of Ireland Butter Merchants’ Association are concerned, they would not allow it.—I see you state that “Normandy and Brittany butters were sent to England with 15 to 35 per cent. of margarine mixed with them?”—Yes.—What percentage of mixture is it possible for an analyst to detect; I will put it in this way: Is it not the fact that it is almost impossible for the most experienced analyst to detect a mixture of margarine and butter, unless there is more than 20 per cent. of margarine?—I believe that to be the case, although I have letters, one or two with me, in fact, in which analysts differ upon the point. Some go as low as 10 per cent., or even less.—You stated in reply to a further question that in the case of a manufacturer in France of a mixture of margarine and butter, although he was fined twice and sent to gaol, apparently it did not prevent his continuance of this fraud?—I do not think I said quite to that effect.—No, you did not say it exactly the way that I put it, but it practically, I think, means that?—I think I left off at his being sent to gaol. I do not know what he has done since then.—Would not that be evidence that, if it is desired to put down fraud, very stringent legislation is necessary?—I think it is.—I think you stated that margarine was sold here in the London market at 4½d. a lb. retail?—I said I had seen it.—When have you seen it, lately?—No, I suppose about nine months ago.—What was the price of butter then?—It varies very much in England.—Could you tell the Committee at the time when you saw margarine labelled at 4½d. a lb. retail in shops, what price was butter labelled at at the time?—The butter was labelled in the same town at 16d. to 18d., and where I lived at 14d.—That is a difference of, nearly, from 9d. to 10d. a lb.?—Yes.—And, to the extent of from 9d. to 10d. per lb., the retailers of margarine who retail it as butter are defrauding the public?—No, I would not go quite so far as that, because it is essential in order to obtain a high price for margarine to mix with it a larger proportion of butter, which would increase the cost price of the margarine; but even then the difference between the actual cost of the mixture and the value of pure butter is considerable.—Mr. Dunbar Barton: You referred to the subject of water in Irish butter, and I think you mentioned, as two of the causes of the high percentage, their inferior utensils and the absence of spring water?—Yes.—Are you aware also that, as compared, for instance, with the Danish trade, the presence of ice in Denmark, and the absence or difficulty of obtaining ice in Ireland, is also a matter in which the Irish farmers are at a disadvantage?—I would say that the absence of spring water would include that. If you have a cold spring water you do not require ice.—Are you aware that the Danish Government spend large sums annually on the special cultivation and encouragement of their butter industry?—Yes.—And therefore to that extent also in Ireland they are at a disadvantage; money is found in Ireland very generously in many matters, but not with regard to the butter industry?—With regard to that point I am bound to say that the Irish have had advantages which we have not as regards butter-making. They have had excellent schools, which we have not had in England until very lately.—That is to say, schools provided from public funds?—Yes. But with regard to the farmers themselves I am bound to say that in the big valleys in county Kerry, in which I have been, I cannot see how it is possible for the little farmers to produce a high-class butter, or a high-class anything, in the little cabins that they have, which are not fit for such material as milk.—That refers to the valleys in Kerry?—I take Kerry because I have been there to see what is being done.—But I think you said in your evidence that you have no fault to find with the instruction in Ireland?—I have not.—So that it is the inferior utensils and the absence of spring water.—Yes.—Those are the things, then, that we have to look to in Ireland if we want to improve our butter?—That is one point.—Then you go on to say that you are in favour of fixing a standard, and you mention 16 per cent. of water?—Yes.—Are you aware that Mr.

Morley, the Chief Secretary for Ireland, wrote recently to Somerset House asking them to assist him with respect to fixing a standard upon this subject?—No.—And they replied that they did not think it would be expedient to fix any such standard?—I did not know that.—Are you aware that in Ireland the Government have taken steps to use the Royal Irish Constabulary as inspectors in country districts, in order to try to meet this question of water in Irish butter?—I was not aware of that fact.—With reference to fixing a standard of 16 per cent., I am told that in a letter to the *Manchester Guardian*, on August 22nd, 1893, you wrote: "In speaking of butter I am speaking of a material which may contain as little as 8 per cent. or as much as 22 per cent. of moisture?"—That is so.—Perhaps you have seen that in prosecutions at Cork, which have been taken by the Cork Butter Organisation, they have prosecuted lately in all cases, or at any rate in cases of over 20 per cent. of water?—Yes.—That is to say, in cases of 21 to 22 per cent.?—Yes.—Do you think that that is a reasonable line to take, having regard to the difficulty of arriving at a standard; do you think that the Cork Butter Organisation have acted rightly in prosecuting where the proportion of water is more than 20 per cent.?—I am bound to say that I feel in rather a difficult position, because of that one fact, and I do not think it applies to any other country but Ireland: that there are a great number of very small farmers whose conditions are entirely different from those of anybody else. In the county of Lancaster, for example, the farmers have been complaining of the absence of proper dairies, and the attention of their landlords, in fact, has been called to the matter, and something has been done to remedy the defect. Well, of course, the Lancaster farmers are men who have substantial houses, and substantial apartments in those houses which they can convert into a dairy if they choose at a moderate expense; but in the cases with which I am acquainted in the south of Ireland it is practically impossible for any of those men to make a dairy out of any apartment in their small cabins.—You are aware, of course, that the particular part of Ireland which you visited, and are acquainted with, is not typical of the whole of the butter industry of the south of Ireland?—I quite understand that.—But I understand you to say that in those particular districts the circumstances are so specially difficult for the farmers that you do not like to give an opinion as to a standard to guide us?—No; I have given my opinion as regards a standard, but I think that something might be done in cases of that kind, not to make an exception; I do not quite know how to put it.—We would like to have your guidance because we want to make our butter as good as we can in Ireland?—I would give some little consideration if I were a magistrate or prosecutor in a case where a man had no real convenience for making an article of produce which he must make if he is to live.—There is only one other matter about which I want to ask you. How do you arrive at your standard of 16 per cent. without going into it in detail?—I think my standard was 15 per cent.—Would you say how you arrived at it?—I have given considerable evidence upon the point. I arrived at it upon the basis of the analysis of the butters of almost every country.—I will not trouble you to repeat anything that you have already said; but I want to ask you this one question. Do you know anything of the manner in which what is called ordinary salted or pickled Irish butter is made for keeping?—Yes.—You know that is an Irish speciality?—Yes.—Are you aware that that is made to keep for from three to six months for winter use?—Yes.—Are you aware that in the making of that butter it is necessary to use rather more water in the manufacture than in the case of ordinary English or foreign butter used fresh every week?—That is quite a different point from the one that was raised just now. I am personally opposed to the system which is at present adopted in the manufacture of this pickled butter, because I feel convinced—indeed, it is admitted by some Irishmen themselves—that it is sometimes a matter of fraud; that they add a very large proportion of brine to butter at a high temperature for the purpose, as some say, of increasing the weight or the percentage of water, and in other cases for preserving the butter for winter use. I do not believe that the large quantity of salt used in the form of brine is essential to make the butter keep for the winter, but I do believe that it adds to the weight, and consequently to the high percentage of water.—Can you mention any other butter that will successfully keep in winter?—Wherever you make butter under the best system with 4 to 5 per cent. of salt, it will keep quite as well as the Irish pickled butter. I know that that is contrary to the opinions that were expressed in the Manchester market.—But in order to prevent from 4 to 5 per cent. of salt from crystallising, is it not necessary to use from 12 to 15 per cent. of water?—From 12 to 13 per cent.—I will take it from 12 to 13 per

cent. Does it not follow from that that in the case of butter in which you have to use 4 to 5 per cent. of salt, there is at any rate likely to be more water than in the case of other butter, because you have this additional 12 to 13 per cent. besides?—Besides the water combination do you mean?—Yes.—I mean that altogether the moisture should not exceed 12 to 13 per cent.—That is to say, not more than in the case of other butter?—No.—Do you think that that would account naturally for there being more water than in other butter?—I think that the system of manufacturing with warm brine accounts for the excess of water in Irish pickled butter.—You say that it may lead to fraud; but it may be done without fraud?—Yes, because it may be innocently or carelessly done, or it may be fraudulently done; but in either case I think it should not be done, and the consumer suffers just the same.—What difference in the percentage of water would you allow between fresh and salt butter?—An immaterial quantity; one per cent. is sufficient.—How do you account for that. If it takes 5 per cent. of salt to preserve butter that is made to keep from three to six months, and in order to keep from 4 to 5 per cent. of salt in solution, to prevent its crystallising, it is necessary to use from 12 to 13 per cent. of salt; the addition of 5 per cent. of salt consequently, according to you, only makes 1 per cent. addition of water?—What I intended to say was that from 12 to 13 per cent. of moisture was quite sufficient to retain the 5 per cent. of salt. As a matter of fact, I think it is pretty well proved by scientific investigation that the addition of salt to butter, under what I would term normal circumstances, does not add to the percentage of water at all.—Could you suggest anything with a view of making Irish butter more pure. What particular use would it be; by prosecution or by Government interference, or by instruction, or in what way do you think steps could be taken to secure Irish butter being more pure?—I look at the question in this way. The very small producer keeps one, two, or three cows, and he produces at every churning a very small quantity of butter. This he puts into his little firkin, and when it is full it goes to the market. It is impossible for his butter to be of good quality, because it contains so many different churnings that it is impossible for it to be all alike in character; and so far as regards water for the same reason. Therefore I would suggest, so far as Ireland is concerned, the factory or creamery system.—Co-operation, in fact?—Yes.—Mr. Kilbride: Are you aware that the Commissioners of National Education in Ireland have submitted a memorandum from the superintendent of the Albert Farm at Glasnevin, strongly deprecating the proposal to fix a standard as being prejudicial to the interests of the consumer as well as the producer?—I was not aware of that. That is in the correspondence that has taken place, I understand, between Somerset House and the Chief Secretary for Ireland?—I was not aware of that.—Mr. Jeffreys: Mr. Yerburgh, a member of this Committee, who is unable to be present, wishes me to ask you whether if margarine were imported in coloured packages it would not reduce the price of the article to poor people, that is to say, whether everybody would not then know that it was margarine, and consequently the price would be reduced?—No, I do not think it would. I think it would be a matter of custom; they would get used to it, as they have got used to many other articles of consumption.—At any rate, they would know that they would not have to pay for anything but margarine if they saw these coloured papers?—That is so.—Mr. Yerburgh also wishes me to ask you what you meant by saying that in Germany shops that sold margarine had to be registered?—What I said was that on every house of business in Germany where margarine is sold, it is essential in accordance with the law to paint on the outside "sale of margarine."—And you would recommend that on shops that sold margarine in England?—Not essentially on the outside of the shops, but in bold letters somewhere.—So as to notify the fact?—Yes.—And with regard to separated milk, if it were proved that separated milk and fresh milk might be sold together as fresh milk, would not that be to the great injury of the farmer, because the separated milk could be sold at from 1d. to 1½d. a gallon, whereas the retailers would sell the mixture of good and bad milk at very much the price of fresh milk?—That is if they were sold together?—Yes.—I do not see the way to prohibit that being done.—But if that were allowed if would be doing a great injury to the farmer?—If the fraud were perpetrated it would be doing the farmer a great injury, as it does now; but the point is, that if this proposal were law, then the retailer would be doing it at very great risk.

(To be continued.)

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The Vestry of the above Parish, as the Sanitary Authority under the Public Health (London) Act, 1891, being about on the 15th March to appoint Sanitary Inspectors for Districts No. 6 and No. 9, the Public Health Committee is prepared to receive applications for the offices. The salary will commence at £180 per annum, payable monthly, with an annual increase of £5 to a maximum of £160. Uniform, cap, and clothing will be supplied. The persons appointed must reside in their districts, and devote the whole of their time to the service of the Vestry, and will not be permitted to engage in any other occupation. Candidates, who must not be less than 25 years of age nor more than 40, must make application in their own handwriting, upon the form provided by the Vestry, stating their age, trade, and qualifications.

Candidates must be holders of a certificate of such body as the Local Government Board may approve, unless they have been during three consecutive years, preceeding the year 1895, a Sanitary Inspector or Inspector of Nuisances of a district in London, or of an urban sanitary district out of London containing, according to the last published census, a population of not less than 20,000 inhabitants.

The applications, enclosing copies of not more than three testimonials of recent date, must be sent in to the undersigned before noon on Thursday, February 23th.

Candidates selected will be written to and informed when they are to attend the committee. The appointments will be subject to the approval of the Local Government Board, and to the medical examination of the persons proposed to be appointed of their constitutional fitness for the positions. Canvassing will be deemed a disqualification.

Vestry Hall, Upper St., N., Feb. 11, 1895.

WM. F. DEWEY,
Vestry Clerk.

NOTICE TO READERS.

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Food and Sanitation.

SATURDAY, FEBRUARY 16TH, 1895.

POISONOUS COLOURING IN FOODS.

PRESERVED FRENCH PEAS.

THE result of a prosecution at Bristol on January 5 shows, to put it briefly, that the Bristol magistrates have accepted a plea exactly analogous with the excuse of the servant *re her baby*, "that it was only a little one"; and after an exhaustive hearing, in which, as usual, the dictum of that eminent Master of the Rolls who said there were three classes of liars: "Liars, damned liars, and expert witnesses"—was justified by "expert" testimony. Bristol has been proclaimed a district in which poisonous colourings of food may be done with impunity. A mass of "expert" testimony was offered to the magistrates in favour of the use of copper in peas, but do any of those experts who gave evidence now anything really of the question? They do not; they know just as little of the effect of copper in peas upon the consumer as they knew a few years ago of lead poisoning by the use of lead pipes for water carriage. It has begun to dawn upon the general practitioner that a number of diseases prevail in certain parts of Yorkshire, for example, that can only be attributed to the minute quantities of lead with which the water passing through lead pipes becomes contaminated. But whether copper in peas in minute doses be dangerous to health or not ought to be really beside the question, and a retail grocer should not be the scapegoat over which food experts can contradict each other. We spoke plainly upon this question in one of our first issues, saying:—

"The use of artificial colouring matter and of preservatives in food has been imported from abroad. With the exception of one or two colours in the kitchen of the consumers, such as saffron and cochineal, our food used to be expected to have only its natural colours. The Englishman likes to see what he eats, and has an inborn objection to consume anything of obscure origin. In a few cases, even many years ago ingenious unprincipled manufacturers employed colouring matters, such as oxide of iron in anohovies, or, it is said, even vermilion in cayenne pepper, but such practices, when discovered, were universally condemned as fraudulent. Then came from France preserved peas with an unnatural green colour, produced by the use of salts of copper. Although every consumer of peas was well aware that these vegetables lose during boiling much of their natural green appearance, yet such coppered peas found a sale among the ignorant. Soon after the passing of the Sale of Food and Drugs Acts samples were denounced by public analysts as adulterated. But when the vendors were brought into court they were, as is even now customary, defended by chemists who ought to have known, and doubtless did know, better, and the magisterial minds were befogged by contradictory evidence. Coppered peas were passed as genuine and unobjectionable by the guardians of the public digestion. Since this evil precedent was set, colouring matters one after another have been introduced, until, as we have shown, coloured food has become the rule rather than the exception. The general principle had been thrown to the winds, the public were the sufferers, and the manufacturers reaped the benefit, inferior goods

being sold literally under false colours, at prices which would have been impossible if the articles had been offered in their natural garb.

"No other article affords so striking an illustration of this statement as does butter. No country in the world ought to be able to compete with England in the production of dairy produce. English cows are better than continental cows. English pastures are infinitely more productive. Yet we import immense quantities of butter from abroad. The ingenious and fraudulent use of colour by continental butter makers has greatly aided to bring about this result. No doubt dairy farmers in France, Belgium, North Germany, and especially Denmark, are much ahead of English farmers in scientific knowledge. Their Governments have long ago energetically and wisely aided them in every way, by establishment of dairy-schools, and by giving them facilities for transporting and conveying their produce at low rates. But no amount of scientific knowledge would have enabled the dairy-farmer to supply our market all the year round with butter of exactly the same colour and appearance, and this equality of appearance helped, even more than superiority of quality, the sale of such butter in this country. The second circumstance which has unduly favoured the foreign producer is the tacit permission of the use of preservatives. Even in these days of rapid conveyance of goods, perishable articles like butter would arrive in the English market from abroad more or less deteriorated in quality, if they were in their natural condition. Hence the English farmer would have a better chance than the foreigner of supplying our markets. Only the use of preservatives really made the introduction of foreign butter in enormous quantities possible. Nothing short of criminal shortsightedness on the part of our authorities has allowed such a state of things to come to pass. Foreign Governments have forbidden the use of preservatives for home consumption, but allow their employment for exportation abroad. Lest any reader should feel indignant at this, we would point out to him that our Legislature has set the evil precedent, for by Clause 30 of the Food and Drugs Act the exportation of adulterated tea from England is expressly permitted, although it may not be sold in England itself. Small wonder that the foreigners have taken a leaf out of our own book, and that such an immoral clause has recoiled upon ourselves a hundredfold. As further instances, we may mention that wine must not be sold for consumption in France which is preserved with salicylic acid, but it may be sent to England; the same applies to beer brewed in Germany."

In the Bristol case the hearing was twice adjourned, and on the 25th ult. the expert evidence in favour of copper in peas was heard. To rebut this, Mr. Taylor recalled Mr. F. W. Stoddart, the City analyst, who stated that there was an equivalent of two and a-half grains of sulphate of copper in a pound bottle of peas. The amount of copper was that which was contained in the stated quantity of sulphate of copper, and the injurious action of the copper in the peas was precisely that which would be occasioned by that weight of sulphate of copper, but he did not suggest that the copper was present as sulphate in the peas. In each case the mixture was soluble and equally poisonous. If nothing was done to preserve the colour the pea was as wholesome yellow as green. As to the solubility of the compound of peas and copper in the process of digestion, it was perfectly and easily soluble by the digestive juices. When dissolved it produced its local action on the intestine or the stomach, as the case might be. He had made experiments by way of artificial digestion, and he found that the copper was removed from the peas, and that being so it was assimilated into the system. He had eaten those particular peas on two occasions, and found that the peas were completely digested, and remains of the husks were detectable; and the husks were entirely deprived of copper. This showed that the copper was removed from the peas by the process of digestion. Copper was a poison. Its chief effect was as an irritant and powerful astringent, and it produced certain constitutional effects. From five to ten grains of sulphate of copper would produce vomiting, and it was reasonable to suppose that a smaller dose would produce some effect; there was evidence of that. He should say that 82 of sulphate of copper in a pound of peas was a quantity that would be injurious to health. Cross-examined: What did you intend to convey by introducing sulphate of copper into your certificate?—The object of using that expression was to convey intelligibly the amount of the compound in the peas; but I cannot say precisely that so much phyllocyanate of copper was in the peas; it is the quantity that would be equivalent to that quantity of sulphate of copper. Do you suggest that the quantity of copper you found would produce the same effects as sulphate of copper?—Yes, under the conditions of digestion. Do you suggest that copper, taken as copper, is equally injurious as sulphate of copper?—Now you are talking of metallic copper; metallic is no more present in the peas than sulphate of copper. Witness said that he agreed with Dr. Stevenson that copper in minute quantities is found in the human body and in many articles of food; it very seldom approached one part in 200,000. If the copper did not add to the healthiness of the peas, it improved their appearance. So far as you know, no cases exist in which there is injury from eating these peas—no cases have been known? No. Can you allude to any other case of metallic compound alleged to be poisonous in which no cases can be brought forward in support of the theory that it is poisonous?—I cannot think of a case on all fours. You say that there are constitutional effects after eating the peas; is that a scientific view?—That is a matter from reading. I have had a metallic taste in my mouth for a day after eating bottled

peas. Witness said that he knew there was no interference in France with that process of preserving peas of late years, though formerly there were restraints in that country. The preparation was prohibited in Austria, Germany, Sweden, and part of Switzerland.

Dr. Thomas Stevenson, analyst at the Home Office, said he had made experiments with copper, and special investigations as to its presence in the human body and excretions of the human body, in articles of food, and its physiological effects on the animal body. Copper in peas and other articles of food was attended with danger to health. Copper in small portions taken continually in many animals, and in some human beings, produced injurious symptoms. Some people were more susceptible than others, and that was a fact not only in regard to copper but other metals. Some people who took metals suffered only in small proportion. He believed it was not necessary that these peas should be coppered; they could be made to retain their colour in another way. There were good fresh-coloured peas prepared, he was told, by a process patented in France, by which a fine colouring matter was produced from other vegetables. He thought these peas would be superior to the others; certainly they had an excellent flavour. Coppered peas would be rather of an unnatural hue. He was of opinion that 3.2 sulphate of copper in a pound of peas was injurious; 8 of a pound of metallic copper was equivalent to 3.2 sulphate of copper, and was likely to be injurious to health. He had coppered peas himself, and he found by coppering fresh vegetables that the vegetables gave no copper practically to water or dilute acids, and no appreciable amount to strong hydrochloric acid; it yielded to ammonia. Copper was injurious to health. In cross-examination, the witness said these peas were formerly commonly sold in England, but of late years he would say they were not commonly sold. He did not know that they were of that brand which was the subject of the prosecution. Substantially, the green colour in all was produced by sulphate of copper. Different qualities of peas retained different amounts of the copper. Do you know that these peas are openly placed in the lists of the leading importers of fruit and vegetables?—I have no doubt that, now the restrictions have been removed by the French Government, they would appear. They are an article of commerce openly sold?—Yes, but without any statement that they contain copper. Witness said he did not remember any prosecution instituted in London of late years against the vendors of preserved peas. He was public analyst for Surrey, and did business in London as an analyst. He had not had a sample of preserved peas to analyse for years in London; he meant officially. It was not a department that the Home Office would take cognisance of. Public analysts did not set the inspectors under the Sale of Food and Drugs Act in motion. In the metropolis preserved peas as an article of commerce passed unchallenged, didn't they?—No; I do not say that. There are cases pending this week in the county of Middlesex?—The matter of selling peas is to be challenged. You have been asked to go there for the prosecution or defence?—For the prosecution. Mr. Inskip read extracts from what the witness had stated with respect to observations made by Dr. Church. He said he agreed with the statement that copper was not an active poison in small quantities. He agreed with what Dr. Church said, that this treatment of vegetables might be allowed provided the quantity did not exceed one in 20,000, and the article were labelled on the bottle. Mr. Inskip read an extract from the writings of Dr. Church, in which he said the premises were—"Copper is not an active poison, copper is contained in small quantities and in so insoluble a form." He relied upon the premises—he thought they were most important. Witness said he quite agreed with those premises. Mr. Inskip remarked that if what was contended for by the prosecution should be held to be correct, they would take away half the pleasures of life from ladies who took a pride in the arrangement of their dinner tables in respect to jellies and ices. Witness: But they are not coloured with noxious substances. Mr. Inskip asked Dr. Stevenson if he had not modified his opinion with regard to these preserved peas of late years, from what he had stated some years ago? Witness said he admitted it was a vexed question among the most eminent men, but he thought he should add to that what he believed was the preponderance of opinion with the majority of toxicologists, that copper was a poison. In answer to the magistrates, Dr. Stevenson said he had acted for the Home Office since the spring of 1872, and he also acted for the Treasury. For many years he had no official appointment; his official appointment dated from 1882. Mr. Baker: When the prohibition of the preparation of peas was taken away in France, did you suggest to the Home Office or any Government department that steps should be taken to watch this trade, or prevent the importation of these peas into England, or did you state that they were dangerous to health?—No; it does not come within the province of the Home Office or the Treasury, but the Board of Trade, with whom I have no relations. You would not think it your duty, if you had no official obligation, to communicate with the Board of Trade to caution them?—No, it would not be my duty at all. And for that reason you did not do it?—I did not do it for the reason that my province is not to advise the Home Office, but they consult me when they think proper. Who is the chemist to the Board of Trade? Witness stated that they had had different departments, but now all were consolidated at Somerset House. Mr. Baker: If these peas are injurious, Government and the Government officials ought to have taken the matter up. Mr. Inskip: Will your worship ask if the Board of Trade have dealt with coloured peas, and they have been stopped? Wit-

ness: That was the action of the customs authorities. I found there were harmless materials used for colouring teas, and these were submitted because grocers had been prosecuted for the sale of highly-coloured teas, and decisions were given adversely to the sale of these teas, and the Customs took the matter up. There was a clause in one of the Acts respecting exemption, and I was instructed to give chemical instruction to the Custom House officials as to how they were to act. Mr. Baker: Not that these ingredients for colouring were harmless? Witness: They were harmless in ingredients, but sometimes heavily weighted. It was thought that the only way of checking the importation of green teas, and so to protect the grocer, was to have them officially examined at the port of arrival. Mr. Baker: It had nothing to do with the wholesomeness of the teas? Witness: No. In answer to Mr. Gore (magistrates' clerk), Mr. Shirley, the defendant, said there was no duty on preserved peas. Mr. Gore: Then the Customs authorities might not move in that matter. Mr. Willcox: Dr. Paul, when he was called as a witness, said that there was more copper in chocolate and cocoa than in these peas. Witness: I think that was a mistake made by a French chemist in what he found in the ash of chocolate. He found one per 8,000 of copper in the ash, which varied, and his result was misunderstood and misquoted afterwards as being one in 8,000 of cocoa instead of the ash. Mr. Baker: If you had thought these peas were injurious to health, apart from your official appointment, you would, I suppose, have given some hint to the authorities in London? Witness: I cannot say it is evidence against the peas, thinking that they are injurious. Since the prohibition was removed I have paid no attention to preserved peas until this case and the Middlesex case came to my knowledge. No doubt, whatever the decision is, there will be some conference among the public analysts. Mr. Baker: I think that should be done and something settled. Witness: I think most analysts consider something should be done, but that does not settle the matter. In answer to Mr. Taylor, Dr. Stevenson said that one in 200,000 of the cocoa would be equal to one in 8,000 of the ash, which was about the same that they found in flour and bread. This concluded the evidence, and the magistrates then retired to consider their decision. They were absent about ten minutes, and on their return to the justice-room, Mr. Baker said: We have paid great attention to the evidence, and we have come to the conclusion that we are not of opinion that it is proved that the particular sample of peas in question has been so coloured as to be injurious to health. That is our judgment. Mr. Inskip: Then, under the circumstances, the summons is dismissed? Mr. Baker: Yes. Mr. Inskip said the Corporation were prosecuting, and they had the ratepayers at their back, so that he suggested the bench should order that something might be paid the defendant towards his expenses. Mr. Baker said the magistrates declined to make such order; they did not say but what there might be a case to answer for colouring peas by copper. Mr. Inskip said he did not ask their worships to go so far as to say there was not. Mr. Baker remarked that as an individual, and not now speaking as a magistrate, he thought the grocers would be well advised if they had their peas, as in the Glasgow case, labelled that they were coloured with a solution of copper, and warranted not injurious. Mr. Shirley said that would be acceptable to the grocers. Mr. Baker: I think the public would prefer peas not so good-looking if there were not so much copper. Mr. Shirley: My experience shows that they will not have them without they are coppered. There were summonses to be heard against Mr. Samuel Pont, grocer, Zetland-road, and Mr. Samuel Hall, grocer, both represented by Mr. Holman Gregory; and against Messrs. Oliver Holland and Robert Ind, of the Grocers' Alliance, Hampton-road, who were represented by Mr. H. R. Wansbrough, for selling peas similar to those which were the subject of inquiry in the case of Messrs. Shirley & Son. Chief Superintendent Cann asked, after the decision of the bench, if an adjournment would be granted, or whether the summonses might be withdrawn. The magistrates asked to see the reports of the analyst in these cases, and having perused them, they said the same result must happen as in the other case, and they dismissed the summonses.

CAN BUTTER SPREAD INFECTION ?

ALONG with the conviction of a vendor for adulterated Australian butter a few days ago, the following recent investigations go far to show the wisdom of, by every means in our power, extending English dairy farming for two all potent reasons. We have an excellently organised and able sanitary force in the United Kingdom to guard us against disease, and the local inspectors, if they found margarine going into English or Irish dairies as it goes into the butter factories of the finest Brittany butter firms, would know at once that it went in to be mixed with butter, and would be on the watch to haul the rogues before the magistrates. But who knows what is done in the butter factories of Denmark, Sweden, Germany, France, and our colonies? The following facts may enable us to roughly guess at some of the faults:—

The statistics of slaughtered animals in Prussia, Hanover, Switzerland, and other European countries show that from 2 to 12 per cent. of the cattle are tuberculous, and though their flesh is not often dangerous, yet the milk must in most cases have been so. We can guard against tuberculous milk by sterilization, but now danger is threatened us from the butter. Several years ago Heim showed that butter from tuberculous milk contained

bacilli and could produce infection. Bang (Deut. Zeitsch f. Thiermed, vii., p. 5) reached similar conclusions. Prof. Roth, of Zurich, has, however, recently made experiments of a more striking significance (Correspond bl. f. Schweiz. Aertze). He went into the markets and purchased butter from twenty different cantons of Switzerland. He then inoculated guinea-pigs with this butter. In eighteen series of experiments the results were negative, but in two the inoculations were followed by tuberculosis. In other words, ten per cent. of the butter of the Swiss markets contained tubercle bacilli. Quite independently of Roth, Dr. Brusafarro, of Turin, made experiments with the butter of the Italian markets. In nine tubs he produced infection once, which gives about the same proportion as Roth's. It is not to be supposed that ten per cent. of market butter is necessarily dangerous, for in many instances the number of bacilli is small, and quite unable to cope with the juices of the stomach. Still, infected butter is not safe to the predisposed, and the fact of its existence in Europe at least should be borne in mind. What makes the matter additionally serious, is the fact that there is not, so far as we know, any practical way of sterilizing butter.

That man, said Swift, who would cause two blades of corn to grow where but one grew before, would deserve better of his country than all your philosophers. With hundreds of thousands of Englishmen, women, and children shivering with cold and famished with hunger, it seems strange that in the debate in the House of Commons last week, when agricultural depression was under review, not a word was said as to how it happens that millions of English gold goes abroad for butter, which can be produced, of better and healthier quality, in the United Kingdom, if we had a Minister of Agriculture, with a policy and brains, to do for dairy farming what the Danes have done in the way of encouragement of creameries and curbing the thuggery of preferential railway rates.

INDIAN EXPERIENCE IN THE INCINERATION OF REFUSE.

As the practicability and expediency of disposing of cities' refuse matter by combustion is now a subject of earnest consideration in various municipalities, it is useful to learn what results have been arrived at in cities where the process has been tried. The experience in Calcutta is related in an editorial article in the October number of the *Indian Medical Gazette*. The writer, after stating that in theory the reduction of the garbage of an Indian city to a harmless ash by burning is the easiest way of disposing of it and the one that best meets sanitary requirements, goes on to remark that, in the beginning at least, practical difficulties arose which showed that the method was far from easy. It is six years, he says, since the question of its employment was raised by the health officer of Calcutta. At the outset the suggestion was met with the objection that in European and American cities, where the system had been successful, the refuse contained a large amount of unconsumed fuel in the shape of coal, coke, and charcoal, with only a small proportion of vegetable matter, so that the whole was easily burned, whereas in an Indian city it consisted chiefly of raw vegetables with a small percentage of ashes, wherefore its combustion would prove impracticable. This objection, which gave rise to considerable controversy, was finally set at rest by a practical trial, and it was shown that the refuse of Calcutta was combustible. But more than two years had now elapsed, and many persons looked upon the experimental work as a waste of time and money; however, as it had been demonstrated that the refuse could be burned without coal, whether in the cold season or during the rains, it was admitted that a substantial step had been taken. Many problems connected with the details of the necessary system of procedure had, it was true, been left untouched, but they were recognised as minor ones and not beyond the resources of engineering.

It was found that the furnaces used in English towns were unsuitable for the very bulky refuse of Calcutta and Bombay, for they soon became choked and did their work in a very slow and unsatisfactory way, so that frequently the odour proceeding from the chimney was so offensive a nuisance as to show that such furnaces would not do in crowded localities. In the effort to overcome this objection the engineers have since been so successful as to have constructed furnaces and accessory contrivances quite capable of burning Indian refuse without the least

nuisance. These improvements have consisted in the production of a more intense heat in the furnaces themselves and in the passing of the smoke and gases from them over a fire or exposing them in some other way to a high temperature. The intense heat lessens the amount of smoke and burns a larger amount of refuse, while the exposure of the gases to a heat that breaks them up into their constituent elements renders the fumes issuing from the chimney perfectly harmless. If the heat is raised to 1,500 degs. or 2,000 degs. F., the writer thinks, it is doubtful if the additional precaution of washing the gases and smoke is necessary.—*New York Medical Journal.*

A PROMISED SENSATION IN ILLUMINANTS.

A REVOLUTION is promised in the displacement of petroleum as an illuminant. An enthusiast has appeared who declares that he possesses a secret which will produce all the power of light that is now claimed for the best refined petroleum, and the singular part of the alleged discovery is that neither petroleum nor lard oil is even a constituent part of it. Pittsburgh capitalists are being solicited to take an active interest in the so-called patent which is to perform such wonderful results.

The invention which promises to knock the Standard Oil Company sky high is so simple a thing, the inventor says, that it could be revealed by the mention of a word of two letters. But it is the cost of the oil that promises to deal a death blow to the natural resources of Pennsylvania and at the same time prove a blessing to all users of oil. The inventor says that with the development of his invention he can provide the public with oil at merely 2 cents per gallon. People who are now squandering their money on oil at 10 and 15 cents per gallon can well appreciate what is offered, and will hail the innovation of the cheap article with eager delight.

PROSECUTION CASES.

At Newport, on January 14th, Agnes Butler was summoned by Detective-Sergeant Faulkner, inspector Food and Drugs Act, for milk which contained 20 per cent. of added water. A 20s. fine was imposed.

At Newport, on February 6th, George Durston, Bridgwater, was summoned by Inspector Faulkner for milk which contained 13 per cent. of added water. The Bench decided to fine defendant 40s. and costs.

At Belfast, on February 5, James M'Guigan was summoned by David M'Master, inspector under the Food and Drugs Act, for having sold to him on the 8th ult. margarine as butter. The certificate of Professor Hodges showed that it was margarine and not butter. The defence was that the article had been bought from a wholesale house as butter at the price of 1s. per pound, and that it had been sold as such. The Court fined defendant 40s. and costs.

THE PONTYPRIDD STIPENDIARY ON THE WARRANTY QUESTION.

HOW IT PROTECTS ADULTERATION.

At the Pontypridd Police-court, Messrs. George Dixon and Sons, merchants, Bristol, were summoned by the Glamorgan County Council for issuing a false warranty with lard to Messrs. D. H. Davies and Co, grocers, Pontypridd. Mr. D. Rhys prosecuted, and Mr G. Kenshole defended. Mr. Rhys observed that the defendants were summoned under the Food and Drugs Act of 1875, which provided that any person who gave a false warranty in respect of any article of food would be liable to a penalty of £20. It appeared that Deputy-Chief Constable Jones called at the shop of William Thomas, grocer, Miskin Village, and purchased some lard. Dr. Morgan, Swansea, the county analyst, certified that it contained 75 per cent. of pure lard and 15 per cent. of beef stearine, and proceedings were taken against Thomas. The case fell through as he produced a warranty from Messrs. Davies and Co., from whom he had bought it. They in turn produced a warranty from Messrs. Dixon and Sons. Mr. Rhys understood that Dixon and Sons also relied upon a warranty given them in respect of the same lard by Messrs. Duerden and Sons, refiners, of Liverpool. He submitted that Messrs. Dixon were not entitled to protection under Section 25 of the Act, which stated that the person prosecuted must satisfy the Bench that the article in question was the same nature, substance, and quality as that demanded. In this instance, however, no demand had been made upon Messrs. Dixon and Sons, and therefore the present defendants were not entitled to protection under section 25. The Stipendiary: Your

view is that Section 25 is a protection to the man from whom the prosecution bought the lard, but no protection for the other person from whom the man got it?—Mr. Rhys: Yes—Evidence having been given by Superintendent Jones, Mrs. Thomas, and Mr. D. Davies, Mr. Rhys submitted that Messrs. Davies and Co. could have proceeded against the defendants for damages for selling an article to them which was not what it was warranted to be.—The Stipendiary: I think it is a great pity the law did not leave it there. If we were allowed to fine the defendant in the first instance, the defendant could have sued the wholesale dealer for his remedy. It seems to me that the whole Act is misconceived. These defects in the Act should be brought before a commission.—Mr. Edward Dixon said that they bought the lard from Messrs. Duerden and Sons, refiners, Liverpool, who gave a guarantee as to its purity. Mr. Kenshole argued that the Act gave defendants the right to retain a portion of the sample bought, so as to secure independent analysis. In this case this had not been done, as the purchase by the prosecution was not from the defendants, but from Mr. Thomas, of Miskin, and therefore the defendants had not the opportunity of obtaining the protection which the Act provided. The only person, he contended, who could prosecute was the purchaser from the defendants. If Davies and Co., when purchasing, had notified their intention of analysing the article, the defendants could then have availed themselves of the protection which the Act provided. The Stipendiary decided that the defendants had been deprived of the protection which they ought to have under the Act, of having the lard analysed if they wished. The point was a very important one, and he hoped that the case would be taken to a superior Court, as the Act was quite unworkable, and should be set right. The summons was then dismissed.

MARGARINE BEHIND A SLAB.

At Highgate, on February 11, Arthur Taylor, Turnpike-lane, Hornsey, was summoned by Inspector Bridge, of the Middlesex County Council, who said he went into the shop, and, after getting some butter, asked for half-a-pound of margarine, which was served from a quantity of about 2lb. or 3lb. The inspector contended that under Section 6 of the Margarine Act that was a package, and should have been labelled. He took the proceedings for the public protection. The package in question was behind a screen on a slab.—Defendant contended it was not exposed for sale, and there was only 15oz. of it.—Mr. Bodkin said the Bench, by three to two, had decided to dismiss the summons on the ground that the small quantity behind the screen was not a "package" within the meaning of the Act—They would grant a case for a higher Court.—Mr. Bridge said his committee would no doubt ask for one, as the matter was important for the protection of the public.

CORRESPONDENCE.

DISEASE AND DISINFECTANTS.

To the Editor of FOOD AND SANITATION.

SIR,—Our attention has been drawn to an article in your issue of 2nd inst, referring to disease and disinfectants, with which we entirely agree, but in which our name is mentioned, and it may be misconstrued to our disadvantage, as we feel sure your object is to benefit the public and not do injury to private individuals. We will ask you to kindly mention in your next that there is no John Lubbock, chemist to the London Pure Drug Co.; the only chemist attached to our business is Mr. Joseph A. Myer a member of the firm. Thanking you in anticipation, we are, Sir, yours faithfully,

S. MYER AND CO.,

London Pure Drug Co., 2, New North-road, City-road.

ANSWERS TO CORRESPONDENTS.

E. DAUNT (Bexley).—The issues containing disinfectant articles are out of print, but a fresh series will appear in a few weeks.

T. GILCHRIST (Omagh).—Previous issues containing meat extract analyses are out of print. They are now being prepared for re-publication. You can obtain the journal by ordering it at the railway bookstall.

APPOINTMENTS VACANT.

INSPECTOR OF WEIGHTS AND MEASURES, &c.—(Devonport, February 20).—The Town Council invite applications for the office of inspector of weights and measures for the borough. Information as to duties, &c., can be obtained at the Town Clerk's Office. Salary £75 per annum. Applications in writing, stating age (which must not exceed 50 years) and previous occupation, accompanied by not more than three testimonials, addressed to Mr. J. J. E. Venning, town clerk, must be delivered by 20th inst. The candidate selected must be prepared to pass the examination required by the Weights and Measures Act, 1889.

LOOK ON THAT PICTURE AND ON THIS!

SEWAGE AND DISEASE.

Vide DR. E. KLEIN.

An adjourned inquest was held at Wyde Green, Birmingham, in the case of a woman who died from poisoning after eating soup distributed at Christmas by a local innkeeper. About 120 persons who partook were made ill, but only one died. Dr. Klein, London, now furnished a bacteriological report on a sample of the soup forwarded to him. He declares that the soup was "crowded with microbes" which were derived from sewage, and that the particular bacillus was possessed of virulent properties on account of its extremely rapid multiplication at the body temperature, and the poisonous substances it elaborates. It was shown that within 4ft. of the copper in which the soup was boiled there was an untrapped drain leading from the sink to the sewage pipes. Sewage gas escaped through the untrapped drain, and, floating over the copper, alighted on the soup when the temperature was about blood heat. From that point the microbes developed rapidly. The jury returned a verdict to the effect that deceased died from accidental poisoning caused by sewer gas, and they exonerated Mrs. Page, who made the soup, and the butcher who supplied the meat, from all blame.

SEWAGE AND DISEASE.

Vide THE LONDON COUNTY COUNCIL.

THE Main Drainage Committee brought up a report stating that bacteriological experiments by experts engaged by the Council had been made to determine the fate of the typhoid bacillus in sewage, in order to verify or disprove the statement made by many writers that disease germs, such as the typhoid bacillus, found in sewage a suitable soil for their growth and multiplication. On careful investigation it had been found that the bacillus of typhoid fever was not only incapable of any growth and multiplication in sewage, but that after the first twenty-four hours it slowly and surely died out, its ultimate death under natural conditions being a matter of a few days, or at most one or two weeks. If the organisms which existed in overwhelming numbers in sewage did not exist in sewer air, how indefinitely remote was the possibility of the existence of the typhoid fever bacillus in the air of the sewers. Sewage was, without doubt, a common medium for the dissemination of typhoid fever; sewage-polluted soil might give up germs to the subsoil air; but from the results of these investigations it appeared in the highest degree unlikely that the air of the sewers should play any part in the conveyance of typhoid fever.

ZINC IN TREACLE.

It is claimed for the zinc that it has peculiar properties which allow it to precipitate all foreign matter, and rise to the surface as a scum, which is then cleared off and the molasses is left a pure amber colour.

The New Orleans Board of Health prohibited the use of sulphate of zinc in the adulteration of molasses, and for some time the practice ceased. The manufacturers of preserves, etc., declared, according to American papers, that the enforcement of such an order would practically ruin their business; but nevertheless it was heeded until recently, when fresh complaints were made to the health authorities that sulphate of zinc was entering into the clarifying process of molasses more largely than ever.

A Mr. H. L. Hobart said, in reply to inquiries: "There is nothing in the story worth discussing. Zinc is used to purify and brighten molasses, but not in sufficient quantities to harm anybody. It is an old matter often before the trade, and that's about all there is in it."

Messrs. H. B. Howell's Son and Co. stated: "Sulphate of zinc is one of the ingredients used in a formula to clarify molasses, but we don't believe enough of it is used to injure anybody. The adulteration can only be detected by chemical analysis. There are houses in this market that thus brighten molasses. We believe that the zinc precipitates any foreign matter which the molasses may contain, and then rises to the surface, where it is recovered."

Another firm writes: "Yes; sulphate of zinc enters into the clarifying process of molasses. We have a formula for brightening our goods, and it is a common practice in the trade. Very few pure syrups are received from New Orleans, and when we do get straight molasses it is difficult to dispose of them when shown with brightened goods. It is a miserable practice, however, and we wish it could be stopped."

It appears that this plan of adulterating New Orleans molasses recently came to the attention of a dairy and food commissioner in Ohio. An extensive dealer in molasses and preserves sent him two samples, one bleached and the other unbleached. The manufacturer in question stated that this "bleached" article is the unbleached with sulphate of zinc added, and the zinc is poisonous. The manufacturer further said, it is recorded, he had been forced to "bleach" his syrup in this manner in order to compete with the New Orleans wholesale men, who first inaugurated the process.

It would benefit the public if some of the inspectors who subscribe to our journal would cause a few samples to be analysed to see if the practice is pursued in England.

WEST BROMWICH WANTS AN INSPECTOR.

An inspector under the Weights and Measures and Food and Drugs Acts, at an inclusive salary of £150 per annum, is required for West Bromwich.

ADULTERATION IN CORK: GUINNESS'S STOUT MIXING WITH INFERIOR STOUT.

THE City Analyst, Mr. Daniel J. O'Mahony, F.C.S., has reported:—

"Two milks submitted by the master of the union workhouse were of very low quality, one being deprived of forty-five per cent. of its fat.

"Sixty-eight samples were submitted by the City inspector, Sergeant Ralph, as follows:—31 milks, 2 of which were adulterated; 31 butters, 4 of which were adulterated; 6 'wines' containing no injurious ingredients. Nineteen milks were of good quality, four moderate, and six very poor, being on a par with lowest quality milk; four butters were good, fifteen moderate, and eight of very poor quality. The fat in the thirty-one samples of butter was specially examined for margarine; two only could be considered suspicious. The analytical results would not, however, justify prosecutions. Four of the 'wines' examined were of poor quality, two moderate. All were 'manufactured wines,' and gave no evidence of cochineal, indigo, or aniline colours; there was no salicylic acid or other injurious ingredients present, and the colouring matters were of vegetable origin. All samples were mixtures of grape juice or 'must,' with varying amounts of sugar, alcohol, and water. The clarets ranged from eight to nine and a-half per cent. alcohol; the ports, sixteen to nineteen per cent.

"I have again to call your attention to the shamefully inadequate fines imposed in adulteration cases occurring in this city. Your efforts to protect the public from fraud should be aided by the infliction of smart fines on conviction. It goes without saying that adulteration is a very paying business, and on this ground alone larger penalties might well be inflicted, and would do more than anything else to put a stop to this mean form of fraud."

A Mr. Lovell said in the case of the mixing Guinness's porter with other brewers' porter was that adulteration, for he knew that to be done frequently?

Mr. Slattery said Messrs. Guinness were very well able to take care of their stuff.

IMPORTANT INVENTION IN GLASS.

A NEW variety of window glass has been invented by Richard Szigmondy, of Vienna, the peculiar virtue of which is its non-conductivity for heat rays. It is stated that a light of glass $\frac{1}{4}$ -inch thick absorbs 87-100 per cent. of the heat striking it, in contrast to plate glass, which absorbs only 5 per cent. This glass is to give us a window which will keep our dwellings warm in winter and cool in summer, and be especially adapted to skylights, etc., and also to blue glass spectacles for the use of furnacemen. In noticing this invention it might be well to call attention to the peculiar conducting power of ordinary glass, which would seem to render Szigmondy's glass an impossibility in some of its claims at least. If we stand by a window on which the sun shines, we may feel the warmth of the sun, but if we touch the window panes find it cold. If now we take a glass and place it between us and an ordinary open fire it will screen us from the heat, but will become rapidly heated itself. In the first case it transmitted most of the heat, and in the latter case it absorbed it. Plate glass may absorb but 5 per cent. of sun heat, but it absorbs 94 per cent. of heat from a source of 400°. In general it might be stated that glass transmits the luminous heat rays, and absorbs non-luminous rays, and this is why a light, sunshiny room is so warm in winter. The glass transmits the heat of the sun and absorbs the heat of the fire. If Szigmondy's glass is opaque to luminous rays, it will keep a house cool in summer, but tend to make it warmer in winter, as glass non-conductive at one time is non-conductive at all times.

AT Wandsworth District Board last week Mr. Hare alleged that the money spent in testing articles of food under the Sale of Food Act was wasted, because the inspector only purchased articles of a high price, whilst the food of the poor was not tested. They would find plenty of impure butter if the 1s. per lb. article were tested. It was referred to the Sanitary Committee to instruct the inspector.

SOMERSET HOUSE AND BUTTER ANALYSIS.—At Clerkenwell Vestry the Public Analyst (Mr. J. K. Colwell) attended to answer a question as to a dismissed summons for adulterated butter which was before the Clerkenwell magistrate. The analyst said the sample submitted to him contained 25 per cent. of other than butter fat; but the Somerset House Analyst, to whom the third portion of the sample had been submitted, declared it to be pure butter. On this last certificate Mr. E. Winter Blyth, vice-president of the Society of Public Analysts, however, examined the sample which had been analysed by Mr. Colwell, and wrote as follows:—

"I have carefully analysed the sample of butter, and entirely agree with your opinion that the butter is a mixture—probably about 25 per cent. of foreign fat." Mr. Colwell added—I am unable to criticise in any way the certificate of the Somerset House authorities, as no figures were given which would show in what manner they had arrived at their conclusion that the butter was genuine; and I can only add that I am convinced the sample I analysed did contain the foreign fat as certified by me. The Vestry accordingly passed a resolution absolving the analyst from blame in the matter.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. JAMES LONG'S EVIDENCE.

XXXIII.

(Continued from page 48.)

MR. CHANNING: I want to ask two questions to clear up points in your evidence. In the first place, did I rightly understand you to say that your experience was that the morning's milk was richer in fat than the evening's milk?—Yes, almost always.—Was it the real morning's milk or the milk analysed in London which really was taken?—That was the milk obtained from the cows in the morning.—Mr. Fry: Early in the morning?—Yes.—Sir Mark Stewart: You found that the morning's milk was richer than the evening's milk?—Yes; always.—Mr. Channing: We have had evidence from other witnesses to the exact contrary.—Will you kindly put your original question again?—The question is whether you say that the morning's milk contained a larger percentage of fat?—I did not say that; it is quite the contrary.—That is what I wanted to clear up. Then you agree with other witnesses that the evening's milk contains a larger proportion?—There is about one per cent. difference in the total solids.—Now another point. You have expressed an opinion that it is not desirable to have a standard for solids not fat?—I have.—How would you deal with a case of this kind. Supposing that a fraudulent dealer gave the top of a churn of milk to the inspector's substitute, or whoever took the sample, and that sample contained a rather ^{small} proportion of cream; and supposing that you had in such a sample a percentage of 5 per cent. of fat, and 12 per cent. of total solids, that would only leave 7 per cent. of solids not fat?—Yes.—Would not that probably be a watered milk?—It would be indicative of something being very wrong.—Then the percentage of solids not fat is of material importance, is it not, in relation to frauds?—In a case of that kind it would be; but that is so unusual a case that I do not think it need be provided for, because it would always be discoverable with the greatest ease.—Is not that a stratagem that is frequently resorted to?—Not to give 5 per cent. of fat.—But to take the top of the churn, which gives an unfair representation of the real quality of the milk?—To the inspector it probably is. In that case you may have a very high percentage of fat, and at the same time the whole of the milk in the churn might be considerably watered?—Yes; but I take it that any person who

countries contains less than nine per cent. of solids not fat whereas, if you established a low standard, say 8.7 or 8.75 per cent., then you would be providing for a milk of low standard to the public. No harm is done to anyone in the case of 3.2 for fat, and 12 per cent., as I propose, for total solids, whereas, you are ensuring milk of high quality.—And you think, on those grounds that it would be dangerous to fix by law a standard of solids not fat?—I do.

MR. SAMUEL WILLIAM FARMER Examined:

Mr. Channing: You are a large farmer in Wiltshire, I believe?—I am.—And a Member of the County Council?—I am an Alderman of the Wilts County Council.—How much land do you farm?—Upwards of 10,000 acres.—And you send milk on a very large scale to London?—I do.—Would you state to the Committee what the average amount that you send to London is?—As you may imagine this large acreage is extended over a considerable area, and we send milk from some 16 different herds of cows; they are all dairy shorthorns, the herds varying in number from 40 to 80 in each herd.—Mr. Fry: Most of your land, I suppose, is pasture?—No, the larger proportion of it is arable land. We have all kinds of land; we grow large acreages of corn, and keep large quantities of sheep.—Sir Walter Foster: All these separate herds are under your management, and you know all the details of sending milk to London, and so on?—Yes.—Would you state where you send your milk, and how it is disposed of?—The milk is principally sent to different firms in London, particularly to the Aylesbury Dairy Company at Bayswater.—How much do you supply them with on an average?—It is about 1,500 gallons a day; sometimes more and sometimes less.—What is about the total amount that you send up to London from your various herds?—About 2,000 gallons a day.—Do you send the supply of milk under any contract as to the constituents and composition of the milk?—Yes, my contract is that the milk shall contain not less than 3.25 per cent. of fat, and we have had no difficulty at all in keeping up to that standard; in fact our average is considerably above that. I think that out of 10,000 churns sent during the last six months we have only had 16 churns as low as 3.25 per cent. and only three under that standard.—Are the churns separately analysed?—I cannot state that every churn is analysed, but our position is this: that directly any churn approaches in analysis near the 3.25 per cent., the limit of the contract, they at once advise us of it.—The Aylesbury Dairy Company?—Yes.—Do you supply much milk from single cows, or is this invariably mixed milk from large numbers of cows?—It is invariably from herds of cows; we do not send milk from single cows at all. Shall I give you some figures as to that?—If you would give us some figures I think it would be desirable?—We find, at least I am informed by the Aylesbury Dairy Company, that the following are the averages of our supplies during the past six years. The six years average has been 3.84 per cent. of fat and 8.92 per cent. of solids not fat.—That is a six years' average?—Yes; the highest yearly average has been 3.92 per cent. of fat, and 9 per cent. of solids not fat; the lowest yearly average has been 3.80 per cent. of fat and 8.87 per cent. of solids not fat. The highest monthly average has been 4.24 per cent. of fat, and 9.17 per cent. of solids not fat; whilst the lowest monthly average at any time has been 3.56 per cent. of fat and 8.84 per cent. of solids not fat.—These percentages are ascertained by the analysts of the Aylesbury Dairy Company?—Yes; that is so.—Have they till quite lately, been determined by Dr. Veith?—Yes; and from these figures; and the very few instances, only three churns, in which we have had anything as low as 3 per cent. out of 10,000 sent to them during the last six months, I am of opinion that any herd of cows properly nourished would produce milk with 3 per cent. of fat.—Mr. Fry: What breed of cows are yours principally?—Dairy shorthorns.—Mr. Channing: You do not supply milk from single cows, I understand?—No; we do not.—But have you considered the tables which have been handed in by the Aylesbury Dairy Company as to their results?—From single cows, do you mean?—Yes?—Yes; I have seen them.—They are not derived from you then?—No; they are not derived from me.—Is there anything that you wish to add as to the analyses?—No; I think not. I might observe that there are very large supplies of separated milk now sent to London, extremely large supplies; and it seems to be especially in times of scarcity and high prices these supplies of separated milk seem to be increasing continually.—Mr. Fry: I suppose you do not make any butter?—We do not make any butter if we can sell the milk; but in times when there is an over supply of milk we then separate the milk; we have two separators, and make butter.—Do you send the separated milk to London?—No, we do not; we give it to the pigs. I should not say that we never have sent it, but it is an extremely rare thing to have done so.—Mr. Channing: In your opinion, the use of separated milk to adulterate whole milk has increased during these last few years of depression?—I have no doubt that it has; it increases very largely, especially in times of scarcity and high prices. When there is an over-supply of milk, there is no temptation, of course, to use the separated milk.—Was that especially the case last year when the supply of milk was scarcer?—It is difficult to say when it does apply, but it applies whenever there is a scarcity. It seems to me that the adoption of a low standard under those circumstances would practically legalise adulteration.—What do you call a low standard?—I think anything below 3 per cent. Seeing that I, from my herd, have only had so small a number less than 3.25 per cent., if you put anything below 3 per cent. it must be called a low standard. It would be much

The Witness handed in the following Table:—

AVERAGE Wholesale Prices per lb. of the Finest Danish Butter.

	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
November	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
December	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
January	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
February	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
March	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
April	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
May	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
June	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
July	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
August	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
September	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
October	1.44	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34

occupied a position of respectability would, on no consideration, permit such a proceeding as that.—But I should like to know whether you would not qualify your answer as to a standard of solids not fat. It is a matter of importance in determining cases of fraud, is it not?—I do not think it is, looking at it broadly. I think you would have a much greater ill-effect if you established a standard for non-fatty solids than if you established none.—You think that it would conduce to other kinds of fraud?—I think that is the whole crux of the question.—Then perhaps, as it is a matter of great importance, you would explain your view upon that point?—If you established a standard of 9 per cent., for example, you would undoubtedly be subjecting many innocent persons to prosecution; because, as I have shown in many cases in evidence, a very large proportion of the milk of this and other

better to have no standard at all than a low one.—Have you formed any opinion as to how you would state your standard; would you have a standard of the proportion of fat and the total solids, or would you have a standard of the proportion of fat and of the proportion of solids not fat?—It appears to me that that is a question rather for analysts to determine, seeing that the evidence which I am giving is rather bearing on the fact that there is no occasion to supply from a herd of cows a low standard of milk. That is practically what I want to show.—You have not formed an opinion as to whether the fixing of a legal standard of non-fatty solids would operate unjustly or encourage adulteration?—No; I have not felt myself competent to form an opinion on that subject. You think that the test of the value and purity of the milk is practically to be found in the proportion of fatty solids?—That is as it has occurred to me.—Have you any evidence to give us as to the feeding of your cows, and the results of feeding?—I can answer any questions that you would like to put to me upon that matter.—I understand you to say that the whole of these herds are dairy shorthorns?—Yes.—Are they all managed on the same principle, and on pretty much the same land, or does the land vary?—The land varies very considerably, but they are all managed on pretty much the same principle.—Will you state how they are fed, and give us an idea of the ration that you give your cows?—In the summer time when the cows go to grass, first of all, and the grass is young and succulent, we should give them a moderate quantity of cotton cake.—Sir Mark Stewart: How much?—Four pounds.—Mr. Jeffreys: Four pounds a head?—Yes.—When is that?—When the grass is young and succulent.—Mr. Channing: How long do you continue that?—Probably till the first week in June, till the grass begins to get older and more hearty.—About three weeks would that be?—Practically a month. I am giving, of course, general ideas; circumstances may arise under which we alter it; for instance, if we had a very rainy time and the grass was still young and succulent in August.—The object of my question is this: you stated your experience to show that a high percentage of milk is perfectly ascertainable, and I want to bring before the Committee, therefore, how your cows are fed; would you continue your statement as to that?—After that date, until the cows were stalled in the winter, they would simply get the grass.—Sir Mark Stewart: That is till the middle of November?—Yes, till the middle of November.—Mr. Jeffreys: After that you give them nothing but grass?—Or a few roots or cabbages if they happened to get short; but practically grass is the general food of the cows.—Mr. Channing: One witness has stated the exact quantity that he gave the cows, of beans, peas, and pulped roots, and so on; are you in a position to give us figures as to those proportions?—I can give you figures; they vary according to the qualities of the food at different times. If we had in certain seasons a poor quality of hay, for instance, or a poor quality of fodder generally, we should then give a better food; we should give more linseed cake or perhaps a little boiled linseed, or something of that kind.—Do you think that the steaming of the food has any effect on the milk?—I have no experience. I should think that probably it has. But we could not possibly steam for so large a number of cows as ours; we should not have the appliances to do it.—Do you give them much bean and pea-meal?—During the winter-time, when they are stall-fed, we give them chopped straw, oat-straw, and hay, with pulped roots.—Sir Mark Stewart: What proportion of hay and straw?—They have what they would eat *ad libitum*.—Of either?—More straw than hay, a good deal. In some seasons the straw is a good deal better than the hay is in other seasons.—Mr. Channing: Then what quantity of pulped roots would you give them?—If we had a good supply we should give them as much as half-a-hundredweight a day each, and in a season when roots are scarce they might drop down to very little, perhaps no more than 15 or 20lbs. each.—Mr. Frye: Do you give them any grains?—None at all.—You cannot get them, can you?—No.—Mr. Channing: You give them no brewers' grains?—No. Then we give them probably a mixture of bran, cotton-cake, decorticated cake, and at times linseed cake, and maize-meal, about from 8 to 10lbs. a day each during the winter.—Mr. Jeffreys: What proportion of cake?—Which kind of cake are you speaking of?—Decorticated cake in the winter?—We give them about one-third of that; about one-third of the food would be cake.—How many pounds?—It would be about 3lbs., but if we had, as we did in 1888, very bad food indeed, to a large extent all the fodder spoilt, we should get up as high as 12lbs. of cake, because the food produced on the farm was so inferior in every way that you could not nourish your cows with it.—Mr. Channing: Do the prices vary?—Yes; you may take it that they would average from 8 to 9lbs. each of the mixed food during the winter months and in a bad season they would get up as high as 12lbs.—Do you find very much difference in the results, for instance, from pea meal and maize?—We know the result in quantity more than we do in quality. We only are found fault with for quality when we drop too low. The analyses are not given to us; but, as a matter of fact, during the seasons in which we had a very bad quality of fodder on our land, we found that the addition of linseed, either in the shape of boiled linseed, or crushed linseed, or linseed cake, certainly affected the quality of the milk.—You think that the oily food affected the quality of the milk?—There is no doubt that it did with linseed.—That it increased the proportion of fatty solids?—Yes.—Did you notice the proportion of increase of fat produced by any specific addition of

food?—No; all I know is that it gave satisfaction directly; we were well above our contract standard of 3.25 per cent.—But is your evidence, then, that food has much bearing on the quantity of fat in milk?—Undoubtedly; if you give linseed you can increase the fat. A man with two or three cows knows that if he gives his cows linseed cake he makes more butter directly in that week; whereas if he gave them maize meal, he probably would not make more butter.—You are aware that that opinion is not shared by a good many agricultural authorities?—Yes, I have heard that it is not.—Your experience is to the contrary effect?—My experience is distinctly that if you give linseed cake to a cow, you can make more butter from her when she is having that than if you gave her maize meal. I cannot say about the analyses, because we do not get the analyses.—To sum up this question of food, would you say that your cows are fed much more highly than the average cows of farmers who do their work well?—Not as you put the question; not as farmers who do their work well. I should say that my cows are decidedly well nourished.—They are fed up to the average, but not exceptionally fed; they are not forced in any way?—They are kept well.—And I suppose when they are dry you make a difference?—Then we try to keep them almost as barely as we can.—You do not give them any rich food, then?—No.—So that on the whole their condition after calving would not be very high?—Our cows generally calve down well, but we do not force them at that time. We give them plenty of good food.—You expressed the opinion that if a low standard were adopted it would encourage adulteration?—I have no doubt about it at all.—And that is established, is it not, by the figures that you have laid before the Committee, that is to say, that with those figures you find no difficulty in producing an average considerably over your contract, I see?—Yes, the lowest monthly average that we have ever sent up has been 0.21 beyond the contract standard; we have been 3.56 per cent. at the lowest.—If, therefore, a standard of 2.50, or even of 2.75 per cent. were adopted, it would be possible to add a considerable proportion of separated milk, and still to find in a sample of the mixed milk the fat required by such a low standard? I think so, certainly. I think that there are many milkmen in London who buy milks which they can rely on as being especially rich, in order that they may, in times of scarcity, be able to adulterate them.—Have you any opinion to offer as to the results of the percentage of fat in the milk of single cows; have you any evidence of your own to offer on that point?—No, I have not.—You are aware that the evidence as to single cows, as laid before the Committee by the Aylesbury Dairy Company, shows that only about 10 per cent., or 15 per cent. at the most, fall below the standard of 3.20 per cent.?—I should think there were very few cows that fell below that, comparatively not so large a percentage as you say.—The percentage in these tables shows that about 10 per cent. of the cows fell below 3 per cent., only about 10 per cent. of all the single cows whose milk has been analysed?—I cannot speak on that point.—I only want to ask you this question: whether with your very wide experience of dairy farming, your own experience of cows corresponds to that; that the proportion of such cows as an ordinary good farmer would have which would give milk below your standard is comparatively small?—I should say very small indeed, and I should have thought much smaller than the figures which you imply are in the papers of the Aylesbury Dairy Company. I should have thought that it would not be anything like 10 per cent. of the cows that would not give that quality of milk.—Your own impression is that 10 per cent. is rather a high average?—I should think a high average for properly nourished cows.—That even a smaller percentage than 10 per cent. would be found giving less than 3 per cent. of fat?—Yes, I should think so.—I believe you wish to say something about the right of dairymen to appeal to the cow in case of prosecution?—I think that adulteration is at times so remunerative that fines are practically useless as a deterrent, and I think that nothing but imprisonment has any chance of stopping it; and then in order to avoid injustice in a case of that kind, I would give any man the opportunity of appealing to the herd of cows itself to show whether the cows did give the pure milk which he claimed that they gave.—Mr. Frye: But what use would that be: how could you tell what cows this particular milk came from?—I am taking it that it would be possible to trace the milk; of course if it was not possible to trace the milk you could not do it.—Do you think that it is possible?—In some instances perhaps it would not be possible.—Mr. Channing: But in your own case how would such an appeal be workable. You have these large herds and you would not be able to appeal to the whole herd of cows?—In my case the thing would be perfectly easy. I can quite see that there would be difficulty in some cases, but I could tell you what cows or what herd of cows every churn of milk came from.—Mr. Frye: But we have got other people to deal with, not you?—That is so.—Mr. Channing: Would you explain how your idea of the appeal to the cow would work; you would only apply it, I suppose, in the case of small farmers?—I should apply it where I could trace it. If you cannot trace it, it is of course impossible to apply it. That is a difficulty that had not occurred to me.—Have you not some evidence to give us as to the general conduct of the dairy trade in London?—I do not think I have anything further to say than what I have already stated.—Have you no experience of the milk testing trials carried out at the British Dairy Farmers' Shows?—No, I have not.—Then you would not be able to say whether trials of that kind would be a fair general test of the productive powers of cows?—I should think that

probably in those cases the cows were picked cows, but I do not know; I could not give any evidence as to that.—They give very large figures; I thought perhaps that you had some experience on that subject?—No.—Now as to the sampling of milk, have you any experience as to the sampling of milk in cases of alleged adulteration?—No, I have not.—Have you any other points which you wish to bring before the Committee?—It appears to me that so far as margarine is concerned the whole object of colouring it is fraud.—Have you a committee on the Wilts County Council dealing with questions of adulteration?—No, we have not.—Have you taken any action with regard to butter frauds yourselves?—We have a county analyst and we have an inspector, who take samples, but very little has been done in the matter.—Have you any evidence to offer us as to that?—No.—Except that in your opinion margarine should not be coloured?—It should not be coloured.—Sir Mark Stewart: Do you think that if margarine was not coloured fraud would be prevented?—I do not think it could be sold as butter under those circumstances.—And what effect would that have upon the butter market?—I have not considered the effect upon the butter market; I was considering the effect on the public that they would not buy for butter what was practically a totally different substance.—Have you ever considered the plan which we have had sketched out in this room of having two counters, one for margarine, and one for butter, in the same retail shop?—No; I have not.—In regard to the appeal to the cow, do you weigh all the milk of your different cows?—Yes; it is not weighed every day; we weigh the milk of the different cows once a week.—And do you test the milk of each cow?—For quantity, but not for quality.—Then, in fact, you test each churn?—I do not understand your question.—Do you test the quality of each churn of milk occasionally that you send away?—No; we do not test our milk at all; it is tested by the purchasers of the milk.—Then you do not test it at home?—No.—You have no Babcock system then, or anything of that sort?—We have none; we have no time to do anything of that sort; it is all sent away at once.—Do you see much difficulty in the way of any ordinary farmer arriving at a just conclusion as to the quality of the milk?—I do not think it would be very reliable.—Mr. Channing asked you whether you would recommend an analysis in the case of large dairies as well as in the case of small dairies, and my point is to know whether you think that there would be any real difficulty in the case of small dairy farmers arriving at a fair conclusion as to the quality of their milk without testing it at home?—I do not think they could test it at home reliably, not the dairy farmers themselves.—You do not think that they have the appliances or the knowledge?—No; or the skill.—Do you give any bean meal to your cows?—Not often.—You prefer the pea meal?—It is seldom that we use either pea or bean meal; we do use pea and bean meal occasionally, but we use a great deal of maize meal.—Chiefly decorticated cake?—And cotton cake, and linseed cake.—Decorticated cotton cake?—Yes.—You do not find that it gives a taste to the milk?—No.—Have you ever heard that it gave a taste to cheese made from the milk of cows fed by decorticated cake?—I have not.—What amount of grass do you allow to each cow for grazing?—The cows eat grass *ad libitum*; they are out in the meadows eating what they please.—But in regard to acreage; do you allow an acre per cow?—It varies very much according to the farm; it depends upon whether you want it simply to summer them or to winter them too.—And your evidence is that you think that 3·25 per cent. of fat and about 8·92 per cent. of solids would be a fair average?—No; I did not say that. I said that my contract was 3·25 per cent. of fat, but I think that if a standard is fixed it should not be less than 3 per cent.—You advise a standard of 3 per cent., if there is to be a standard?—Not less than 3 per cent., certainly.—And how much of solids?—Perhaps 8·5 per cent., I should think; but that is rather a question for the analysts, I think. Mr. Channing: I think you rather declined to express any opinion as to the question of a standard for non-fatty solids?—Yes, I did.—Mr. Jeffreys: You said that your contract was 3·25 per cent. of fat; what was the solids not fat in your contract?—8·75 per cent.—You omitted that, I think?—Yes, I did not state that.—Then your contract is for a very high standard, is it not?—Out of 10,000 churns I have only had 16 as low as the standard during six months.—And yet from several other witnesses we have had evidence that they think 8·5 per cent. a good average for solids not fat, and 2·75 per cent. for fat; and they thought that 11·5 per cent. was a fair average?—My experience goes to show that that would be a very low quality of milk indeed.—And they thought that if such a standard as that were fixed, there would be a fear that good milk would be watered down to it?—Yes.—Do you think that rich milk is now watered down to a certain standard?—I have not the slightest doubt that in time of scarcity and high prices, rich milks are bought purposely that they may be lowered down in that way.—And the dairymen give rather a higher price for rich milk, do they not?—They secure them if they possibly can.—Channel Islands milk, for example?—Yes, but it is difficult to get it.—Do they buy that to water down?—I do not think they can get it to water down; it would be bought, probably, for special purposes.—Would you not be afraid that if you fixed your standard too high, some cows that were poorly fed (not so highly fed as yours) might not come up to the standard, and so you would cause hardship to small owners?—That is why I have taken the figure of 3 per cent.—much lower than my contract of 3·25 per cent. Our cows, when they have

been feeding only on grass, have not dropped so low as 3·25 per cent. In the month of May, which is probably a low month, when there is a large quantity of grass, the lowest monthly average was 3·56 per cent.—But during that time you said that you gave them 4lbs. of cake a day?—That is really to keep the grass in them; otherwise the succulent grass runs through them.—Does not that consequently improve the richness of the milk of the cow?—Yes, of course it does. If a cow has diarrhoea she cannot give that milk.—Then during that time the cow is not badly fed, because she gets the grass and 4lbs. of cake a day?—We do not feed our cows badly. I say that all cows ought to be properly nourished.—But you can understand a case where a small man could not give his cows so much cake a day, and would feed them on grains instead; would not that reduce the quality of the milk?—Then if he were a small man, the difficulty would not arise in tracing the milk to the cow.—In that case, with an appeal to the cow, you would not subject a man to a penalty?—You could not call it adulteration.—If we passed an Act to fix a standard, you would say that, notwithstanding the fixed standard, if there was an appeal to the cow, as it is called, and it was proved that the milk came direct from any cow, you would not prosecute the man?—If it could be clearly shown that the milk was pure and unadulterated, I would not prosecute.—Have you had much experience of this mixing of separated milk with fresh milk, and selling it as pure milk?—We know, as a matter of fact, that during times of scarcity very large supplies of separated milk are sent to London daily, and go into the hands of milkmen here; and the greater the scarcity of milk in London the greater the supply is of separated milk.—Is not this mixture, when it is sold as fresh milk, a clear fraud upon the purchaser?—I think it is, undoubtedly.—And you wish to stop it by every means in your power?—Yes.—Not that you or anybody would wish to forbid the sale of separated milk, as such?—No.—But you would wish to forbid a mixture of separated milk and fresh milk being sold as fresh milk?—Yes.—And so far as you know, is there a good deal of fraud in that way carried on?—I think there is a very great deal, and increasingly so, especially in winter times and times of scarcity. It is not a daily occurrence, but there are times when there is an over-supply of milk in London, and then there is no temptation to adulterate with separated milk; but directly the temptation arises there is no doubt that it is carried on to a very large extent.—And I suppose that these dealers purchase this separated milk at about a penny or three-halfpence a gallon and mix it with fresh milk, for which they have to give 7d. or 8d.?—Yes; practically the difference would be that the separated milk would 20 per cent., or one-fifth the value of the other; from a fourth to a fifth of the value of the other.—And, of course, if they could mix these two milks and palm them off upon the public as fresh milk, they would make an immense percentage on that?—Very large profits.—How would you propose to stop that?—It seems to me that it might be desirable to offer rewards to any person who will give such information as will lead to conviction for adulteration. There must be plenty of people here in London who assist in that mixing, servants, and so on, and in different ways. I think that we not only have the evidence of the analyst showing that it is below the standard, but we might also get the evidence of the people themselves who actually did it, if a reward were offered, or a portion of the fine, or some means of that kind well adopted.—But supposing that the rich milk were mixed with the separated milk, and yet it came up to the low standard which some people have suggested of 11·5 per cent., would you prosecute them?—Does not that matter answer itself, if it is below the standard?—Yes; but you would wish to prosecute anybody, I suppose, for making up this mixture and selling it as pure milk, for trying to palm off a fraud upon the public, whether it comes up to the standard or not?—Yes, certainly.—Then I ask how are you to detect it, if it comes up to the standard of 11·5 per cent.?—You cannot detect it unless you can get evidence of the actual mixing.—You think that the only way would be to induce those people to inform against their own employers, in fact?—Yes.—That is the only way that you can see of detecting it?—It would be quite possible, although it might be difficult, to trace the milk from its source. Separated milk is sent to London, and it is matter of common knowledge where it goes to; to people in the trade; what do they do with it?—I suppose that such a thing as this adulteration is seldom or ever done by the farmers themselves?—The farmers themselves in very few instances have separators, so that they have not the separated milk to adulterate with. Of course I am not saying that farmers are entirely free from fraud in any kind of way; there are dishonest men amongst farmers as amongst other classes, and they will adulterate with water.—But still we have had evidence to show that it is very seldom that this milk is adulterated at the source?—It is not adulterated with separated milk at the source.—We have heard that it would be a great assistance in detecting these frauds if there were more inspectors going round the country, and going into the various shops; do you think that there is not sufficient inspection of milk?—I do not think there is.—What happens in your county; do not the police inspect samples of milk?—No, they do not. I should not like to speak very clearly about it, but I believe that our inspectors do those things.—Inspectors of what?—I think it is the Inspector of Weights and Measures, but I am not quite certain about it.

(To be continued.)

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Food and Sanitation.

SATURDAY, FEBRUARY 23RD, 1895.

BAKING POWDER SWINDLES.

SINCE the curious High Court decision that baking powder was not an article of food, there has been an enormous increase in the sale of preparations containing alum. This question, and that of condensed separated milk, are points which should not be lost sight of by the Select Committee on the Food and Drugs Act when it resumes its sittings.

Mr. George F. Payne has recently been investigating baking powders, and says:—

"The ingredients most commonly entering into the manufacture of baking powder are: bicarbonate of sodium, cream of tartar, tartaric acid, phosphate of calcium, and alum. Every ingredient which goes into a first-class baking powder always is thoroughly dried. If this is not done, the slight amount of moisture present enables chemical action to go on steadily, and the leavening power of the powder rapidly decreases. To retard still further any such action, which may take place from the moisture absorbed from the air, a certain percentage of dry starch is used to protect the particles of the powder as much as possible from action upon each other. Flour is sometimes used in place of starch. Baking powders should always be kept thoroughly dry, and, in making bread, should never be mixed with water first, as is sometimes done, but should be first thoroughly mixed with the dry flour before making into dough.

"A baking powder made of cream of tartar and bicarbonate of sodium leaves only rochelle salts in the bread; one composed of tartaric acid and bicarbonate of sodium leaves only tartrate of sodium. Another compound, of acid phosphate of calcium and bicarbonate of sodium, will leave in the bread reverted phosphate of calcium and phosphate of sodium; and still another, manufactured from alum (dried ammonia alum is the kind ordinarily used) and bicarbonate of sodium, will leave hydrate of aluminium, sulphate of sodium, and sulphate of ammonium. If sesquicarbonate or bicarbonate of ammonium is used as a baking powder, which is sometimes done by bakers in making their finest cakes, the only residue left in the bread will be possible traces of ammonia, as the carbonates of ammonium are completely volatile in the heat of an ordinary cooking stove.

"There have been many conflicting statements made by the manufacturers of various baking powders. To believe them all would be to give up baking powders altogether, as most of them make the most astounding statements in regard to the goods of their competitors.

"In judging the merit of the different baking-powder claims, there are some important facts which bear heavily upon the subject and may influence a manufacturer's mind very decidedly in some cases. In the first place, cream of tartar is a harmless salt, which separates from grape juice when it is made into wine. Tartaric acid is made from cream of tartar, and is the acid of grapes. The residue left by either of them in the bread by their action on the bicarbonate of sodium, being mildly aperient, is inclined to correct indigestion. A powder made with either is considered an excellent one, but cream of tartar and tartaric acid are expensive substances. Acid phosphate of calcium is cheaper than cream of tartar or tartaric acid, but leaves reverted phosphate of calcium, as well as the gently purgative phosphate of sodium, in the bread. Alum baking powders are usually made with thoroughly dried ammonia alum. On using such a powder the bicarbonate of sodium decomposes the alum into hydrate of aluminium, sulphate of sodium, and sulphate of ammonium. Dried alum is cheap when compared with cream of tartar or tartaric acid, costing about one-fifth as much. It is also known as burnt alum. It is used on account of its cheapness. The carbonates of ammonium are not used to any great extent in baking powders; they have been used in one or two instances

in small quantity to increase the leavening power, but, having found none in recent analyses, its use has probably been dropped, in anticipation of a prejudice that might be stirred up against the use of any form of ammonia, by the unreasonable attack of interested manufacturers seeking to push their own less efficient combinations.

"Dried alum, when not decomposed by bicarbonate of sodium, is poisonous, no doubt; a fatal case being on record where death was produced by one ounce of it being taken by mistake for epsom salts."

THE COMMON COMMUNION CUP.

DR. A. H. ASHMEAD, of New York, in a communication to a daily paper, said that when he last knelt at the communion altar the wine cup was passed to him by a patient of his whom he was treating for a horrible and contagious disease. He knew that the man's mouth was covered with the foul sores of that disease, yet he had used the cup before passing it. The doctor naturally refused to taste the wine. How often are the innocent thus made to suffer with the guilty through even the performance of so sacred an act as accepting and using the communion chalice?

BUTTER V. MARGARINE.

By HARVEY W. WILEY, A.M., PH.D., M.D.,
CHIEF OF THE DIVISION OF CHEMISTRY, DEPT.
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THE great drawback to all efforts to procure legislation for pure food comes from misguided though earnest advocates. This is especially true in the contest that has been waged to secure control of the oleomargarine trade. Instead of facts and arguments, fictions and vilifications have been used. The most extravagant and unaccountable statements have been published far and wide regarding the composition and digestive deportment of this innocent discovery of M. Mege-Mouries. I give here a sample of this campaign literature taken from the report of an address of a gentleman occupying a high position in the Elgin butter trade. He says of oleo:—

"When eaten in quantities and with avidity as pure butter, it is insoluble by the digestive processes and remains a floating oleaginous mass in the stomach and bowels to ferment and sour and thus disturb the entire system, and to poison the blood with a lot of putrid matter."

Another gentleman recently asserted in the columns of an influential agricultural journal that he held in his possession a certificate from a competent chemist that coal oil stearine was used as the backbone of oleo.

Pure butter has a delicacy and a flavour which oleomargarine can never hope to supply, and it has nothing to fear if allowed free and open competition with oleomargarine under its own name. It is a good illustration of the selection of food for flavour rather than nutritive powers. A pound of good oleo may have as much nutritive value as one of good butter. Were I eating glycerids for their calories alone I would take the cheaper one; but we are willing to pay more for the butter because it has a more pleasant flavour. But far be it from me to prevent my brother from purchasing the cheaper food, if it be more befitting the exercise of his taste or the contents of his purse.

JEYES' DISINFECTANTS.

THE annual general meeting of the Jeyes' Sanitary Compounds Company, Limited, was held at 43, Cannon-street, E.C., on Monday, 4th inst. After making ample provision for depreciation, etc., and placing £2,250 to reserve (bringing that fund up to one-half the subscribed capital), a dividend was declared at the rate of 10 per cent. per annum, in addition to a bonus of 2½ per cent., the whole free of income tax, leaving a balance of £506 13s. 1d. to carry forward.

THE LAW AND COCOA ADULTERATION.

THE proceedings in the Queen's Bench Division of the High Court of Justice, on February 14, again prove the need for the creation of a Commercial Court, presided over by a Judge who understands commercial questions. The precedent set by giving to Mr. Justice Vaughan Williams the winding up of public companies has worked to the public satisfaction and benefit. It is no disrespect to Her Majesty's Judges to say that it is not to be expected of them that they should know all about the methods of manufacture of articles of food, and it is, therefore, not surprising that in cases of adulteration appeals they are inclined to accept as expert evidence statements which amaze those who have made food and its manufacture a life study. A few weeks ago, at Gosport, Admiral Field, M.P. sitting as a magistrate to try a case, took the following view of his duties:—George Moore was summoned by Police-sergeant White, of Eastleigh, for selling cocoa adulterated with 80 per cent. of starch and sugar. Sergeant White said that on the 13th ult. he sent his son into the defendant's shop, and stood at the door while the assistant sold him a pound of cocoa, for which he paid 6d. Witness then revealed who he was, and told the assistant that the purchase had been made under the Food and Drugs Act. The analysis showed the adulteration to the extent of 80 per cent. Defendant said the cocoa was manufactured at Bristol, and sold as chocolate. He found it on the premises when he took them. Admiral Field asked defendant what cocoa really was.—Defendant said the only pure cocoa was cocoa nibs. The Admiral told defendant he was making a very poor defence. He was a most incompetent defendant. He (the Admiral) could make a better defence himself, and as he could not see him suffer he was inclined to make it. He asked White what he expected to get. White said loose cocoa was asked for. He expected to get cocoa. The Admiral: What do you understand by cocoa?—White: Ground cocoa nibs. The Admiral: You didn't know till just now what cocoa was. He told him no one would drink pure cocoa. Ground cocoa nibs would be most intolerable. Anything more nasty they could not conceive. They might just as well drink mud. He told defendant he had made a most incompetent defence. The Admiral, who got red in the face, finally banged "Stone's Manual" on the desk and said, "Go! There's an end of the case." Defendant went, and, as he disappeared, the Admiral cautioned him not to plead guilty again.

From that view the Hants County Council rightly dissented, and, as Admiral Field refused to state a case, appealed to the High Court. Admiral Field appeared in person, and, to support his attitude, made the following statements:—"He (Admiral Field) knew pure ground cocoa to be most unpalatable, and that the cocoa of commerce was universally known to be compounded of different ingredients to make it a marketable commodity. A question of the condition of the cocoa could not come before a more competent tribunal than naval officers. They were experts in cocoa. It was part of their food, and 60,000 or 70,000 men in the Navy had cocoa every day; therefore he brought plenty of knowledge to bear upon this case, and was able to arrive at a proper decision in it. He held in his hand a piece of cocoa such as was served out to men in the Navy during the morning watch; 20 per cent. of that cocoa was sugar. The cocoa served out to the middle watch consisted of 25 per cent. of sugar, 25 per cent. of sago flour, and only 50 per cent. of cocoa. If the grocer in this case deserved to be punished, then he said the First Lord of the Admiralty deserved to be impeached." (Laughter.)

Upon the question of impeaching the First Lord of the Admiralty and of the expert knowledge of naval officers upon cocoa, or, for the matter of that, upon any scientific question, we have reason to differ from Admiral Field, and as those reasons deal with an enormous waste of public money and danger to the health

of our sailors, we here briefly state one of them. Some one at the Admiralty is responsible for the supply of filters to the navy. The recent experiments of Drs. Sims-Woodhead and Cartwright-Wood showed, as we pointed out a fortnight ago, that the scientific and expert advisers who are responsible for the filters in use by the navy supply poor Jack with an article that forms a culture-bed for any disease organism water may contain, and, instead of purifying water, actually contaminates it. Filters largely in use in the navy passed into the filtered water 5,000 to 6,000 typhoid germs from original infections of 20,000. We cannot, therefore, share Admiral Field's opinion of the scientific experts responsible for the health, etc., of our navy. As to the naval experts' knowledge of cocoa, Admiral Field's definition of that article is on a par with that of the student who described a lobster as a red reptile that walked backwards. The definition, said the examining professor, was faulty only in the facts that a lobster was not red, was not a reptile, and did not walk backwards. So with the Admiral's cocoa, but it was good enough for Mr. Justice Wills, who knew no better than to utter the following in his judgment:—"Technically, perhaps, the magistrates should have heard evidence to show, what appeared to be known to them, that the ingredients mixed with this cocoa were not injurious to health, and were really necessary to make a comfortable and useful drink. But they found that there was no intention to defraud, and they had a discretionary power vested in them by a Summary Jurisdiction Act, which they had exercised here, and which he would be no party to interfering with."

Mr. Justice Lawrence concurred.

Now it is precisely on account of judicial want of knowledge similar to that shown in Mr. Justice Wills' remarks that we have had decisions that baking powder is not an article of food, and that the microscopic in-labelling when applied to articles of food is a holy and wholesome thing, and that the publican who sells an extra ten or twenty per cent. of water at whisky price is a manly, honest fellow so long as he exhibits in any part of his bar a notice that "all spirits are diluted." With all the respect Mr. Justice Wills is entitled to, we are bound to express our surprise at his assertion that "the ingredients mixed with this cocoa were really necessary to make a comfortable and useful drink." It is well known that the contrary is the case, and it speaks little for Mr. Justice Wills' knowledge that he should make such a statement. Mr. Alfred H. Allen, in his article on "Cocoa in Commercial Organic Analysis," says:—

"The term 'cocoa' is sometimes misapplied to mixtures of real cocoa with sugar, etc. The practice is highly objectionable, and has led to much confusion.

"In addition to the mechanical difficulty of manipulating undiluted cocoa containing all its natural fat, it is stated, with some probability, that the excessive proportion of fat renders the cocoa difficult of digestion. Hence, the removal of a portion of the fat, and consequent concentration of the non-fatty constituents of the cocoa, appears to be distinctly advantageous."

It is so frequently alleged by makers of spurious cocoas that the addition of sugar, starch, etc., is necessary, that we supplement Mr. Allen's conclusions by those of Dr. John Muter, F.R.S.E. Dr. Muter says:

"The only objection which can and does exist to the use of cocoa in a state of purity is the excessive proportion of fat, which renders it too rich for most digestions, and gives, unfortunately, a colourable excuse for its admixture with starch. There are two classes of prepared cocoa: (1) That in which the reduction of the fat is secured by adding starch and sugar; and (2) that where the fat is partially removed and the remainder of the bean is served to the public unmixed.

"On looking at the composition of cocoa, the great fallacy of countenancing the addition of starch is at once apparent. The only possible excuse is the dilution of the fat, but then, at the same time, the nutritious

gluten and stimulating theobromine are equally reduced in value. On the other hand, given the removal of a portion of the fat, the other constituents are not only kept intact, but positively concentrated in a high degree."

As to Admiral Field's and Mr. Justice Wills' statements that starch is necessary, the above proves that the M.P. and the Judge did not know what they were talking about.

The following results, among many others, were obtained by E. E. Ewell (*Bulletin* No. 13, U.S. Department of Agriculture) by the analysis of well-known brands of commercial cocoa and its preparations:—

Description of Sample.	Husk.	Fat.	Fibrine.	Cane Sugar.	Reducing Sugar.	Ash.		Ad led Starch.
						Total.	Acid equivalent.	
Fry's Cocoa Extract	1	30.95	3.89	..	..	4.24	5.8	None.
Schweitzer's Cocoonina	..	31.13	3.70	..	..	6.33	0.4	None.
Van Houten's Cocoa ..	1	29.81	4.38	..	..	8.64	16.05	None.
Blooker's Dutch Cocoa ..	0	31.48	3.76	..	..	6.06	9.6	None.
Rowntree's Extract of Cocoa ..	2	27.56	4.42	..	..	8.48	16.6	None.
Rowntree's Powdered Chocolate	2	25.84	1.30	51	none	1.66	2.25	Very small amount of arrowroot.
Epps' Prepared Cocoa ..	2	25.94	1.51	26	none	3.15	2.6	Much arrowroot.
Fry's Diamond Sweet Chocolate	2	18.60	8.1	55	some	1.16	1.45	Much wheat starch, with some arrowroot.
London Cocoa (unknown maker)...	3	11.13	2.13	32	some	2.82	3.9	Very largely diluted with arrowroot.
Chocolate - Menier	0	21.31	1.10	53	none	1.40	2.05	None.

These analyses show several cocoas sold to the public containing no starch.

We might usefully devote a little more space to Mr. Justice Wills on cocoa, but we know from experience that his Lordship does not like our remarks upon such questions; and, as our last little difference with him upon the matter of vinegar cost us some £75, with an expression from the judicial luminary of intense regret that he had not been asked to consign us to durance vile for contempt of court, we will leave the cocoa question to the opinion of our readers. The law happily, however, cannot prevent our thinking what we please.

DRUG ADULTERATIONS.

GROUND cassia has been found by Mr. Keating Stock, the Durham County analyst, in two recent cases to contain foreign vegetable matter to the extent respectively of 30 per cent. and 5 per cent. It was spent (or exhausted) ginger in one case. He analysed eleven specimens of ground ginger, and two were found to contain practically one-third of their bulk of spent ginger. This particular fraud will doubtless continue so long as the warranty clause affords convenient shelter to the retail trader. The question of the adulteration of genuine ginger with "spent" ginger, Mr. Keating Stock says:—"Has recently been ingeniously complicated for the minds of magistrates by the statement, freely circulated, that Japan ginger when blended with other growths lowers their quality and gives the mixture the appearance and quality of a partially spent article. I have had occasion to examine this statement critically, and find it devoid of truth. The fact is that the composition of genuine Japan ginger does not even

approximate to that of spent ginger. I find also that Japan ginger possesses certain peculiar properties which distinguish it from any other growth I have examined, and render its detection when known, a matter of comparative ease."

He points out the need for a new and revised list of articles which come under the purview of the Act; and to the need for placing before the Select Committee on Adulteration, as soon as opportunity offers, the eminent desirability of bracketing every article in the British Pharmacopoeia with its familiar synonyms.

THE CHAIRMAN OF THE BENCH AND THE TRURO ANALYST.

It is not a satisfactory state of things that a prosecution should take place upon the alleged presence of so much as 20 per cent. of foreign fat in butter, which the public analyst of another town declares genuine, *i.e.*, free from foreign fats. Such, however, was the case at Truro on February 11, when John Basset, of Kea, was summoned on adjournment for selling adulterated butter in the market. Mr. J. P. Paull defended. At the first hearing Dr. Bernard Dyer, the city analyst, certified that the butter contained 20 per cent. of foreign fat, and the defence put in the certificate of Dr. Bean, of Plymouth, stating that it came within the definition of genuine butter of several authorities. In view of this conflict, the Bench directed the remaining sample to be sent to the Government Laboratory, Somerset House, for analysis. This was done, and the certificate signed by R. Bannister and G. Lewin, stated—“(1) That the butter affords evidence of having been unskillfully made, and that on account of the milk not having been sufficiently washed out of the butter, and its containing less than one-half per cent. of salt, the sample had become rancid, and showed on analysis over 6 per cent. of free acid, estimated as palmitic acid. (2) That from a consideration of all the analytical results obtained we are of opinion that the butter does not afford evidence of the addition of foreign fat.” The magistrates dismissed the case, and allowed £1 1s. towards the defendant's expenses. They expressed the view that the authorities were perfectly justified in prosecuting, and were sorry that the analysis of the city analyst should have turned out faulty. The chairman thought this should be represented to Dr. Dyer.

THE CITY ANALYST.

The Contagious Diseases (Animals) Committee reported:—

The committee had considered the three analysts' certificates in the case of Basset. (1.) Dr. Bernard Dyer, city analyst, “That butter contained 20 per cent of fat foreign to butter.” (2.) Mr. Charles E. Bean, Plymouth, “Low result, but still within limits of genuine butter.” (3.) Government Laboratory, “Butter did not afford evidence of the addition of foreign fat,” and recommended that Dr. Bernard Dyer be furnished with copies of the certificates and asked for an explanation.

Mr. Hearn, chairman of the committee, remarked that the case was most unsatisfactory and discouraging to the committee, who had endeavoured to do its duty to the satisfaction of the ratepayers and honest tradesmen. The result was to bring the authority and the committee into contempt and derision. The Mayor said they were grateful to the committee for the good work it had done. The matter was adjourned till the next meeting for the reply from Dr. Bernard Dyer.

46.4 PER CENT. OF CAMBERWELL MILK FOUND ADULTERATED.

DR. FRANK L. TEED, public analyst, Camberwell, reports that of 28 samples of milk taken in the last quarter 13 were adulterated, or 46.4 per cent. The general percentage of adulterated articles was 24.2.

The vestry agreed in instructing a committee to consider the matter, with a view to securing the purity and wholesomeness of Camberwell's milk supply.

BEESWAX WITH 60 PER CENT. OF PARAFFIN IS PROTECTED BY THE WARRANTY.

If you are a retail trader you can sell any adulterated article you choose for genuine provided you take the precaution to ask the manufacturer or wholesale gentleman from whom you purchase it to give you an invoice stating that it is pure. The purchaser who is injured by the substitution of an adulterated article for a pure one is supposed, by some sort of Gilbertian topsy-turveydom, to suffer no injury so long as he buys as genuine an adulterated article from a dealer who can sport a warranty, and the local authority who may be prosecuting never, or hardly ever, prosecutes the warranty giver. The game would not be worth the candle, for he may live hundreds of miles away, or even abroad. The following is another object lesson in the warranty, and shows how some of our actions do not differ so greatly from those of Swift's Laputa philosophers as to be very far removed from the height of folly:—

At Bristol, on February 14, Mr. George Stevens, of Old Market-street, on an information charging him with selling to Thomas Thomson, an inspector under the Food and Drugs Act, a pound of beeswax containing 60 per cent. of paraffin, was resumed. An adjournment had been granted from January 29, in order that a sample of the beeswax might be forwarded to Somerset House for an independent analysis. Mr. Cross appeared for the defendant. Mr. Braithwaite (assistant clerk) said the certificate of the analyst at Somerset House was to the effect that the sample of beeswax submitted contained not less than 60 per cent. of a mineral known as ceresin. Mr. Cross addressed the bench on behalf of the defendant, and urged, first, that beeswax was not a drug, and was only used medicinally when mixed with other substances. He then contended that his client was protected by a warranty from Messrs. Warren, of Redcliff-street, from whom he bought the beeswax, and they in turn purchased of a wholesale house in London. The defendant and Mr. Warren were examined, and the former said he purchased the wax as pure, and paid 1s. 9d. per lb.; there was common wax, which was sold cheaper. Mr. Warren said he sold the wax as he received it from Messrs. Horner and Sons, of Mitre-square, London. The magistrates retired for a quarter of an hour, and then Mr. Sparke Evans announced their decision, that they were of opinion that defendant was entitled to the protection of Section 25 of the Act, having purchased with a written warranty, without discussing whether beeswax was a drug or not—that was not for them to say on the present occasion. As at present advised, they were of opinion that it was a drug. They would like to bear testimony to the excellent manner in which the business was conducted by Mr. Warren. It had been carried on admirably by father and son, and for half a century was favourably known in the city for the admirable way in which the firm could be depended upon for their articles. The case was dismissed, the defendant having to pay for the analysis made at Somerset House.

What we do not understand is this eulogy by the bench of Messrs. Warren, who we notice later in the local press eulogised the London firm in Mitre-square. It seems a getting away from the point that 60 per cent. of paraffin or ceresin was sold as beeswax, which it unquestionably was not. But the only thing we have ever been able to discover about the Bristol magistrates is that they are consistent followers of that apostle of self-satisfied-middle-class-manufacturing priggism, Mr. John Bright, and believed, as he said, “adulteration to be a form of competition which should not be interfered with.”

PROFESSOR HUNTER AND THE ADULTERATION OF MANURES.

ADDRESSING the Fife Farmers' Club last week, Professor Hunter said the most perfect of all manure was farm-yard manure. It was a great sponge that held the water. That was where the microbes were multiplying and getting their food and drink. If they were buying dissolved bones, they should get a guarantee that they should consist of bone and acid and nothing else. If it was not right, send it to the Procurator-Fiscal. (Applause.) Farmers in Fife were not taking advantage of the Food and Drugs Act to the extent they should do. (Hear and applause) He was not going to spare the cake men. Some of them were very good, and some of them very bad. (Laughter.) Regarding Fife manures he was not going to mention any names; but it was notorious that manures were selling in Fife at three times the actual value. It was not only that the constituents they expected were absent; they had 75 per cent. of useless stuff, and their work and rent was lost because some villain had deprived them of about 75 per cent. of their manures. Their crop was starved, and they were losing their work to that extent. He strongly urged them to take advantage of analysing their manures, as they had every facility by Act of Parliament.

MILK AND DISEASE.

THE serious outbreaks of scarlet fever at Hornsey and Islington, traced to infected milk from Derbyshire, show that whilst a great amount of energy is devoted to preventing the adulteration of milk, very little is done to prevent its infection by disease-germs. The sharp and severe lesson learnt in North London will not be without benefit to the public if it leads to a wider recognition of the truth that the best expended of any money is that paid for sanitary work. There are unfortunately few firms supplying milk to the metropolis who cause, as the Aylesbury Dairy Company do, regular inspections to be made by sanitary experts of all farms from which they draw their milk supplies. The bulk of the milk consumed by the public in our cities and large towns is under practically no sanitary control, hence Derbyshire can send scarlet fever into North London by infected milk. Residents in Hornsey and Islington suffer disease and monetary loss and are the victims of sanitary backsliding in Derbyshire districts that refuse to conform to sanitary requirements. Curiously enough, this question of the need for inspecting milk for disease germs has just been brought forward by Henry Leffmann, M.D., microscopist and food-inspector, Pennsylvania State Board of Agriculture, who says: "No topic in sanitary science has received greater and more careful attention in the past twenty years than the analysis of water and milk, and few topics have exhibited greater transformations as to the principles on which judgments as to sanitary value may be based. The extension of bacteriology has enabled us to identify the causes of disease and to demonstrate in many cases the methods of propagation.

"In water-analysis we can still rely with much confidence on the merely analytic results, though we recognise that the figures for chlorine, ammonia, and so on, are merely indexes of pollution, and not injurious in themselves. In milk-analysis, we have first been obliged to correct our analytic methods, and, lately, to revise materially our views as to the manner in which milk affects the public health.

"In the judgment of the results of a water-analysis, chemists have never been misled into attaching undue importance to the proportion of dissolved matters; but in judging of the results of milk-analysis this error has long been made, and is still being made by sanitary officers. Thus, in the early days of the agitation of the question of milk-inspection in Pennsylvania, reference was not infrequently made to the high rate of infant-mortality, and this was ascribed to the reduction of the strength of the milk-food by dilution and skimming.

"At the present day we are in possession of a much wider and more exact knowledge as to the manner of the distribution of disease by milk. We now know that serious dangers arise from the contamination of the milk by microbes, and that such dangers fall practically into two classes.

"The first class is that due to contamination of milk by specific micro-organisms from disease, either among the milk-yielding animals or among the persons about the farm. I do not think that it will be necessary to discuss these questions in much detail, for all are pretty familiar with the subject. Possibly, some may not fully appreciate the extent to which specific disease in dairy-cows exists, and to which it infects human beings; but I frankly say that I am a convert to the view that the production of cows' milk for human food, under the present methods of collection and use, is one of the most dangerous of human industries. As an illustration of the extent to which tuberculosis may exist in herds. I take the following articles from the *Medical Record* of January 6th, 1894.

"Probably few physicians are aware of the enormous practical value in the animal industry of tuberculin, that is to say, if the position taken by the New York and other State Boards of Health regarding it is correct. A gentleman who has a valuable herd of thoroughbred cows writes us that twice within the last six months his herd has been examined by competent veterinarians and pronounced healthy. A third examination, however, with the aid of tuberculin, caused a condemnation of over one-half of the herd. He adds:

"The New York State Board of Health is killing by the hundreds animals condemned by diagnosis with tuberculin, and the State is paying full value for them. The veterinarian says that the autopsy shows the diagnosis to be correct in every case.' He says, also, that it is impossible for the best veterinarian to discover tuberculosis by physical examination except in extreme cases. 'My herd is apparently in splendid condition. Breeders do not know of its existence in their herds. They let a cow remain in the herd until she is unquestionably tuberculous, and then remove her, but she has then already infected the herd. A temperature of 103° F. condemns the cow.' In a herd of Jerseys, at Troy, of 80 head, he has killed 33, and will kill 20 more of them this week. Autopsies are held in the presence of physicians and veterinarians. There have been 15,000 tests with tuberculin in England. New York evidently believes in this kind of diagnosis, and will probably have to pay 500,000 dollars to eradicate tuberculosis. The veterinarian says the State is full of it, in herds of thoroughbreds and common cows.

"We understand from other sources that the State Board of Health fully believes in the certainty of the tuberculin diagnosis. Through its means it has been discovered that some of the best-bred herds, supplying high priced milk, cream, and butter are infected.'

"It is apparent from this article, which is merely one of many similar statements, that we have not fully realised the relations of milk to the prevalence of the disease which is known to be the cause of one-seventh of the total deaths in civilized countries, and is the unsuspected cause of many more.

"It is, however, not only disease in the cow which may be conveyed. The conditions of farm-life are such that milk often conveys virulent, infectious diseases from the dairyman's family to his customers. Here, again, the literature is so abundant, and the facts are so generally known, that I need not stop to detail them. Those who are interested in this phase of the question will find some valuable and recent data in the report of the State Board of Health of Massachusetts. Several epidemics of typhoid fever were traced to milk supplied from a farm on which a case of this disease existed.

"We find, however, that even when milk is taken from cattle entirely healthy, and on farms in which no specific disease exists, it may become a most dangerous article of food. This is due to the decompositions which are induced in it by bacteria. Milk is a close approach to a perfect food. It is not an absolutely perfect food for human beings, because it is deficient in iron; but it serves admirably as a medium for the growth of bacteria, many species of which produce remarkable changes in the casein, by which highly poisonous compounds are set free. Now, under the ordinary methods of milking, infection with multitudes of the common bacteria of the air, water, and even soil is certain to occur. That milk usually contains these is proved by the deposits obtained in centrifugal swimming, which show, under microscopic examination, many repulsive materials. When milk as ordinarily furnished is kept at summer temperature, the bacteria increase with great rapidity, and it is now recognized that a proportion of the infant-mortality in the warmer season is caused by this condition. In fact, the information at present in our possession shows that, unless collected under extreme precaution, raw milk, at least cow's milk, is not a suitable food for human beings. Hence the general practice of sterilization, which has resulted so favourably in the feeding of infants. Statistics have been recently published which show that death from tuberculosis occurs in large proportion in infants, the action being due to the entrance of the tubercle bacillus into the lacteals, thus preventing the absorption of the food and causing death by starvation.

"I have endeavoured so far to indicate briefly, but I hope distinctly, the idea that sanitary control of milk-supply may have little to do with the mere question of the chemico composition of milk. It is of very little moment to the consumer, except on a question of cost, whether milk contains 12, 13, or 14 per cent. of solids. The claim that milk watered or skimmed is unwholesome rests on no positive information, and, within certain limits of variation, the regulation of the composition of milk is no more a matter of sanitary duty than the regulation of the proportion of fat and lean in the meat sold in our markets, or the proportion of alcohol and extract in beer and ale. Nevertheless, economic considerations will doubtless lead to the establishment of some standard for milk, and it will be sufficient to fix the minimum, not the average. The time is passed when we can claim 9.50 solids not fat for a standard, and even 9.00 per cent. is unjust. In my opinion, there should not be fixed in any legal enactment a higher figure than 8.50 per cent. of solids not fat, and 3.00 per cent. fat for whole milk. Skimmed milk should be permitted to be sold as such, and should not be required to contain any fat; that is, anyone purchasing skimmed milk should assume that all the fat may have been removed. I have never been able to understand the logical process in the minds of those who desired to prohibit the sale of skimmed milk. However, when we remember that the same parties

last winter were trying to prevent the sale of skimmed milk, proposed also to prohibit the sale of condensed milk containing less than 25 per cent. of fat, which would exclude all the standard brands in the market, we can appreciate the impracticable views that may be advanced.

"It has been the custom of some persons to designate the skimmed milk from centrifugals as "separator slop," but I am unable to see that such an article is any more of the nature of a refuse than buttermilk, whey, or cheese.

"The standard of the Society of Public Analysts of England, an organisation which represents, I think, the highest judgment and experience on the question, is 8.50 solids not fat, and 3.00 of fat. Concerning this standard, Dr. Vieth, a dairy-chemist of large experience, recently expressed himself as follows:

"My object is by no means to raise the cry that the standard adopted by the society is too high; on the contrary, I think it is very judiciously fixed, but in upholding the standard of purity it should not be forgotten that the cows have never been asked for, nor given their assent to it, and that they will at times produce milk below standard. A bad season for hay-making is, in my experience, almost invariably followed by a particularly low depression in the quality of milk, toward the end of winter. Should the winter be of unusual severity and length, the depression will be still more marked. Long spells of cold and wet, as well as of heat and drought, during the time when cows are kept on pasture, also unfavorably influence the quality, and, I may add, quantity of milk."

"Much discussion has been given to the effects of special forms of food and their relation to the wholesomeness of milk. Legislation promoted by health-boards often involves prohibition of the use of brewers' grains or distilling refuse. In regard to these matters, I desire to transcribe two personal letters received from Dr. Vieth, whom I have just quoted:—

"The reason that I have not acknowledged and answered your favour of August 21 ere this is, that I desired to give you as much information as possible on the subject of the effect of brewers' grains and similar refuse on the wholesomeness of milk.

"I suppose it is about the same in your country as it is in ours, viz.: that people are not slow in passing an opinion on the matter in question either one way or the other; but, when one sets to work to follow the matter up, one finds these opinions not substantiated by facts. I was, when I received your letter, not aware of any publication on the matter in question, and have since taken much trouble to find one or collect information worthy to be transmitted to you. I am sorry to say that I have failed in my endeavours almost entirely. Hunting through the literature, I have found brewers' grains barely mentioned in connection with the question of the wholesomeness of milk—and have got the impression that no one thinks of expecting any bad effect from the use of that food. Here the question turns almost entirely about the advisability of distillery-wash as food for milk cows. This food has a good many adversaries, but, it seems, even more defenders. It is generally admitted that, when fed in moderate quantities and in a fresh state, and other food given besides, it will do no harm. When given in large quantities—say from fifteen to twenty gallons per day—it certainly produces a very poor milk, which is said to have a bad effect on infants. This is most likely true, but I have failed to find it proved by experiments or exact observations. The best observations on the subject I have come across, are made by Professor König, and are contained in a paper which has been published in *Repertorium für Analytische Chemie*, 1881. They are also based on theoretic speculation, and not on actual experiments. Before leaving the subject I should like to mention that there is most likely a considerable difference between brewers' grains from ale and from lager beer breweries.

"When your card of the 21st ult. arrived I had just come into possession of some more evidence with regard to feeding milk-cows with distillery wash; that is, the refuse from the manufacture of potato spirit. Professors König, of Munster, and Maercker, of Halle, are two eminent authorities on the subject of cattle-feeding. The former is of opinion that there is no objection to giving to cows from forty to fifty liters of fresh distillery-wash per diem, provided other suitable food is given in addition. He would rather not have the distillery-wash used in a sour condition, and objects to feeding children with milk from cows which have received it. (In the prohibition of the use of distillery-wash he would see a serious injury; but it should be demanded by law that milk thus produced should all be sold in the sterilized condition.) All the objections would be overcome by the use of distillery-wash in the dried state.

"Prof. Maercker writes that the supposition that the milk from distillery-wash fed cows is injurious to health is in no way supported. The distillery-wash is completely sterilised in its manufacture, which is not the case with any other food. If milk from distillery-wash fed cows has caused illness, the fault is that proper care had not been taken to keep the cowsheds, and more particularly the mangers, clean. Under such conditions, any food might produce similar ill-effects.

"Ohlsen and Uffelmann, of Rostock, have made an investigation into the matter and published the results in the *Jahrbuch für Kinderheilkunde*, 34, vol. 1. The results are, in short, as follows:—

"The milk from cows fed with distillery-wash is of neutral, sometimes alkaline reaction. Acidity did not set in before the lapse of forty-eight hours. Provided suitable food be given in addition, the milk does not appear unsuitable for feeding infants. There is no proof that the milk produces indigestion or rachitis

with infants. Microscopic and bacteriologic examination did not prove any difference from other milk.

"The work of Ohlsen and Uffelmann is the first evidence on the subject, founded on exact observation, which has come to my knowledge, and as I thought it might be useful to you I wish to draw your attention to it without delay."

"It appears, then, that the danger from milk, as far as the dairyman is concerned, is the introduction of specific germs through diseased cattle; and it is worthy of note that the liability to such disease is as great, if not greater, in cattle yielding rich milk than in those yielding poor milk. One of the reasons that sanitary officers have sometimes given for asking that the legal limits of milk shall be fixed above the average is that it will tend to 'improve the quality of the dairy-cattle' supplying the city. Independently of the fact that it is no part of the sanitary method to develop superior types, it seems that such stimulations will lead to the worst conditions. Questions of chemie composition are trifling in proportion to the matter of the prevention of the spread of specific disease."

Two deaths have resulted from a remarkable epidemic of typhoid which is raging in Great Harwood, near Blackburn. There are nearly a hundred cases, and Dr. Sergeant, the Medical Officer for Lancashire, attributes the outbreak to the contamination of the milk supply by sewer gas. A disused drain was discovered on the premises of a dairy supplying the district with milk, and a female servant who assisted in milking the cows was found suffering from feverish symptoms. In the face of facts like these, who can deny the urgent need for more inspectors in dairying districts?

ADULTERATED OATMEAL.

At Kensington Petty Sessions, a summons, taken out at the instance of the Kensington Vestry, against Messrs. Edwards, oilmen, 136, Walmer-road, was heard. Mr. W. Chambers Leete, who appeared for the vestry, said the sample purchased by the inspector had been certified to contain 10 per cent. of starchy matter. From a letter he had received from the defendants, it appeared that they admitted the offence, and cast the blame on the wholesale dealer. There was, however, a good deal of this adulterated oatmeal in the market, and the vestry thought it only doing its duty in giving publicity to the facts. Arthur Ellenden, an inspector under the Sale of Food and Drugs Act, proved the purchase of the sample, for which he paid the full price, 2½d. per lb. The defendant said his firm sold the article exactly as they received it, and he had the man present who, on selling the article, took it from a bag. He had written to the wholesale man, who declined to appear. They had several businesses, and had had numerous other articles taken without a single complaint. This the inspector admitted. The Chairman: Have you a warranty?—No, but we will take care to have one in the future. The Chairman: You are glad these proceedings have been undertaken?—We are not sorry; we court every publicity. Who is your wholesale firm?—Messrs. Thomas C. W. Russell and Co., 104, Bernard-street, London. It should be known. The Chairman: Fined 2½s. and costs.

ADMIRAL FIELD'S OPINION DOES NOT INFLUENCE MR. DE RUTZEN.

At Westminster, on February 18th, a prosecution of some interest to grocers and others was heard before Mr. de Rutzen, a shopkeeper, named David Jones, in business at 20, Dorset-street, Westminster, being summoned by the Westminster Vestry, for selling adulterated cocoa. Mr. Warrington Rogers appeared for the parish, and Mr. J. D. Langton defended. The inspector's agent asked for ½lb. of cocoa at 1s. a pound, and was served with a compound containing nearly 50 per cent. of starch and sugar. Mr. Langton elicited that, though attention was not called to the fact at the time of purchase, the box from which the sample was taken was labelled "chocolate powder." Mr. Langton asked the witness whether he wanted cocoa as an article of food. Witness said he did. Mr. Langton: Are you aware that cocoa in its original state contains 50 per cent. of fat, and that it is impossible to use it with water?—Witness said he knew that manufactured cocoa had a proportion of its fat removed. Mr. Langton said it was decided the other day in the Court of Queen's Bench that a cocoa preparation might be sold as cocoa. If they accepted 80 per cent. of starch and sugar in the Navy, he did not see why a small trader should be fined. John Chapman, manager to Colliers', the manufacturers supplying the defendant, said cocoa in its natural state was not sold as an article of food. Sugar and sago were usually added. Mr. de Rutzen: There is such a thing as pure cocoa?—Witness: Yes. Mr. de Rutzen: Although yours is a good deal better in your opinion? (Laughter).—Witness: Yes. Mr. de Rutzen: There will only be a fine of 10s., and 14s. 6d. costs.

MESSRS. R. AND N. POTT, 68, Sumner-street, Southwark, have been appointed sole contractors for the supply of Vinegar to the Empire of India Exhibition, to be held at Earl's Court during this year.

THE CHESHIRE COUNTY ANALYST ON SOMERSET HOUSE.—CHEMISTS' ADULTERATION.—ENCOURAGING METHODS.

MR. CARTER BELL says, in a report just issued to the Cheshire County Council:—"The percentage of adulterated samples is rather higher than what has been found in previous quarters. The ten butters were adulterated with foreign fat from 50 to 90 per cent., about six samples of butter were just over the border line of adulteration, and, if a first-class standard had been taken, they would have been returned as adulterated. But Somerset House authorities would have reported upon these samples in something like the following words: 'The results of a full analysis of the fat show that the butter practically falls within the limits of the poorest quality of genuine butter met with in commerce.' Under these circumstances, and seeing what a very low standard is taken, I preferred to pass these very suspicious samples as pure. The percentage of adulterated milk is very much higher than usual; this may be accounted for by many of the samples being bought on Sunday; the amount of water added for the purposes of adulteration ranged very high, one sample containing as much as 40 per cent., another 30, 20, and so on, down to 5 per cent.; in these lesser cases cream had also been abstracted. The four vinegars were not made from malt or any other kind of grain, but were simply manufactured by mixing ordinary acetic acid with water, and colouring it with caramel; this allows a very large profit to the vendor, for one gallon of this artificial vinegar can be made for less than twopence, and then if it is sold for one shilling and sixpence a gallon, which is the average price of malt vinegar, it leaves a very respectable profit for all concerned in the manufacture."

"BACILLUS NO. 41."

IS THE NAME GIVEN TO A NEWLY-DISCOVERED CULTURE FOR IMPROVING BUTTER.

We have heretofore noted the experiments being conducted by Prof. H. C. Conn in the direction of discovering and cultivating the right bacteria for improving the flavour of butter. He has been at this work during the past two years, and his experiments have recently been made in the production of creamery butter. As a result of these trials, it is now stated that Prof. Conn has discovered a species of bacterium, to which he has given the insignificant name of "Bacillus No. 41," and which has given the most promising results, as an organism for the artificial ripening of cream in butter making.

These experiments, as carried on by him, were thoroughly satisfactory, and were made in the following manner:—One half a pint of milk was sterilized, by incessant steaming, during a period of three or four days. Then this bacillus No. 41, which had been cultivated in the bacteriological laboratory of Wesleyan University, was inoculated into the milk, and for two days was allowed to develop. The large creamery at Cromwell, Conn., was then visited, and six to eight quarts of cream were put into a metal vessel and "pasteurized." The cream was then heated to 158 deg. Fahr., and left for ten minutes. The vessel was removed and cooled quickly by means of cold water, and when the temperature had dropped to 80 deg. bacillus No. 41 was poured in and the mixture stirred thoroughly. The vessel was then covered and put into the ripening room. After a couple of days the cream was churned, and the butter milk remaining was set aside for future use. These six quarts were ripened for the purpose of increasing the number of bacteria, and securing a strong culture for use in the large cream vat of the creamery. The butter milk was then inoculated into the day's cream supply, and this cream allowed to ripen in regular time, at a warm temperature, and churned as usual. Before churning, a quantity was set aside to use for inoculation in the next day's supply, and in this manner continued indefinitely.

The effect was always uniform. The first six quarts of cream produced moderately good butter, but not quite of the flavor wanted. The first large churning was a trifle better, and each day's product was an improvement. A delicate flavour also developed, which seemed to deteriorate after two or three weeks. This deterioration was remedied by a fresh inoculation from the laboratory. Two vats of cream, from which June butter was made, were taken. One quantity was inoculated, and the other was not. The butter produced by each was of high quality; but that which had been inoculated with bacillus No. 41 had an aroma stronger and more pleasant than that without. It was also superior both in taste and odour. One lot was sent to a Mr. Beck, in Massachusetts, who makes the highest grade of butter, and who commands a very high price in the Boston market. Mr. Beck used the culture and reported a decided improvement. It is the purpose of Prof. Conn to introduce this inoculation process in all the large creameries in the United States within the next year.

WEIGHTS AND MEASURES.

ON the motion of Sir Albert Rollit, in the House of Commons, a Select Committee, consisting of seventeen members, was appointed to inquire whether any, and what, changes in the present system of weights and measures should be adopted.

PRESERVING FRUIT WITH LIME.

MORE or less attention has been paid for some years past to the subject of the preservation of fruits and roots by means of powdered quicklime. An interesting communication (says *Le Génie Civil*) has recently been made by Mr. Monclar to the Agricultural Society of Albi on the subject of the results of his experiments in this direction. He exhibited, in support of his assertions, some Chasselas grapes, which were perfectly preserved, and were as round and plump as on the day they were gathered. The taste also was the same, except, perhaps, it was a little more saccharine. Unfortunately, despite the fact that they had been washed, some traces of lime remained upon a few of the berries. They had remained embedded in the lime for seven months. Mr. Monclar stated that after they had remained only four or five months therein, a washing caused the whole of the lime to disappear. He added that his grapes had been perfectly preserved during the entire winter in two different years. About the middle of March, only a tenth was spoiled, and a month later about half of them. In order to have perfect success, it would be prudent not to put off the consumption of the fruit beyond the beginning of March. M. Monclar also exhibited some apples that had been preserved in the same way for a long time, and that were found to be in a perfect state.

CO-OPERATIVE SPENT GINGER AND CASSIA FRAUD

AT the Castle Eden Petty Sessions on February 16, Joseph Harker, manager of the Station Town Co-operative Store, was fined £5 and costs for selling as pure ginger that from which all the strength had been extracted.—Mr. Stock, of Darlington, county analyst, described it as the worst sample he had had. In a second case of selling cassia containing extraneous matter, the Bench thought it not so flagrant, and fined defendant 10s. and costs. The Bench remarked that stores selling to working men were expected to have goods above reproach.

MERCHANDISE MARKS AND AGRICULTURAL PRODUCE.

In answer to Sir H. Maxwell, in the House of Commons, last week, Mr. Gardner said:—Since the hon. baronet last interrogated me on this subject the Merchandise Marks (Prosecutions) Act, 1894, has become law. From the representations made to me it appeared doubtful whether the provisions of that Act were fully known to those concerned, and I have accordingly issued an explanatory circular on the subject to the various chambers of agriculture, agricultural societies, and farmers' clubs throughout Great Britain. I have certainly no wish that the Act should remain a dead letter so long as any legitimate ground for complaint on the part of home producers remains, and I will do my best to secure that any cases of fraudulent misrepresentation of the place of origin of agricultural produce which may be brought to my notice are dealt with as they deserve.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. FARMER'S EVIDENCE.

XXXIII.

(Continued from page 56.)

Yes, it is; but it is under the direction of the chief constable of the county?—Yes.—Does not your chief constable give instructions to take these samples of milk occasionally?—The whole of the administration of the Adulteration Acts in our county is under the General Purposes Committee of the County Council; I have not been on that Committee now for some two or three years, and I do not know what the exact practice in Wiltshire is in that respect.—Would it not be worth while for gentlemen like yourself on these county councils to ask questions, and to see that the chief constable instructs the inspectors to take more samples of milk in the towns?—Yes, I think it would be.—That would be one way of detecting fraud, would it not?—Yes.—Because we hear that in many counties the samples taken are totally inadequate to the number of shops and retailers in the county?—That is so.—But you would not advocate any further form of inspection, would you? For instance, have you heard that some people advocate travelling inspectors to test milk and butter?—A travelling inspector would not be open to be tampered with; it is very possible that he might get cases of fraud where a local man would not be able to do so.—You see that our difficulty is how in many cases to detect the frauds. You may say that you know that there is a good deal of fraud, but it is a very difficult for you to give evidence, or for anybody else to give evidence about it?—Yes.—Therefore, how is it to be suppressed?—I cannot say that; I have given that matter very great consideration, but I did think that it might be desirable to offer a reward to any person who would give information leading to conviction for adulteration.—Do you know much about the adulteration of cream in London?—No.—You do not supply cream?—No.—Who supplies the cream in London; there is a great deal of it consumed?—There is a great deal of it made in London.—Do you know how it is made?—By separators, made from the milk.—Is it not occasionally made from other substances as well?—I am afraid

that I cannot give any evidence on that point. I have thought so, when I have been eating it sometimes.—With regard to the feeding of your cows, would you give them grains if you could get them in the winter?—Not except under very exceptional circumstances; not unless I had no roots, for instance.—And if you had no roots and were badly off for hay, as a good many people were last year, and you gave your cows grains, would not that reduce the standard of milk considerably?—Then I should at once give them better food, to keep up the standard condition of my cows; if I gave them grains and nothing else, I should soon expect to get my cows ill.—In making contracts with dealers, is it a general thing to put a certain standard in the contract?—I do not think it is.—Then yours is an exceptional case?—I think the Aylesbury Dairy Company are more particular in that respect than any other company; some other companies do it, I know.—In delivering milk in great quantities under ordinary circumstances is there any great difficulty in keeping the milk up to the average quality, or does it vary according to hot weather or cold weather?—Milk varies, but there is no difficulty in keeping it up to the standard that I have mentioned at all.—To the standard in your contract?—Yes; as you see our lowest monthly average is 3.56 per cent. of fat, and there are only 16 churns from the 1st of January to the 30th of June, which would take in cold months and hot months, too, which we have dropped as low as the contract quality, that is 3.25 per cent.—When did your highest monthly average of 4.24 per cent. of fat take place; what month was it?—January.—Were you feeding very highly at that time, or what made the average go up so high?—I have not the year in which that occurred, but it is possible that the food just in that month may have been better; I mean the food produced on the farm. We may have been at a better lot of fodder, or a better hayrick.—Mr. Channing; How long would those cows have calved, on an average, after January?—On an average the cows, in January, would have calved perhaps from three to four months, say four months.—No longer than that?—No.—Mr. Jeffreys: May I ask you again what average do you propose, or would you suggest to make a standard. You have heard of other averages which have been suggested which are much lower than yours. What is the average which you would like to suggest to be the standard for testing milk?—If there is any standard at all, it should not be less than 3 per cent. of fat.—And of solids, not fat?—I would rather leave that to others. I know more about the standard of fat than I do of solids, not fat.—Then you think that in a general way you would like to test milk by the fat?—I should; from my point of view I should have no difficulty.—In your con-

tract you have only a contract for milk of a certain standard of fat?—No; we contract for a certain standard of solids, not fat, and the lowest that I have had has been 8.84 per cent.—Mr. Channing: Your contract being 8.75 per cent.—Yes; and we have been as high as 9.17 per cent. There is no occasion to be lower than 8.75 per cent.—As a matter of fact, there is much more uniformity in the analyses of non-fatty solids than there is in the analyses of fat, is there not?—Yes.—The range of variation is much smaller?—I find, as a farmer, that I need not trouble my head about solids, not fat; if I can keep up the fat, I have no difficulty about the other. That is practically how I work.—Mr. Jeffreys: Have you any other suggestion to make to the Committee as to legislation, in order to protect the public from fraud on account of this adulterated milk?—No, I do not think I have.—But you know, as a matter of fact, that milk is greatly adulterated?—Yes, and I think that steps should be taken to stop it as far as possible.—That is sometimes a difficult matter, is it not?—Yes, it is.—Sir Mark Stewart: Do you turn out your cows at all in the winter?—Only for a very short time.—Just to get a drink of water perhaps?—Yes, partly for that and partly that we may see whether they are at service for the bulls.—Do you give them water in the house?—Yes.—Mr. Frye: Do you know of any dealers who buy separated milk for the purpose of mixing it?—I know many dealers who buy separated milk, but when you say for the purpose of mixing it, it is not for me to say what it is bought for.—You said that you would prevent margarine being coloured. You know that butter also is coloured?—Yes.—Would you prevent that being coloured also?—Butter is not coloured for the purpose of being sold as a superior article; it is not coloured for the purpose of fraud. Margarine is churned and coloured for the purpose of selling it as something which it is not.—What effect would that have on the price of margarine, do you think?—I do not think it is a question how it affects the price; it is a question of fraud, whether you sell to people one thing when they think they are buying another. I should not put it on the question of how it would increase or diminish the price.—I suppose it would increase the price of butter?—I have not viewed it from that point at all. I make very little butter, and it is not a matter that concerns me.—There are mixtures of butter and margarine. You could not prevent them being of the natural colour; would you prevent their being mixed at all?—I think if a person wishes to have them mixed he might mix them himself.—How is that to be done, supposing that they wished to have a mixture?—I think it might be left to him to decide. If any person wished to use a mixture of butter and margarine, we might leave it to him to decide how he would mix them.

(To be continued.)

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Food and Sanitation.

SATURDAY, MARCH 2ND, 1895.

POISONOUS COLOURINGS IN FOOD: CHAOTIC LAW.

It would be difficult to find a better illustration of the chaotic nature of the law as regards adulteration than was afforded at Edmonton on February 21st. Three weeks ago, at Bristol, a bench of magistrates held that copper in peas did not constitute an offence under the Acts. We reported the case at some length in our

issue of the 16th February. It had been twice adjourned, and a string of experts, *pro* and *con*, had testified, with the result that the magistrates decided there was no offence, and dismissed the case. Upon the faith of that decision any grocer having a stock of tinned green peas would naturally assume that their sale was not contrary to the Adulteration Acts, but that assumption would just show that he did not know the beauties of the existing Acts. At Edmonton on February 21st, a case in every respect similar to that at Bristol was heard, and the persons summoned were fined 20s., with costs of twenty guineas. Let us briefly give the facts:—

Messrs. Kearley and Tonge, grocers, of 186, Fore-street, Edmonton, were summoned for selling a tin of green peas which were coloured or stained by aid of copper to the extent of 7-10ths of a grain of copper per pound, thereby rendering them injurious to health. Mr. A. H. Bodkin prosecuted for the Middlesex County Council, and Mr. Walter Beard defended. The evidence showed that the article was purchased on January 10, and an analysis proved it to contain 7-10ths of a grain of copper, which was equal to 2.75 grains of sulphate of copper. Dr. J. F. Sykes, medical officer for St. Pancras, Dr. Dupre, and Dr. Luff, analysts to the Home Office, stated that sulphate of copper was a poison, which, if taken into the system in the quantity found in the peas would produce chronic copper poisoning. The copper was used to make the peas retain their greenness, and the effects would be most injurious, especially to a weakly person. For the defence, Mr. Beard said that there were 16,000,000 tins of the peas imported annually, and yet there was not one known case where it was shown that they had produced any injurious effects. The article was sold by his clients in the ordinary course of trade, and if it was true that they were poisonous then it was essentially a State question, and their importation should be stopped. He quoted several cases to show that the Courts had held that the article was not injurious. After a hearing lasting over four hours, the Bench convicted the defendants, and inflicted a fine of 20s. and 20 guineas costs. Notice of appeal was given.

By these decisions, therefore, "adulteration" in the United Kingdom is a mere geographical expression. In Bristol copper in tinned peas is wholesome; at Edmonton it is poisonous. Now, we wish here to ask a serious and plain question—*Why should any wholesale or retail trader be made a shuttlecock of for something which the law holds is no offence in Bristol, but proclaims as an offence in Edmonton, with swinging penalties?*

Our opinions on the use of colourings in food, poisonous or otherwise, are not of to-day. They are well known to our readers, but are we to expect that every wholesale or retail trader is to be regarded as capable of judging if every tin of the 16,000,000 tins imported annually is free from minute doses of copper-colouring? Further, if the wholesale or retail dealer masters the 16,000,000, and knows that much, how is he to determine whether, if any contain copper, he offends against the Food and Drugs Act by selling such, in view of decisions at Glasgow, Bristol, Leeds, and Edmonton, totally at variance with each other? This brings us to the point we wish to establish, and which we hope this case will do much to force into its just prominence. The bulk of the articles coloured with poisonous substances are not of English manufacture. They are foreign, and have to come to this country through our Customs House.

English traders, we submit, cannot possibly know what that "darned mounseer" is up to, but our Customs officials can and ought to, yet the English trader is the scapegoat of whatever the foreigner does, for the all-potent reason that the French, German, or Italian *real culprit* is outside the jurisdiction of our courts, even supposing our police-courts knew what the law is—which, upon this question, they as yet do not. Now, what sort of a blind, halt, and lame Act must

this Act be, when absurdities like those we instance can be done under it? Just the sort of Act that requires speedy alteration.

In our issue of December 16, 1893, we suggested a remedy for this intolerable condition of things. Somerset House exists as a sort of court of reference, but in this question of poisonous colouring it has no opinion, and, if it had, its opinion would be of no value. One consequence of its scientific incapacity and disrepute is that, as regards what is or is not adulteration, as we pointed out fourteen months ago, one public analyst entertains one belief, another a different belief, and the manufacturer along with the retailer stand in the position of being shot at; no one can clearly say why, or with what justice. This is a sorry position for a reputed *scientific* Government department to occupy. It ought to be competent to state clearly what is or is not adulteration, but by its own showing it does not possess the knowledge to determine the question. It is high time manufacturers, merchants, dairymen, and retailers looked the facts squarely in the face, and that grocers' associations and like representative bodies demanded—

1st. That a competent court of reference for appeal cases should be established, consisting of Food Analysts of proved capacity.

2nd. That no appointment should be made to the position of Public Analyst, unless the person appointed has been thoroughly examined as to his capacity for such a post by the scientists composing the court of reference.

3rd. That persons unjustly prosecuted for adulteration shall have their full costs refunded, and the court of reference have the power to suspend temporarily or permanently, as may be deemed necessary, such Public Analysts from the exercise of their duties as are found, by inaccurate certificates, to have caused unjust prosecutions.

At present, a totally unfounded charge of dishonesty may be made against any dealer in foods, and however careless or incompetent be the person on whose certificate it is made, he is in nowise punished for what is a very cruel wrong, reflecting in the worst manner upon the honour of the person unjustly prosecuted. A really capable court of reference, composed of food analysts of known probity, and having a liberal allowance for scientific research, with the duties imposed upon it of fixing standards, and acquainting itself with new forms of fraud, would not only save the country a vast amount of money, but be a real protection to the manufacturer or vendor of pure food stuffs. It would also bring public analysis out of its present state of chaos, and gain it the confidence of traders. At present the study of processes for the better detection of fraud are left entirely to chance; and a working analyst, who has to live by his profession, cannot spare the time or the money for experiments that would bring to himself a scant monetary return. If we take butter as a case in point, the detection of large percentages of adulteration gives the analyst little trouble; *it is the small percentages of admixture of five or ten per cent. of foreign fats that baffles him.* Analytical science is not yet sufficiently advanced to enable him to declare with certainty to these small percentages, and the large butter factors know it. Yet, what does even a ten per cent. admixture of foreign fat in butter mean? It means an advantage of some 5s. per cwt. on the part of the foreigner practising this adulteration, that English and Irish butter-makers must do likewise, that we have to face the forcing out of our markets of genuine home-made butter, or reducing the price to this fraud-created standard—for every butter maker on the Continent knows full well that he can mix up to ten per cent. with impunity. If all imported butters were so treated, it would mean a fraud practised upon the public, last week, of some £10,000, or at the rate of £520,000 per year. We showed, a fortnight ago, how Londoners were swindled out of some £890,000 per

year by milk adulteration. Contrast with these—only a minute portion of the losses agriculturists and the public suffer by adulteration—the cost of a State-endowed department for analysis and scientific research. If such a department, consisting, say, of twenty capable scientists, cost the country £40,000 per year, the public would benefit by the suppression of adulteration to the extent of some millions of pounds annually, traders would not be harassed and unjustly prosecuted, *standards of purity of foods would be adopted*, and in place of our present condition of chaos, order would reign. It is a reform that should be pressed upon the Government, for it is in truth at the root of our national prosperity, and the facts we have given should furnish traders everywhere with food for thought.

Such a court of reference would, in the case of copper in peas, be competent to say whether it was or was not an offence; and it would then be the duty of the Customs Department, were coppering of peas condemned, to make it known to the foreign packers that peas containing copper would not be allowed to come into England. We do not think such a decree would have any effect other than that of benefiting the trade, for necessity is the mother of invention, and the moment "petits pois" packers knew that copper was no longer allowed, they would call science to their aid to devise a means of "greening" against which no health objection could be raised. It would be done, and an increased trade in tinned peas would result, for thousands now scared from the use of preserved peas by objections to copper, would then use them, where only hundreds do at present.

WATER AT BUTTER PRICES.

An interesting calculation would be that of how much per year the public are defrauded by the "water made to stand upright" game. Properly made butter ought not to contain more than 10 to 12 per cent. of water, but there are tons of butter sold that contain nearer 20 per cent. of water than 10 per cent. It is an ingenious fraud, and a highly profitable one for those practising it. The difficulty for the grocer and the consumer is that neither can know, save by analysis, if the dairy farmer is victimising them, as witness a case at Keighley, on Feb. 22, when Harriet Mason, grocer, Park Wood-street, Keighley, was summoned by Arthur Randerson, inspector under the Food and Drugs Act, for selling butter, which Mr. Allen, county analyst, certified contained 20·3 per cent. of water. He added that the average proportion of water in butter was from 10 to 12 per cent. Mr. Richard Bannister, deputy-principal of the Somerset House Laboratory, in his evidence before the Select Committee on Food Products Adulteration last session, stated that 16 per cent. of water was the maximum quantity allowable even in a salt butter. In this opinion he concurred. According to this standard the sample contained excess of water to the extent of over 4 per cent.—Mr. Leak contended, on the authority of the latest case in the Queen's Bench, that there could be no conviction if water was unavoidably mixed with the butter. Water was a component part of butter, and without it butter could not exist, and there was no standard showing how much water was allowable. He referred to the fact that in that very court a man named McDonald was summoned where the analysis showed 21 per cent. of water, and yet the West Riding County Council withdrew that prosecution and paid the defendant's costs after the decision of certain test cases in Manchester in which the Stipendiary refused to set up a standard, and dismissed the informations. He commented on the fact of the authorities having withdrawn the summons when the sample contained 21 per cent. of water, and in now bringing a case where the quantity of water was actually less. A Select Committee was at present sitting, and at the

request of the trade would probably prescribe a standard. Until that was done great difficulty would continue to exist. Harriet Mason, the defendant, said she bought this butter from Mr. Joseph Townend as pure butter, and she paid the price of pure butter for it. She gave 11½d. a pound for it, and sold it at 1s. 1d. She had no reason whatever to doubt its genuineness. She had bought this kind of butter in winter-time for years past, and had regularly used it in her own house. Joseph Townend said he had been having this butter for the last five or six years, and he bought it as pure butter. He had no reason to believe that it contained an excessive quantity of water. He sold it just as he received it. He had a guarantee from the manufacturers that it should not contain more than 18 per cent. of water. The Bench were of opinion that water was avoidably added in this case, but they also believed that neither the defendant nor Mr. Townend had any knowledge of this, but that did not relieve the defendant from being subject to a penalty. She was morally innocent, though not legally, and she would be fined 1s. and costs.

QUARANTINE VERSUS CLEANLINESS.

THERE is perhaps no other city upon our Atlantic and Gulf coast where the immediate effect of cleanliness, in stopping yellow fever, has been better illustrated, than in New Orleans. Built upon a plane below the high-water mark on the banks of the Mississippi River, the soil is necessarily saturated, and no attention having been given to sanitary measures, it soon became one of the filthiest and sickliest cities in the land. In consequence, it has been visited by yellow fever 36 times in the last 77 years, with a loss of life fully one-third of that sustained by the United States during the same period. Here quarantine was tried and given up in disgust; and again tried all to no purpose. Every effort to save the city from the pestilence failed. During the early part of the civil war, and while in the hands of the enemy, it was cleaned as thoroughly as possible under military rule; and while other cities on the coast had the yellow fever, New Orleans escaped, notwithstanding the fact that cases originated in the river opposite the city on board ship. The disease did not reappear until 1867—the city having again been permitted to relapse into its former filthy condition, and the yellow fever to its former habits. Immediately after the terrible epidemic of 1878, a citizens' sanitary association was organized, which furnished the money to remove the accumulated filth. The scavenger system was remodelled, steam pumps were used to empty the drains into the lakes, burials within the city were forbidden, and to this day the southern metropolis has had no yellow fever epidemic, although sporadic cases have occurred on several occasions since.

Now, if New Orleans, in her unhealthy situation and with so many difficulties in the way to secure either subsoil drainage or an efficient system of house drainage, has been able to prevent yellow fever epidemics by the systematic removal of filth and surface water, there is certainly no valid reason why any city in the southern latitudes should be allowed to remain in the condition necessary to create or to propagate yellow fever.

If the money spent by the State governments and municipalities for quarantine purposes had been used for permanent sanitary works; if the general government had used the money spent for quarantine service and for epidemic purposes in the thorough drainage of sea ports, yellow fever as an epidemic would have disappeared long ago from Southern cities as it has done at the North and the world over, wherever a sufficient amount of money has been spent for sanitary work. If Congress, instead of giving quarantine officers power to squander money by the million, and trample upon the personal liberties of American citizens, would employ skilled engineers and sanitarians instead, and spend

those millions in improving the sanitary condition of filthy ports, our commerce need never again be impeded by the detention of ships at quarantine. As soon as international laws are made and properly enforced which will secure cleanliness and free ventilation aboard ship, and that hospitals for the treatment of the sick and the detention of the infected will be provided, neither the plague, cholera, typhus, yellow fever, nor even small pox need ever be feared in this country.—J. C. LE HARDY, M.D., in the *Scientific American*.

THE INSANITARY USE OF GAS.

A SUBJECT to which too little attention has hitherto been devoted has been brought to the attention of the Huddersfield Sanitary Committee by Dr. James R. Kaye, medical officer of health, who says, with regard to the inspection of workshops, etc.: "There is one highly injurious factor now steadily on the increase in workshops; I refer to the use of gas for industrial and warming purposes without any, or very little, regard to the escape of the products of its combustion. This is specially noticeable in printing establishments, in tailoring, and in laundry work, and the heating of offices. Though the workers seldom complain, the blanched appearance of some of them is witness of the poisonous effects such as lassitude and headache, with general physical depression. Its destructive effect on books and on articles of furniture is well known. On this subject there seems to be much ignorance on the part of business men, and many of them require to be made aware of these facts."

DANISH BUTTER, ADULTERATED WITH SIXTY-EIGHT PER CENT. MARGARINE.

ALL is not gold that glitters, nor is all Danish butter that is sold as such. The truth is, that the short-sighted policy of the general Press in persistently lauding the supposed excellence of Danish butter, has not only aided Denmark to develop an enormous trade, but has enabled a lot of adulterated butter to be foisted on the public, to the direct injury of English and Irish trade.

At Auckland on February 18, Robert Waive, the manager of the Danish Dairy Produce Company at Spennymoor, was charged with selling butter adulterated with 68 per cent. of foreign fat. A Miss Wilson, at the instance of Mr. Elder, the chief inspector to the County Council, went into the shop and purchased 1lb. of 1s. butter. When the defendant was informed that it was for analysis, he said it was not butter but a mixture.—The defence was that there was no sale to the prejudice of the purchaser, and that every means was taken to show the public that it was margarine.—The Bench said that, as the purchaser was told that it was not butter, they could not convict. The case would be dismissed.—William Welsh, of Spennymoor, was charged with a similar offence.—Miss Wilson bought three-quarters of a pound of butter from a street stall owned by the defendant, and when analysed it was found to contain 86.52 per cent. of foreign fat.—The defence was that there was no deceit in the sale, and that it was sold as margarine.—The Bench fined the defendant £1, including costs.

We wonder how much longer our newspapers will cry up the bogus excellencies of foreign produce, and give free advertisements to Danes and Frenchmen.

FRESH MEAT-JUICE IN DISEASE.—Professor v. Ziemssen (*Wiener Medizinische Presse*, No. 52 1894), the celebrated clinician of Munich, speaks very highly of freshly-expressed meat-juice as a food in disease. Those patients who find the bloody taste repugnant, may easily have this disguised by adding a little brandy and extract of vanilla with sugar, and upon freezing it an agreeable ice-cream is formed, which is eaten by the most fastidious with pleasure. In this manner administered there will be no difficulty in giving a patient at least 200 grams of the juice, and, indeed, even to those patients who have a disgust for all other forms of food, or who cannot retain food, as typhoid cases.

AN OBJECT LESSON IN PUTRID FOOD.

At the Birkenhead Police Court on February 23 Mr. Broomfield, deputy town clerk, made an application for an order for the destruction of a quantity of hams. Robert Wagstaffe, meat inspector, stated that he had been sent for by George Alfred Lavery, 61, Watson-street, on whose premises he found thirty-four hams. They were all absolutely unfit for food.—Dr. Marsden, medical officer of health, said the hams were rancid, putrid, poisonous, and totally unfit for food.—George A. Lavery said he had purchased the hams from a Liverpool firm, whose traveller called on him about a month ago. The usual price was 40s. per cwt., but as the box in question had fallen from the slings and the hams were a bit dirtied they were offered him at 36s. As soon as he began to sell the stuff customers brought it back and he found that it was bad. He went to the Liverpool people, and they said the stuff was good, and he must try to make a sale of it. They said "Rush it off; do the best you can with it; we deny responsibility." He afterwards sent for Inspector Wagstaffe.—There was another application regarding seventeen hams and eight pieces found on the premises of William Jones, 45, Watson-street, in which the evidence was precisely similar.—The magistrate, having inspected the ham, made an order for its destruction. We hope Mr. Lavery and Mr. Jones will haul the "Liverpool firm" before the Courts on a claim for the amount, and give them all the punishment the law at present unfortunately only allows—exposure.

IMPORTANT COCOA PROSECUTIONS.

At Southampton, on February 22, John Fletcher Dodd, of East-street, was summoned for selling cocoa which contained 40 per cent. of added sugar and 30 per cent. of added starch. Mr. Nalder, the Town Clerk, appeared for the prosecution, and Mr. Cross, of Bristol, defended, entering a plea of not guilty. In opening the case Mr. Nalder referred to Section 6 of the Act under which the proceedings were taken, and said the cocoa which was sold to the inspector contained 40 parts of added sugar and 30 parts of added starch. He proceeded to explain the way in which the cocoa plant grew, and said the principal manufacturers in the country extracted fatty matter from the cocoa beans, this matter being very indigestible. The oily matter having been extracted, the remainder was sent out as cocoa, but he submitted that there was an inferior article sent out of which he contended the cocoa under consideration belonged. The Town Clerk said very considerable interest had been taken in a recent case from Gosport, which had been argued in the higher court, and he proceeded to quote from this at some length, and as regards the facts mentioned that the defendant was a highly respectable tradesman, and one against whom he had nothing to say. On January 11th the Inspector bought $\frac{3}{4}$ lb. of cocoa, for which he paid 9s., this being at the rate of 1s. per lb. There was no label attached to the wrapper, stating that the article sold was a mixture, and that, he submitted, should have been done in this case. There was in the trade an article which was known as chocolate powder, which contained a greater proportion of sugar and starch, and which was sold at a very low figure. He would have to ask the magistrates whether the sugar and starch were absolutely necessary for the preparation of cocoa as an article of commerce, and whether, if not, there was in this case so great a quantity added to increase its bulk as justified them in fining the defendant.—Joseph H. Fowles, the Inspector, deposed to purchasing the cocoa stating that the assistant asked him if the article at 1s. a lb. would do. He replied in the affirmative, and then, after the usual formalities, divided the cocoa into three parts, one of which was sent to the Borough Analyst. Mr. J. Brierley, the borough analyst, said he had made a special study of the component parts of cocoa with a view to detecting whether the article was pure or not. Cocoa in its natural state contained from 52 to 53 per cent. of fat and 11 per cent. of starch, besides other matters. This large percentage of fat rendered it unsuitable for food, and it was necessary to get rid of this excessive fat. In the better class of cocoa this matter was reduced as low as 20 per cent., whilst it was not necessary to add any sugar or starch. The consequence of adding sugar and starch added to the bulk of the article, but whether it increased the profits of the vendor depended on the price at which it was bought.—Witness, cross-examined at length on the preparation of cocoa. In his analysis he found that the fat had not been extracted. Sugar and starch had been added, and nothing unusual had been done in this case.—Re-examined: There was no objection to the addition of these articles, so long as it was brought to the knowledge of the purchaser.—By the Chairman: The addition of sugar and starch did not make the article unfit for food; it was simply added to allow of its being sold cheaper.—Mr. Cross addressed the Bench for the defence. Why it should be suggested that cocoa with something taken out of it was pure, and with some-

thing added was not, he could not conceive—both were not cocoa, for botanical cocoa was not sold. Commercial cocoa was either cocoa with the butter extracted, or cocoa with the butter not extracted, but with something added to it, which brought about practically the same result. He thought it would be much better if the analyst's certificate stated that the starch used was not that used for washing, but arrowroot or sago, because some people were led into the idea that this was the case. Dealing with the cocoa, Mr. Cross said the packages when sent from the manufacturers' were accompanied by the proper labels, but in this case it was omitted. Even, however, if those were left off, he submitted they were protected by the first sub-section of Section 6.—The defendant was then called, and said he had carried on business in East-street for some six years. The cocoa was sent from the manufacturers' in 14lb. tins, and was sold at 1s. per lb. The labels accompanying the articles were put in, and witness said his instructions were that the labels with "chocolate powder" should be attached to the packages. He made no larger profit by selling this preparation than he would by selling pure cocoa.—Cross-examined: If the assistant sold the packet without a label he did wrong.—James Edney, the defendant's assistant, said he was not aware of the ingredients of which the article was composed, and did not know it was necessary for a label to be affixed.—The magistrates having conferred for a minute or two, the Chairman said they had come to the conclusion that there must be a conviction in the case. They did not, however, want to put the penalty very high, because, although the article was sold as a mixture, it was not unwholesome. Defendant would be fined 10s. and costs. There was another charge against Annie Amelia Mitchell, of St. Mary-street, who was summoned under the Food and Drugs Act for selling cocoa which contained 30 per cent. of added sugar and 31 per cent. of added starch. Mr. G. B. Nalder prosecuted, and Mr. W. L. Bell defended. The only question in dispute between the parties was as to the conversation which took place between the purchaser and the assistant. The Inspector said on January 11 he asked an assistant for $\frac{3}{4}$ lb. of cocoa, and for this witness tendered 3d. After the money had been paid the assistant said the article was a mixture. Cross-examined: The assistant did not inform him the article was a mixture until after the money had passed. For the defence, it was submitted that the purchase was not concluded till the money was placed in the till, whereas, in this case, the assistant, whilst holding the money in his hand, gave the information that it was a mixture. William Henry Welsh, the assistant, said before handing the inspector the cocoa, he said it was a mixture. The money passed after the information was given.—Thomas Coles, the manager, deposed as to the facts as given by the assistant. The witness stated that the inspector informed Welsh he wanted cheap cocoa. Fowles was then told that the article was a mixture, when it was being weighed up.—A Mrs. Gollitt, of York-street, who was in the shop at the time, was also called for the defence.—Mr. Thomas Mitchell, son of the defendant, said at his request Welsh made a report to Coles on the same day.—The inspector, re-called, denied that anything was said about the price when he asked for the cocoa. He also repeated his previous statement that the parcel was placed in his hands before he was informed it was a mixture.—This closed the case, and the magistrates retired from the court and, after an absence of some minutes, the chairman said the majority of the magistrates were in favour of a conviction, and the penalty imposed would be 10s. and costs.—Mr. Bell gave notice of appeal at the next Quarter Sessions, and the sureties were fixed in one sum of £50 and two at £25.

At Kensington Petty Sessions last week, John Thomas Underwood, Askew-road, was summoned by the Hammersmith Vestry. Mr. W. P. Cockburn prosecuted on behalf of the vestry, and produced the certificate of the public analyst showing that the sample consisted of 35 per cent. of cocoa, 35 per cent. of sugar, and 30 per cent. of starch. Mr. Halswell said that cocoa was an article of commerce, and he had asked for pure cocoa—nibs—he would have got it. A lengthy conversation took place between the magistrates concerning a judgment reported in the *Times* of the previous day, and a messenger was dispatched in search of that newspaper. A further conversation took place as to whether the case reported was analogous to that before the court. The chairman said he had not read the case. Mr. Burke said he had not heard or read it. Mr. Halswell wished to have the case read. General Power said the case reported had nothing to do with that before the bench. The appeal made to the judges was entirely different in character. A man was summoned for selling cocoa that was adulterated, and he pleaded guilty. Admiral Field, who was on the bench, objected to his doing so, and said that it was impossible to drink pure cocoa. An appeal was then made to the judges and dismissed by them.—The Chairman said the application appeared to have been for a mandamus.—Eventually it was decided to hear the case.—Mr. Cockburn reminded the bench that the defendant had admitted the offence, and also the accuracy of the analyst's certificate. He had looked through the case referred to, but it had no bearing of any kind on that before the bench. He was willing that the case should be adjourned if the bench so desired.—The Chairman: No; go on.—Charles Doubtfire, 69, Greenside-road, a lad, proved the purchase of the article, at the instance of Inspector Oatley.—This officer bore out the evidence of the previous witness, and produced the analyst's certificate. While he was dividing the samples the defendant said his man ought to have put a label on the package showing that it was a mixture.—Mr. Halswell: That is an offence.—The Chairman: Fined 10s and costs.

ADULTERATION PROSECUTIONS.

KESTEVEN.—The Public Analyst (Mr. Cassal) reported that during the quarter ended the 31st December last 20 samples of foods and drugs had been submitted for analysis from the Bourn and Sleaford Division. Of these 13 were genuine, four adulterated, and three inferior. Action was taken in the four cases of adulteration, and each defendant was fined £2, and 11s 3d costs.

YARMOUTH.—The Town Council have received a letter from the Secretary to the Local Government Board, expressing regret that no samples of food and drugs had been procured for analysis in the borough during the year 1894, and suggesting that on reconsideration the Town Council would decide to cause at least one sample to be taken annually for each 1,000 of the population. At a meeting of the Sanitary Committee, Mr. F. Danby Palmer moved, and Mr. Nutman seconded, and it was resolved, "That the Medical Officer of Health be instructed to take such samples of food and drugs for analysis during the ensuing year as he may think necessary."

LIVERPOOL.—John Cavanagh, grocer, Great Homer-street, was fined on February 20th, 40s. and 7s. 6d. costs for selling margarine as butter, and 5s and 17s. 6d. costs for selling as 1s. 4d. coffee a mixture containing 45 per cent. of chicory. Charles M. R. Dixon, grocer, 195, Brownlow-hill, was fined £1 and costs on two informations charging him with selling coffee containing 33 per cent. of chicory, without labelling same as a mixture, and as butter a mixture containing 12 per cent. of water and upwards of 80 per cent. of foreign fats. William McCulloch, grocer, 38, Scotland-road, for exposing margarine for sale without a label, was fined 20s. and costs. For selling margarine as butter, William Jones, grocer, 2, Beaumont-street, was fined 20s. and costs. The cases were proved by Inspector Baker, and Mr. Pierce prosecuted.

GRIMSBY.—Two Grimsby milk dealers, along with the Grimsby inhabitants, have reason to thank Mr. H. F. Moody, sanitary inspector for that town, in that he went for the wholesale man, and presented him at court, on February 21st. The disciple of Simpson was the cause of Christopher Miller and James Smith being summoned for selling milk adulterated with 12½ per cent. of added water.—Miller and Smith both said they sold the milk as they received it from a Mr. Hutson.—Mr. Moody met Hutson coming into the town with milk and got a sample from him. This was shown to be adulterated to exactly the same extent, viz., 12½ per cent.—Hutson said he had been in the trade 19 years, and although numerous samples had been taken of his milk, he had never had any complaint of this sort made against him. They had been very short of milk during the cold weather, and he did not know what might have been done to the milk, but he supposed he would have to be responsible. Mr. Moody said there had been no sample of Hutson's milk taken by a borough inspector for the last seven years.—Replying to Mr. Moody, Hutson said there were ten gallons of milk in the churn from which he served the pint which was purchased as a sample.—Mr. Moody: Then that would mean there were ten pints of added water in that churn.—Hutson: I wouldn't wonder at all at that, considering the cold weather we have been having, and if you had milk to sell no more would you. (Laughter.) We cannot make much money out of wheat in these hard times, and we must make it out of something. (Laughter.) Hutson was fined £5 including costs, and the other two cases were dismissed. The magistrates said this must not be taken as a precedent, as retailers should get a guarantee from the wholesale man that the milk they bought was pure.

At Taunton on February 20, Samuel Wright, of the "Turk's Head," was summoned for selling rum to P.C. Wood, which, when analysed by Dr. Alford, was 30 degrees under proof.—Fined 2s 6d. and costs.

MORECAMBE.—Three Morecambe grocers—Edward Turner, Samuel Walton, and George Batty—were fined 10s and 19s. costs each at Lancaster on February 23, for selling ground ginger, which the analysis showed to be adulterated to the extent of 50 per cent. with "spent ginger."—These were the first cases of the kind in Lancaster.

NEWINGTON DECIDES TO APPOINT AN INSPECTOR.—The Public Health and Sanitary Committee recommended that an additional sanitary inspector be appointed to carry out the Adulteration of Food and Drugs Acts, under the medical officer of health, at a salary commencing at £100 per annum, rising by annual increments of £5 to £150. Several members spoke of the insufficiency of the salary offered.

REMARKABLE RESULT OF A DIRECT APPEAL TO THE COW.—The *Star* says: "At Bridgend a milk vendor was summoned for adulteration. He protested that the milk had not been tampered with since it came from the cow. The police took some milk from the cow, and an analyst certified that it contained more water than milk." We want to know who the analyst was before we believe this yarn. We have not forgotten Lloyd's cows.

LEAD IN POTABLE WATER.

At a meeting of medical officers at Leeds, on Thursday, the question of "Lead in potable waters" was discussed. Dr. Whitelegge said that dogmatism on the acid question was wrong, for the character of the acid might be different at different times. One of the most troublesome waters for its action on lead was that of the Wakefield Corporation, and yet soda alone had absolutely removed the plumbo-solvency of the water, which was more than he could say of any other West Riding authority. He looked forward to the time when authorities would prohibit the putting in of lead

service pipes in all new houses at least. We look to something more than this, and hope the day is not far distant when the use of lead pipes for water carriage will be prohibited by law.

THE LONDON COUNTY COUNCIL & MILK CHURNS AS MEASURES.

The Bucks County Council have been considering the action of the London County Council in regard to making milk churns measures, and have passed a resolution in the case of *Harris v. The London County Council*, "That the attention of the Board of Trade and of the London County Council be called to the injustice arising out of this decision to the milk producer whose churns are constantly altered in their accurate capacity by the accidents of transit, and whose contract is usually, as in this case, made with a firm well capable of protecting themselves against fraud by their own precautions, and also to the practice still adopted by London dairymen of making contracts for barn instead of Imperial gallons." The subject was of much importance to agriculturists, who should be protected so far as possible in the disastrous times through which they are passing. The London County Council have, by the practice they insisted upon with regard to milk churns, done a great injustice to farmers. So long as gauges are left in the churns they should be looked upon as measures of capacity.

A NEW METHOD OF MAKING PALATABLE AND DIGESTIBLE MILK.

DR. ROBERT T. EDGS, of Boston, gives a valuable way of preparing milk, where other methods have not proved useful:—

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopœia. The milk should be stirred until it cools. In this way a very fine flocculent coagulum is produced floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many. It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatinized milk.—*Boston Med. and Surg. Jour.*

WHITE WAX PROSECUTION.

A MAGISTRATE SUMMONED UNDER THE FOOD AND DRUGS ACT. AT Pontefract, on Feb. 25th, Mr. W. R. Mand, J.P., was summoned under the Food and Drugs Adulteration Act, charged with selling 40zs. of white wax, to W. H. Wilson, County Council inspector, not of the nature, substance, and quality required by the purchaser.—The inspector proved, that on the 10th of January last, he visited the defendant's shop, and purchased 40zs. of white wax, which he divided into three parts, one of which he sent to the public analyst, one he kept himself, and one he left with Mr. Mand. On the 11th of February, he received the analyst's certificate, which stated that the substance contained 30 parts of beeswax, and 70 parts of paraffin.—Mr. Mand, who conducted his own case, and did not dispute the accuracy of the analysis, said witness got precisely what he asked for. There was no wax absolutely white, and he handed up samples of the white wax described in the Pharmacopœia. He next objected to the summons, which charged him with selling a certain drug, to wit, white wax. As a matter of fact, it was not a drug at all. He asked the Bench to consider this, not from the point of an analytic faddist, but from the standpoint of common sense. He considered it very unjust to tradesmen to be brought before the magistrates, charged with acts of this kind when there was absolutely no ground for them. It was a risk to the credit of such tradesmen.—The Bench upheld Mr. Mand's contentions, and dismissed the case.—A precisely similar case against Mr. Bratley, chemist, was dismissed on the same grounds.

TEA INTOXICATION.

To speak of this beverage as "The cups which cheer but not inebriate," must be regarded as an instance of purely poetic license.

As the best work of the poet is likely to be produced when he is thoroughly intoxicated with his subject, this line may be regarded as of such origin. Certainly it belongs to the realm of poetic fancy rather than to that of scientific fact. And it may be claimed that its author, by his subsequent melancholia and suicide, demonstrated the danger of indulgence in this direction.

No one who has practised among the poor of a large city can have failed to recognise the baneful effects of excessive tea-drinking, especially among sewing women. James Wood (*Medical News*) says:—

Of 1,000 consecutive cases applying for general treatment at our largest dispensary, 100, or 10 per cent. were found to be liberal indulgers in tea, and suffering from its deleterious effects, and no one of which came for treatment of the tea habit, but for various other complaints. They were loth, when apprised of the cause of their illness, to believe that such a harmless household commodity ever produced any bad effects. Of these 100 cases, 20 per cent. complained of persistent dizziness, 19 per cent. of indigestion, 45 per cent. of headache, 20 per cent. of despondency, 19 per cent. of palpitation of the heart, and 15 per cent. of insomnia.

When the tea has been used for a considerable period in excess, and its detrimental action has been constant, we have well-defined symptoms supervene, a few of which are such as vertigo, mental confusion, sensible palpitation of the heart, restlessness, insomnia,

hallucinations, "nightmare," nausea, neuralgia, anorexia, constipation, prostration and anxiety, and a peculiar kind of intoxication, ending after hours of vigil in a torpor from exhaustion.

What worse line of symptoms could follow the use of a beverage so commonly employed, it is hard to imagine, and that many people use it to excess is unquestionable. Many have confessed to an inability to "get through the day" without copious imbibitions of what is, in many cases, a strong decoction. Some drink every twenty-four hours as much as fifteen pints, and some there are who are unable to judge of how much they consume.—*Philadelphia Polyclinic.*

A NATIONAL PATENT MEDICINE LAW ?

In spite of the general understanding, says *The Pharmaceutical Era*, that the present National Congress will not mar its record by actually doing something, Representative Meredith, of Virginia, has introduced a proprietary medicine bill, which at last accounts was enjoying a period of quietude and rest within the archives of the Ways and Means Committee. It is proposed to create a commission of medical and chemical experts to examine into the merits of proprietary medicines. All manufacturers are required to take out a license, costing in the neighbourhood of 100 dollars, and to place upon every package an internal revenue stamp, costing five per cent. of the retail price of the article. All proprietary articles are to be submitted to these experts for examination, and if not found to be as represented, or untrue to formula, the fraud is to be exposed. Otherwise, the formula is not to be published, and heavy fines will be imposed for divulging any information regarding the composition of the article.

We question if such an act would not please many of the "aloes" vendors by giving Government endorsement to their nostrums.

LARD WITH 75 PER CENT. ADULTERATION.

JOHN JAMES WILSON, grocer, Byrom-street, Garston, was summoned at Liverpool, on February 25, for having sold as pure lard a substance which contained upwards of 75 per cent. of cottonseed oil and beef stearine. Inspector McKeand sent a little girl to purchase 1lb. of lard at the defendant's shop, and she did so, paying 6d. It was found, on analysis, to be adulterated as above stated. The defendant pleaded that his wife had made a mistake, the genuine article and the other commodity being exactly of the same colour. The magistrates imposed a penalty of 20s. and costs.

MR. LAWSON TAIT AND MR. ERNEST HART.

THE *New York Medical Journal*, of Feb. 9, has the following article, to which, we doubt not, Mr. Ernest Hart will feel bound to reply, as it seems incredible that the editor of the *British Medical Journal* could have so acted:—

A long dispatch from London, published in the *Sun* a few days ago, brings into prominence what seems destined to lead directly to the culmination of the feud that has cropped out, every now and then, between Mr. Lawson Tait, the great Birmingham surgeon, and some of his professional brethren belonging to London, particularly Mr. Ernest Hart. It is in the form of a pamphlet, to the publication of which Dr. Cushing, of Boston, seems to have innocently spurred Mr. Tait on, by publishing the following statement: "In the light of facts recently placed on evidence concerning Tait, his statistics have far less weight with the surgical world than was the case a year or two ago."

Mr. Tait wrote to Dr. Cushing, to ask what the facts were to which he had alluded. In reply, Dr. Cushing rehearses a scandal, to the effect that Mr. Tait had seduced one of his nurses, and then, after having pledged himself to support the illegitimate child, of which he owned to being the father, refused, after a time, to continue such support. Mr. Tait then wrote back, denying the whole story, and impugning its relevance. In the course of this letter, Mr. Tait says:

"As to the story, it is a lie, or, rather, a tissue of lies, from beginning to end. Two women, sisters, entered into a scheme to blackmail me; one a nurse dismissed for insubordination, and one on whom I had done ovariectomy, and they laid claim to £16,000 as hush money. They never got a stiver of that money, and the case never came to trial for the reason that you will see in the published account of it which I inclose. The case never came to trial, never a scrap of information appeared in the public press, much to my discomfort, but the plaintiff's story was spread abroad as a means of coercing me to pay hush money, and chiefly by members of my own profession residing in London. I stood firm to fight, as, unfortunately, too few men placed as I was do. The plaintiffs traded on the belief that a man in my position and as rich as I was would pay up rather than have my name tarnished. But I would have spent my last shilling, and my wife would have sold her wedding ring, before I would have been bled in such a way. The case collapsed after nearly two years of legal dodging, and I never had an opportunity of proving the utter falseness of the charges made against me. Your informant may not have known this, but I suspect he did. Dates would prove this."

Mr. Tait enclosed a photographed copy of the woman's retraction, duly witnessed, as follows: "I unreservedly withdraw all statements and suggestions at any time made by me or on my behalf that you ever assaulted me or took advantage of me in any way while I was under the influence of liquor or under any other circumstances. And I also unreservedly withdraw all other charges, imputations, and reflections at any time made by me against you."

Dr. Cushing, thereupon, as in honour bound, gave Mr. Tait the name of his informant, who turns out to be Mr. Ernest Hart, the

editor of the *British Medical Journal*, now in India, and loyally offered to make any apology that Mr. Tait might require, and to give his testimony, if necessary, even in an English court. When Mr. Hart gets back to London we may perhaps be told how such a monstrous scandal got afloat.

A VICTIM OF FRENCH BUTTER SWINDLERS.

AT Chichester, on February 23rd, Herbert S. Aylmore, grocer, East-street, was summoned for selling butter adulterated with 75 per cent. of margarine.—Mr. W. P. Cogan appeared in support of the summons, Mr. J. C. Buckwell, of Brighton, representing the defendant.—Sergeant Goble stated that on 23rd January he called with his wife at the defendant's shop. Witness stood at the door, whilst his wife, going up to the counter, asked for a pound of tennepenny butter, which was served to her from a quantity resting on a china slab on the counter. There was a label on it containing the words, "Pure butter." In addition to the larger piece there were several smaller pieces lying by the side of it. Afterwards he informed an assistant that the butter was purchased for analysis, and, Mr. Aylmore having been called, the butter was divided into three parts. The defendant informed him that he had a warranty with the butter, and after a search on the file he produced it.—Supt. Ellis proved having despatched a sample of the butter for analysis to Mr. Otto Hehner (County Analyst), whose certificate he now produced, showing that the sample contained 75 per cent. of margarine and 25 per cent. of butter.—Mr. Buckwell said that his defence was that Mr. Aylmore bought the butter with a written warranty, and was therefore protected under the provisions of the Public Health Act and the Margarine Act. Mr. Aylmore had been in the habit recently of purchasing butter from a London firm, and on December 5th, when one of the firm was at Chichester, he purchased at 80s. per cwt., at the time receiving a verbal warranty of purity. The butter was received on December 11th, together with an invoice dated December 15th, containing a warranty that it was pure Normandy butter, and in each basket there was also a label containing a guarantee of purity. The fact of the defendant buying butter at 9s. and selling it at 10d. per pound—a very reasonable profit—furnishing clear proof that there was no intention of fraud on his part. In fact, he had acted in a most *bona-fide* manner throughout.—Mr. Aylmore gave evidence bearing out the statement of his advocate. He sold the butter in the same condition as he received it. In cross-examination, witness stated that he always had a warranty with his butter, and never bought mixtures. Altogether last year he had ten transactions with the firm he had mentioned. He should, however, never have another with them (laughter). Since he had become aware of the result of the analysis he had disposed of what remained of the "butter" as margarine at 6d. per lb.—Henry Leach, warehouseman in Mr. Aylmore's employ who opened the butter after its arrival at the shop, stated that there was a label in each of the baskets warranting the purity of the butter.—Arthur Goddard, shopman, proved that the butter sold to Sergeant Goble formed part of that received from the firm in question.—After hearing the advocates on the question of warranty, Mr. Cogan contending that the invoice was really no warranty, the bench retired to consider their decision.—On returning, the Mayor said the Magistrates were of opinion that the warranty had not been proved to their satisfaction. They did not think Mr. Aylmore had been sufficiently careful, but they exonerated him from any wilful intention to sell an adulterated article. The maximum penalty was £20, and defendant would be fined 5s. and costs, £1 14s. in all.—Mr. Buckwell intimated that as he had been instructed in the matter by the Grocers' Association, that body would probably like to take a further opinion as to the effect of the law on the subject.—Mr. Cogan stated that there was another case against the defendant, but he was instructed not to proceed with this.

THE INFLUENCE OF ALUM, ETC., ON DIGESTION.

IT is generally believed that aluminum compounds, which have been used extensively in the adulteration of flour and in baking powders, both impede digestion and have an injurious effect on the digestive organs. In a recent series of experiments by Bigelow and Hamilton (*Jour. of the Amer. Chem. Soc.*, 1894) the influence of these compounds was studied, not only upon the digestive action of pepsin and hydrochloric acid, but also upon artificial digestion in pancreatic juice. Alum interfered materially with the action of the gastric juice, but the pancreatic juice effected the digestion of the remaining portion of food, which should have been digested by the pepsin. The same was true of the digestion of matters containing aluminum hydroxide. The action of aluminum phosphate was quite different, however, for notwithstanding the supposed insolubility of this compound, 10 or 12 per cent. of the albuminoids which were digestible in the presence of alum or aluminum hydroxide appeared to be insoluble in the presence of an equivalent amount of the phosphate.

ADULTERATED HONEY.

MR. F. B. GUTHRIE, reporting on several commercial samples of honey obtained in Australia, found that three out of five were adulterated with starch, syrup, or glucose. His conclusions rest on the following facts. Honey consists principally of a mixture of two sugars, dextrose and levulose, in slightly varying, but nearly equal, proportions. As, however, levulose turns the ray of polarised light nearly twice as far to the left as dextrose does to the right, genuine honey usually exhibits a left-handed rotation. Glucose obtained from starch exhibits a right-handed rotation, consisting,

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as it does, of maltose and dextrine. Cane sugar is also dextro-rotatory. Maltose does not reduce alkaline solutions of copper so readily as glucose, and dextrin not at all. Consequently, honey that gives a right-handed polarisation may be concluded to contain starch, syrup, or cane sugar, and honey containing these adulterants will reduce less than the normal amount of alkaline copper solution than pure honey. If invert sugar were used as an adulterant, the rotation to the left would probably be greater than normal (and traces of the acid used to invert it would probably be detected), but the higher price of invert sugar prevents its use for that purpose at present.

WHAT AGRICULTURE OWES TO CHEMISTS.

PROFESSOR WARINGTON in a recent address said:—"A farmer will not generally admit that he already owes a great deal to science, yet in fact without the aid of science modern English agriculture would wear a very different aspect. What services, for instance, has not chemistry, and particularly chemical analysis, rendered to agriculture? The very existence of most artificial manures is entirely due to chemistry. Who but the chemist could have discovered that the various mineral phosphates, possessing such diversity of aspect, which are now raised in vast quantities in many quarters of the world, all contained the same valuable manure constituent which is found in bone; and who but the chemist could have devised a plan for converting these hard phosphatic rocks into a portable, soluble manure far more effective than the best bone dust? Again, without chemical analysis how could the transactions of the manure market be carried on; how could the money values of manures be ascertained? Yet, strange to say, how few farmers are there who understand the terms of a chemical analysis, and realise its importance? As a natural consequence of this ignorance, farmers are easily imposed on, and often waste their money on inferior manures and cakes, if only these are cheap, and sufficiently well recommended. A wide development still awaits the agricultural use of chemical analysis. When farming operations are conducted in the light of science, chemical analysis will be regarded as one of the indispensable means for achieving economical results."

SOME REMARKS ON TWO RECENT SOMERSET HOUSE CERTIFICATES.

By OTTO HEHNER.

A SHORT time ago a sample of milk was condemned as watered to the extent of 5 per cent. by the Public Analyst for Middlesex, Mr. E. Bevan. At the hearing of the case the certificate of the Public Analyst was disputed, an analysis of Mr. A. W. Stokes being put in. The sample left with the inspector was, therefore, sent to Somerset House. Mr. Bevan had taken the precaution of preserving his portion of the sample, by the addition of a few drops of formaline, and this preserved portion was submitted to Dr. Bernard Dyer, myself, and Mr. Chattaway. The following are the analytical results obtained by the various analysts mentioned.

	Bevan.	Stokes.	Dyer.	Hehner.	Chatt-Somerset away. House.
Fat	3'54..	3'42..	3'45..	3'49..	(?) .. 2'95
Solids not fat ..	8'06..	8'51..	8'23..	8'28..	(?) .. 7'11
Total solids	11'60..	11'93..	11'68..	11'77..	11'81.. 10'06
Ash	0'67..	0'71..	0'68..	0'65..	0'67.. (?)

About the amount of fat the analysts concerned, with the exception of Somerset House, are agreed. They establish beyond a shadow of dispute that the fat amounted to 3'42 as minimum to 3'54 as maximum, the average being 3'47. Somerset House finds 0'52 per cent. less. This result is obviously wrong.

Further, as regards the solids, not fat, it is equally obvious that while Mr. Stokes found more than was actually present, Somerset House found about 1 per cent. less than was contained in the original milk. They reported that the sample was adulterated with 10 per cent. of water. Assuming that they adopted 8'5 as the limit of solids, not fat, contained in genuine milk, the amount of solids, not fat, found after correction for decomposition would be 7'65 per cent., a figure most materially smaller than that furnished by the fresh milk. But when it is taken into consideration that 0'52 per cent. of fat used must have been contained in the Somerset House solids not fat, the figure of 7'65 is still further diminished to 7'13, or 1 per cent. less than that contained in the fresh milk, and this *after* the correction for decomposition had been applied.

It follows, that the system of correction, whatever it may have been, has hopelessly broken down; neither the estimation of the fat nor that of the solids, not fat, is tolerably correct, and, if it were needed, the lesson is once more enforced. Do not venture to analyse a sample of milk which has undergone decomposition. It cannot be done, even at Somerset House.

In the present case, the Somerset House analysis has made the sample appear worse than it really was; in numberless previous cases it has been wrong in the contrary direction. How much longer is this system of analysing decomposed milk to continue?

The second case to which I desire to draw attention concerns butter. A sample was analysed, when fresh, by the public analyst for Truro, Dr. Bernard Dyer. He certified to the presence of 20 per cent. of foreign fat. The sample left with the defendant was analysed by the Public Analyst for Plymouth and Devonport, Mr. C. A. Bean. He states, in his certificate, that the sample, when analysed by him, was "rancid, mouldy, and permeated with bacterial growths, which would interfere with the analysis." He concluded, from his analysis, that although the amount of volatile

fatty acids was low, it lay yet within the limits for genuine butter. In other words, he reported that the sample, when analysed, was decomposed, and that his analytical results were indecisive, either one way or the other.

The sample went to Somerset House, and the certificate, signed by Messrs. Bannister and Lewin, set forth that the sample was rancid, and so highly decomposed as to show, on analysis, no less than 6 per cent. of free acid, calculated as palmitic acid, and further, that the results of the analysis of the fat did not afford evidence of the addition of foreign fat.

The wording of the certificate is as ambiguous as the old, much-criticised, and now abandoned, Somerset House phrase, "We cannot affirm, etc."

I carefully refrain from expressing any opinion as to the nature of the sample, but would point out the exceeding unfairness, both on the part of the Public Analyst for Plymouth and Devonport, and especially on that of the Somerset House chemists, in analysing and reporting upon a sample which had avowedly undergone deep changes by decomposition. Surely it would have been proper, and far from contrary to official dignity, to have frankly declared that the sample was so decomposed as to render any opinion based upon the analysis absolutely worthless. The course adopted is unscientific, and unfair alike to the authorities who sent the sample to Somerset House and to the Public Analyst.

THE SELECT COMMITTEE ON ADULTERATION. CONTINUATION OF MR. FARMER'S EVIDENCE.

XXXIII.

(Continued from page 64.)

Personally I cannot conceive that I, at any rate, should wish to use a mixture of the two.—Mr. Yerburgh: I want to ask you a question upon the effect that food has upon the milk of cows. Is there any form of feeding cows which will increase the quantity of milk given, and at the same time depreciate the quality?—Yes, there is undoubtedly.—What kind of food would that be?—We know that brewer's grains, for instance, will materially increase the quantity, and we know that a large quantity of roots will increase the quantity; and I have found that a certain proportion of maize will increase the quantity; but those things, unless assisted by better foods at the same time, decrease the quality, and we have to give with them a better kind of food, like decorticated cotton cake, or linseed cake, or linseed meal.—Then I gather that if you had a low standard for milk, anybody who wished to get a large yield from his cows, would adopt such a method of feeding, and by that means get a larger result?—Yes, he would get a larger result.—At the cost of quality?—And of the cows, because the cows would not be properly nourished, and they would get in a low state of health under those circumstances.—Then apart altogether from such a system of feeding cows, I gather that if we adopted the standard that you propose, that would put a stop to any such system of feeding cows is simply to increase the quantity at the cost of the quality of the milk?—A man would naturally, of course, feed his cows, so as to produce the proper standard of milk.—Therefore any custom such as that, under such a proposal as yours, would be stopped?—Yes; I cannot think that such a custom prevails to any extent as to feed with such a bad quality of food entirely. I do not know.—Mr. Collman.—Have you any knowledge of the colouring of milk?—I have no knowledge of that; I believe there is such a practice.—You mean that from your own herd the milk would go entirely uncoloured?—Yes.—I think we have had evidence to the effect that a very large proportion of the milk sold in London is coloured; have you any knowledge of that?—I can simply give an opinion; my opinion is that there is very little milk sold in London which is not coloured more or less.—Then it would be coloured by the milk sellers or dealers in London, I take it?—Yes.—You think that as a rule, then, the farmers who send milk to London do not colour their milk?—I have never heard of such a case. I might say that they do not do it.—You said something about brewers' grains which you could not get; have you any objection to them as food for cows?—I should prefer not using them myself. I do not know that there is any objection where a man cannot get roots, provided that he gives other good food. Brewers' grains in themselves are not a rich food, and if a man can get a good supply of brewers' grains, and cannot get the roots if he gave another kind of food to make the bulk of the food a rich food or good nourishing food, there would be no objection to them.—You mean that they would tender rather to quantity than quality?—Certainly; if you give brewers' grains and nothing else, you would get a very poor milk.—But I suppose that in the immediate neighbourhood of large towns where there are brewers' they are used to a very large extent?—I believe that is so.—You thought that there were not many cows that gave a poor quality of milk; but do those cows give extra quantity when they do not give quality?—I always put in, where the cow is properly nourished.

(To be continued.)

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J. OSWELL BURY,
Clerk to the Council.

9, Temple Row, Wrexham.
1st March, 1895.

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Food and Sanitation.

SATURDAY, MARCH 9TH, 1895.

ROTTEN LAW ON ROTTEN FOOD.

To judge by the decisions in our courts, high and low, the vendor of diseased meat is a noble fellow, and the protecting *egis* of the law is never more blessed than when it covers him and thwarts the desires of those who, like ourselves, would punish his practice of vending putrid food to his fellow creatures by imprisonment instead of a fine.

Mr. Asquith, Home Secretary, as long ago as September, 1893, made what all concerned with the suppression of a vile and dangerous traffic regarded as a hopeful statement. It was elicited from him under the following circumstances:—

At the Southwark Police-court on September 8, 1893, Mr. Anscombe applied to Mr. Slade for a condemnation order for certain herrings he had seized at a fish curer's in Tabard-street, Borough. The officer said there were some 85 barrels of herrings in a putrid state, and in such a condition as to be absolutely dangerous to health, and he thought the better course would be for his worship to visit the premises and inspect them. Mr. Coates, the clerk (to the magistrate): You can't do that, sir; they must be brought here. Mr. Anscombe: If I bring them through the streets I shall not only be endangering health, but I shall be committing an offence under the Public Health Act. If your worship will not inspect the herrings on the premises, will you let me bring a sample? Mr. Coates: No, sir; he must bring them all here. Mr. Anscombe: It will take a long time to bring them here; there must be five or six vans. It would be very dangerous. I shall have to bring them through a very densely-populated neighbourhood. Mr. Coates: They must be brought here. Mr. Anscombe: They come from Grimsby, where, as your worship is doubtless aware, that cholera is raging. Mr. Coates: They must be brought here. Later in the afternoon five large mud carts belonging to the Vestry were drawn up outside the court, having been loaded

with the fish and drawn through the Borough. The smell was horrible in the extreme, and said to be by several Vestry officials highly dangerous to health. Mr. Slade then inspected the herrings, and promptly made an order for their destruction. After being sworn, the Inspector said when he made the seizure he found that some 20,000 of the herrings had been smoked, and he had little doubt that if he had been an hour later they would all have been placed on the market.

Mr. E. H. Pickersgill, M.P., disputed the dictum of the Southwark Police-court Clerk, contending that under sub-section 2 of section 47 of the Public Health (London) Act, 1891, "seizure" is not a condition precedent to "condemnation," and that it is sufficient if the subject matter is "liable to seizure." Mr. Asquith, however, who may reasonably be supposed to know the law better than Mr. Pickersgill, did not quarrel with the magistrate's dictum, but said:—

"The magistrate informs me that in his view of the law he has only power to condemn what he has actually seen himself. If this be so the law is, in my opinion, in an unsatisfactory state, and I will consider whether legislation is necessary."

From that day to the present time, however, nothing has been done to remedy this state of the law, which, as Mr. Asquith admitted, is unsatisfactory.

At Portsmouth, on February 20th, the following point occupied the attention of the bench for a considerable time:—Before Mr. A. W. White, Mr. B. Bramble, and Mr. J. W. Gieve, the case of Billing v. Edwards came on hearing. The defendant, who is manager to Messrs. W. and R. Fletcher, King's-road, Southsea, was charged with impeding the complainant, who is an assistant sanitary inspector in the employ of the Corporation, in the execution of his lawful duties. The case had been adjourned for the Bench to decide the point raised by Mr. Hyde for the defence, that an assistant inspector is not entitled under the Act to exercise the powers of an inspector in making a seizure. Defendant also contended that the meat was perfectly sound.—Mr. G. H. King prosecuted for the Urban Sanitary Authority.—Mr. White gave the decision of the Bench as follows:—This is an information laid by George Timothy Billing, who is described as Inspector of Nuisances to the Urban Sanitary Authority of the Borough of Portsmouth, against William Henry Edwards, of King's-road, Southsea, manager of W. and R. Fletcher, Limited, "for that on the 15th December last he did unlawfully impede the said George Timothy Billing, he then being an Inspector of Nuisances for the Urban Sanitary District of the said borough, when carrying into execution the provisions of the Public Health Act, 1875," and the information is laid under the 118th section of the Public Health Act. The facts of the case as to the original inspection and seizure, and as to what happened thereon, are extremely simple, and practically undisputed. The informant inspected and seized the meat in question, and took it to the house of the Medical Officer of Health. This officer there seems also to have inspected and condemned it, and, whilst indoors writing, as he says, the condemnation form, the defendant, who had accompanied the Inspector, seems to have taken the meat from the cart in which it then was and disappeared with it, thus preventing or impeding the Inspector from taking it before a justice to be condemned. Now the point raised by Mr. Hyde, on behalf of the defence, was that the informant was an assistant-inspector only, and not an Inspector of Nuisances, and, as such assistant, had no legal right to inspect the meat in question or to seize it, and, at the request of the Bench, the minute-book of the Corporation was sent for, and there, it appeared, the informant in this case was appointed an *Assistant Sanitary Inspector* only. It was suggested that we might amend the information by describing the informant as an Assistant Inspector, and this we were prepared to do, but we do not consider that this would help the

case of the informant if what he did in the first place was illegal. Now we have carefully considered the 116th section of the Public Health Act, 1875, and that section authorises either the Medical Officer of Health or Inspector of Nuisances to inspect meat, and if he finds it diseased, unsound, unwholesome, or unfit for the food of man, he may seize and carry away the same himself or by an assistant, in order to have the same dealt with by a justice. We do not consider that an assistant inspector has the right to make the inspection or the seizure in the first instance; consequently, our decision as to this point must be in favour of Mr. Hyde's contention. Now it has been argued before us, indeed Mr. Addison suggested that point for argument, that the inspector having taken the meat to the Medical Officer of Health when the defendant was actually in his company, and without any protest on the part of the defendant, and the Medical Officer of Health having seen it, and pronounced it unfit for the food of man, he did then in fact seize it, and that Billing was then acting as his assistant when he was about to take it before a justice, consequently the defendant in taking away the meat impeded Billing when acting as assistant to the Medical Officer of Health. No doubt there is a good deal in that argument, and Mr. King has very forcibly put it before us, and we should have been glad if we could have given effect to it, but our opinion is that the 116th section of the Public Health Act, 1875, contemplates a preliminary examination or inspection at the place of exposure for sale or deposit for sale, and that the seizure must take place there, and as that was not done in this case we fail to see how we can convict the defendant upon this information for impeding the informant "when carrying into execution the provisions of the Public Health Act," as he was not, in our judgment, doing so. We have referred to section 28 of the Public Health Acts Amendment Act, 1890, but we do not think this helps this case, as the meat was not condemned by a justice. The information will, therefore, be dismissed, but we shall be glad to state a case if called upon, as the points raised are both novel and important."

Appeals in law are very costly, and High Court decisions, strangely enough, in all cases of importance under the Food and Drugs Act, and in regard to the sale of diseased meat, have been always against the public protection from fraud or the palming off upon them of rotten food. The state of the law will well repay a little illustration. Some three years ago Dr. Louis Parkes, Medical Officer of Health, Chelsea, applied to Mr. Shiel at the Westminster Police-court, and requested him to condemn 142lbs. of beef as unfit for human food. The meat had been supplied that morning to the St. George's Union Workhouse Infirmary for sick paupers by the contract butchers. Dr. Parkes testified on oath that the meat was beginning to decompose, was of very bad quality, and could not be used for beef tea or in any way for food. Mr. Shiel, the magistrate, examined the meat, some of which was turning green. He said it looked very nasty indeed, but as the matter stood he could not make an order, as there was a *legal difficulty, the meat not having been exposed for sale*; whereupon the workhouse officials took the meat away.

But this instance of Mr. Shiel and rotten meat pales into insignificance when compared with some of the High Court rulings. As recently as April, 1891, it was decided that the decision of a magistrate who had convicted a person of exposing diseased meat for sale was faulty, as the meat was merely *deposited* and not exposed by *hanging up*. In the face of such decisions as these, it is very evident that there is something wrong with the law. It is perfectly clear that the putter of rotten meat into "bags of mystery," and the canner of meat unfit for the food of man, can pursue his villainous course without fear of punishment, provided he knows the law. Is it not time that Mr. Asquith acted upon his statement of eighteen months ago? The facts we

have given show that the law is undeniably "in an unsatisfactory state," and we can assure Mr. Asquith "that legislation is necessary." Such legislation would offend no class save the slink meat vendor and the rascal who uses rotten meat for sausages, pies, etc., to the injury of sausage and pie makers who produce a healthy, honest article, to say nothing of the poisoning of the public, as shown in cases a short time ago in the Midlands, and this class are surely beyond any sympathy from any side of the House of Commons or the Lords.

SOME POINTS OF DIFFERENCE

BETWEEN

ENGLISH AND CONTINENTAL METHODS OF MUNICIPAL SANITARY ADMINISTRATION.

By T. M. LEGGE, M.D., Oxon. D.P.H.

I MUST ask your pardon if at the outset I beg to climb down from the somewhat ambitious title of this paper, and strictly limit my remarks to some differences I have found in the practice of public health work as I know it at home, and in six out of the eight capitals of northern Europe, namely Paris, Brussels, Berlin, Copenhagen, Stockholm, and Christiania. In doing this, I am conscious that at one stroke I dismiss the whole subject of rural hygiene, but as some compensation, not only will my remarks be all the shorter, but what is more important, I shall be able to leave all knowledge gained at second-hand behind me, and ask your attention only to such points as I have actually seen during visits paid to these capitals simply and solely to study public health questions. And I do not think that these differences could be studied better than in the places I have named. The cities, the peoples, their language, their manners and customs, differ very widely from one another, but they agree in this, that they are one and all imbued with the enthusiasm for sanitary progress, and seek to attain it with an energy and devotion that is only limited by the awkward obstacles that questions of finance oppose.

Let me ask you to dismiss from your minds at once the idea that we have nothing to learn from these capitals, or that the attainment of the state of bliss which we are supposed to enjoy in sanitary matters ought to be the sole object of their warmest endeavours. I venture to think that the reason of the rapid advance of this country in preventive medicine after the commencement of this century, is due to the isolated position of Great Britain, and the fact, therefore, that it has not constantly suffered from the fear of invasion. The sense of security thus gained allowed men to devote their minds to improving the condition of the towns and turned some of the superfluous wealth of the inhabitants into similar useful channels. Far otherwise has it been on the Continent. All the money nearly that could be levied was needed for purposes of national defence. The constant fear of invasion led to the walling in of many of the towns, and this in its turn to narrowing of the streets, increased height of the dwelling houses, and consequently a greater density of population over given areas has been the result, offering conditions more favourable to the spread of disease. The wonder is then not that they should have done so little, but that they have done so much.

THE HEALTH SERVICE.

In general, it may be said that what this country is chiefly envied for abroad is the independent position of the health service, and the laws dealing with public health matters, which have received the sanction of Parliament. In continental countries, with hardly an exception, there is no general Public Health Act, the points relating to this being dealt with by a multiplicity of police regulations, orders and decrees, some of which date back to almost prehistoric times. As a result, the different departments often overlap one another, and a state of things is produced which leads at times to

considerable friction. Worst of all, the general public is not aware of the powers that are placed in its hands. At the same time I hasten to say, that nowhere is public health work absolutely neglected, but it is trammelled by being the servant, not the co-equal, of the police.

As a rule, the Chief of Police is the final arbiter in sanitary matters. He has to advise him in the details connected with this work various commissions and councils of hygiene, the members of which are chosen by him for their knowledge of such matters; but their deliberations only take place at his suggestion. Their duties mainly relate to the measures necessary for the prevention of the spread of epidemic diseases.

France is the country the worst off as regards a sanitary service. The office in Paris most nearly approaching that of a M.O.H. is that filled by M. le Dr. A. J. Martin, under the title of *Inspecteur général de l'assainissement et de la salubrité de l'habitation*. I venture to think that great difficulties will be met with in France in the application of the new law as to compulsory notification of infectious diseases, from the fact that it has to be made by the practitioner, not to an expert on the subject, but to the mayor of the commune.

In Germany the condition of things is better, as there the different provinces are divided up into sub-districts, in each of which is a *Kreisphysikus*, who may very well be described as a M.O.H., his duties being to supervise the carrying out of sanitary matters by the police of the district.

But in Brussels and the three Scandinavian capitals for many years past—in fact for many more years than the appointment of medical officers of health dates from in this country—a very highly organised health service has existed. It matters not what its title is—whether it be, as in Christiania, the *Sundhedskommission*, under the direction of the *Stadsfysikus*, or city doctor, or in Stockholm, the *Helsövärdsmännen*, under the *Förste Stadsläkare*, or chief city doctor, or in Brussels, the *Bureau d'Hygiène*, under the *Médecin Inspector-en-Chef* (whose representative now, Dr. Janssens, may be regarded as the *doyen* of health officers in Europe)—they all, in the main, carry out the duties of a medical officer of health, combined with those of a police surgeon and public analyst. Take, for instance, the work done in connection with the Brussels office:—(1) Medical attendance of the police and other employés in the public service; (2) first aid to the injured; (3) regulation of prostitution; (4) medical superintendence of the schools; (5) house sanitation and inspection of building plans; (6) prophylactic measures against infectious disease; (7) vaccination; (8) analysis of water and foods; (9) supervision of dangerous occupations, theatres, lodging-houses, abattoirs, markets, epidemic and epizootic diseases; (10) certification of births and deaths, the certification of the insane; and (11) preparation of demographic statistics. To carry out these measures there are under the inspector-in-chief and his assistant at least twelve medical men, besides technical experts. This Brussels organisation has served as a model for not a few other towns on the Continent, as for instance, Havre, Lille, Nancy, etc.

NOTIFICATION OF INFECTIOUS DISEASE.

I do not think that I am far wrong in stating that it is by the measures dealing with the notifiable diseases that a M.O.H. has chiefly to justify his existence, and therefore, I shall refer first to the three points inseparable from a right treatment of them, namely, notification, disinfection, and isolation.

Brussels and the Scandinavian capitals must be regarded as the pioneers of compulsory notification. As long ago as 1824 this was enforced in the former, while in the latter it dates from about 1874. Paris has lagged behind, and only last year accepted the principle. So far as I can make out this country is the only one which pays for the information. In the continental capitals the forms are distributed gratuitously, but I am bound to say, however,

that notwithstanding this, the information which the practitioners give is much greater and more useful than that which is ordinarily to be found on the forms common with us. Here, for instance, is the post-card distributed in Christiania, requiring the following information:—Name, age, disease, place of employment or school, dwelling, date of onset, cause of illness (relation to infection or sanitary defects; in the case of puerperal fever the name of the midwife). Has the patient been removed to a hospital? Can he be sufficiently well treated at home? What are the measures adopted? and a space is left for any further remarks. In addition to this compulsory notification of infectious diseases, a monthly list of all the cases treated by the physicians has to be sent to the Health Office, and it is this notification of cases as well as deaths which makes the returns of these Scandinavian health offices such a mine of wealth to the statistician. In Copenhagen the list of epidemic diseases of which such a monthly return has to be made amounts to twenty-three, and includes, in addition to those notified in this country, influenza, varicella, rheumatic fever, croupous-pneumonia, bronchitis, broncho-pneumonia, tonsillitis, delirium tremens, and the venereal diseases. In Christiania, in addition to these, are pleurisy, gout, etc. I might say that in Christiania they have recently abolished the Contagious Diseases Act (for very much the same reasons that they have been abolished here and in our Colonies), which had worked very satisfactorily so far as holding the spread of venereal disease in check was concerned. To try and keep some hold over their spread under the altered circumstances they have made the notification of venereal diseases compulsory, but, as might be imagined, the results from this are by no means satisfactory. In Paris, according to the new law just passed, amongst the epidemic diseases to be compulsorily notified are sweating fever, dysentery, and ophthalmia neonatorum.

DISINFECTION.

Let me now say a word or two on the subject of house disinfection abroad, where they have, with the exception of Brussels, entirely given up the fetish of sulphur fumigation. In Paris the organisation of the *Service des Etuves Municipales* is a most elaborate one, and small points of details are attended to in a manner you will look for in vain in this country; and, indeed, let me say here that it is the minute attention to detail when once a principle is recognised as correct that strikes one most in continental sanitation.

(To be Continued.)

ADULTERATION PROSECUTIONS.

AIRDRIE.—In the Airdrie Sheriff Court—before Sheriff Mair—Mr. Dobson, sanitary inspector of Lanarkshire, brought prosecutions against eight Bellshill publicans for adding more water to the whisky they sold than was authorised by the Food and Drugs Act. The parties who pleaded guilty, were fined as follows:—Mrs Jane Lowe and Adam Lilly, 5s. and 20s. costs each; Alexander Hamilton, 7s. 6d. and 20s. costs; John Anderson, 7s. 6d. and 20s. costs; Mrs. Elizabeth Murray, 10s. and 20s. costs; James Brownlie and James Wotherspoon, 7s. 6d. and 20s. costs each. The Sheriff said that as these were the first offences, he had been lenient in the penalties, but warned the parties that repeated offences would not be so lightly dealt with.

DARTFORD.—Mrs. Horton, King's Head Inn, Dartford, was summoned by Police-superintendent George Webster for selling whisky and brandy which the certificate of the county analyst (Mr. M. A. Adams, of Maidstone) in the case of the whisky showed was 28·2 degrees under proof, or 3·2 below the legal standard, whilst the brandy was 28·61 under proof, or 3·61 below the legal standard.—Mr. Ridley submitted for the defence a point as to whether the bare certificate of the analyst was sufficient. There was no offence unless it could be proved that the spirits had been sold at less than 25 degrees under proof. He argued that by the old statute "added water" could not be regarded as a foreign constituent, because proof spirit in rough figures consisted of 50 per cent. of pure alcohol and 50 per cent. of water, so that it could not be foreign. There was nothing in the certificate to show whether the analyst knew what was the legal limit of proof spirit. It was for the

Justices to discover as to whether an offence had been committed. This was not within the province of the analyst.—Mr. Elgood said he thought the analyst was permitted to use the words "under proof" in his certificate.—Mr. Ridley said not, because it was a negative provision. The certificate did not disclose the case, 28 degrees under proof might not be wrong; neither had they the component parts of the sample. Having retired for about five minutes the magistrates, upon returning into Court, said they had decided to convict, and inflicted a fine of £1 in each case, making in all, with costs, £3 2s.; Mrs. Horton's license, however, was not endorsed.

DEWSBURY.—THE PERCENTAGE OF WATER IN BUTTER.—At the Dewsbury West Riding Court-house, William Henry Baguley, grocer, of Ravensthorpe, was fined £2 and costs for selling butter adulterated with 20 per cent. of added water. A case to be stated was asked for, but it was refused.

LEEDS.—On March 5 Mary Fawcett, Roundhay, was fined for selling milk to Inspector Walker, which the city analyst certified to contain eight and ten per cent. of added water respectively. On December 20 1892, the defendant was charged with committing two similar offences, and was fined £2 in each case. Alderman Cooke said that as the previous penalty had been without apparent effect a fine of £5 and costs in each case would be now imposed.

MANSFIELD.—SEIDLITZ POWDERS.—John Stanley, chemist, Outram-st., Sutton-in-Ashfield, was summoned for having sold seidlitz powders under weight. Colonel Storey said they were sent to the analyst, whose analysis showed that the powders were deficient in weight, the blue papers containing 133·2 grains, and the white 36·8 grains, instead of 160 and 38 grains respectively. The composition of the packets was correct. Mr. C. F. Elliot Smith said the powders were supplied by Messrs. Oldham and Patterson, a well-known Manchester firm. Mr. Crossley, traveller to the firm named, said the powders were composed according to the British Pharmacopœia. The discrepancies might be due to the atmosphere. The value of the powder was a sixth of a penny, and as there was a sixth of the powder short the actual gain to the manufacturer was not more than a thirty-sixth of a penny. Dr. Littlewood corroborated the last witness as to the probability of the atmosphere affecting the weight. Defendant was ordered to pay the costs, 25s., and the chairman recommended the firm who prepared the powders to be more careful in future in making them up.

NEWINGTON.—At Lambeth, on February 27, Henry Halle, a provision dealer, of Walworth-road, was summoned by Inspector Bush, on behalf of the Newington Vestry, for selling butter not of the nature, substance, and quality demanded by the purchaser.—Mr. Geo. Elliott appeared for the defendant.—A boy, in the employ of the Inspector, entered the shop and purchased half a pound of shilling butter. Upon being analysed, the sample was found to contain 50 per cent. of margarine.—For the defence, the defendant's assistant explained that both butter and margarine were kept on the same slab, and said he must have served the boy with some margarine by mistake.—Mr. Hoskins fined the defendant 40s. and costs.—The following fines were inflicted upon milk sellers: Mary Wheeler, Lebanon-street, Walworth, selling milk containing 18 per cent. of added water. Fined 20s. and costs.—Henry Haine, Thurlow-street, selling milk containing 22 per cent. of added water. Fined 40s. and costs.—Charles Vincent, Westmoreland-road, selling milk containing 17 per cent. of added water. Fined 10s. and costs.—Arthur Herring, St. Mark's-road, selling milk containing 16 per cent. of added water. Fined 20s. and costs.—Henry Wren, Munton-road, selling milk containing 18 per cent. of added water. Fined 10s. and costs.—Matilda Dand, Eltham-street, Walworth, selling milk containing 20 per cent. of added water. Fined 10s. and costs.—Wm. Martin, Cornbury-street, Old Kent-road, selling milk devoid of 50 per cent. of fat. Fined 30s. and costs.—Geo. Allen, Henshaw-street, selling milk devoid of its natural cream and containing added water. Fined 10s. and costs.—Richard James, Orb-street, selling milk containing 25 per cent. of added water. Fined £4 and costs.

PAISLEY.—WHISKY THIRTY-SIX DEGREES UNDER PROOF.—In Paisley Sheriff Court on February 26th Alexander Munro, spirit dealer, Well Meadow-street, Paisley, was fined £2, including expenses, for selling to an Assistant Sanitary Inspector a mutchkin of whisky which was 36 degrees under proof. It contained 11 per cent. of water beyond the quantity allowed by the Act. It was pleaded by the respondent that he put water into the cask to keep it from shrinking.

SMETHWICK.—Margarine as Butter.—At Smethwick, on September 27, Robert Tetham Bill, grocer, Rolfe-street, Smethwick, was fined £5 and £1 10s. costs for selling margarine as butter, and further under the Margarine Act for not placing a label upon the article.

WORKSOP.—At Worksop Police-court, Geo. Warburton, landlord of the Priors Well Inn, Worksop, was charged by Inspector Garforth with selling whisky which had more water in it than allowed by the Act. The analysis showed 4·2 of added water beyond the allowed 25. Defendant said the whisky was of the right strength when it was put in the keg. It was nearly empty when the whisky was bought. Fined 30s., including costs.—Ruth Haydock, of the Travellers' Rest, Worksop, was similarly charged. The analysis showed the whisky was 28·0 under proof. Defendant said she had only added the quantity allowed. Fined 30s., including costs.—Samuel Hinchcliffe, landlord of the Gas Tavern, Worksop, was charged with a like offence. The analysis in this case showed three several parts of water too much. Fined 30s., including costs.

THE SALE OF "LE DANSK" AND THE IRISH BUTTER TRADE.

We have a word of advice to offer to the Irish Butter Association, or whatever name the body is called that has, during the past week, brought a number of prosecutions against traders selling *Le Dansk*. *Fiascos*, such as those at Clerkenwell, only bring the work of the association into contempt, and whoever is responsible for the institution of such prosecutions must know little of the Margarine Act and less of common sense. The manufacturers of "*Le Dansk*" have been scrupulously careful to sell that article ever for what it is—margarine of the highest class, specially prepared by their patent process. They at no time sought to sell, or sold, it as butter, but have claimed that their "*Le Dansk*" was equal, if not superior, to the finest Danish or Irish butters, whilst it costs the purchaser much less money. Our own analyses proved it to contain far less water, a higher percentage of fat, and to be equal in every respect to the best creamery butters, whilst it was cheaper and better value. The way to compete with such an article is to produce something better, and not, by a series of silly prosecutions against "*Le Dansk's*" agents, to seek to intimidate traders into ceasing to sell it. What the Butter Protection Association should start at is the suppression of the excess water in butter fraud, the need for proper sanitation in Irish and English creameries, and the suppression of the sale of margarine as butter. The *Health Record* a few months ago had some significant revelations as to the conditions of Irish creameries which, from a public health point of view, are very much in favour of articles prepared as "*Le Dansk*" is—under the most perfect sanitary conditions. Said the *Health Record* :—

"One outbreak after another of typhoid fever seems to be following in the wake of the new creameries. These institutions have been hailed by many, and justly so, as one of the best schemes for the improvement of Irish farming which has been introduced of recent years. The conditions of Irish agricultural tenure—we do not mean in a political sense—are such that it has long been felt that nothing could be of such advantage to the Irish farmer, or better enable him to meet successfully the competition of other parts of the world, than the adoption in some form or another of the principle of co-operation. It was inevitable that if the producers of cream and butter in Ireland were to keep abreast of the times, and obtain the best price in the market, it could only be by discontinuing home manufacture by unskilled or, at any rate, rule-of-thumb and haphazard workers, with the most imperfect appliances, in favour of the skill, machinery, and capital, only to be obtained in a large establishment. In the case of milk, however, which affords such an admirable culture medium for bacteria, it is obvious that the combination of a number of separate samples in bulk constitutes a special danger, because with the marvellously rapid growth of these organisms, a single sample of infected milk, however small, infects the whole mass, and should the separated milk be, as is generally the case, distributed, it may spread disease through a whole neighbourhood. We fear it must be admitted that the comparatively low standard of education, and perhaps also the natural happy carelessness of the Irish peasant, largely contribute to the chances of infection of the milk supply to a creamery. To shut up the creameries and go back to the old clumsy system of butter-making would be a decidedly retrograde step, not to be thought of till all other means have failed. What we have to look to is rather the most careful supervision, and a rigid inspection of every farm, and especially of their water supplies, and also the adoption of the compulsory notification of disease. It is gratifying to learn, from the reports that reach us, that the medical officers of health, and especially the Local Government Board inspectors, are alive to the necessities of the case, and it is to be hoped that the various Boards of Guardians will strengthen the hands of their officers, as well as co-operate with the central authority in dealing with so important a question. Nothing would be so ruinous to the Irish butter trade, and through it to Irish agriculture generally, as that it should once get widely suspected throughout England that the Irish creameries were spreading disease and death all around them."

The dangers to which our contemporary directs attention are by no means confined to Ireland; for, with all our advances in sanitation, there are districts in England from which milk is drawn for town supplies where impure water, filth, and all that makes for disease, are regarded as matters of course. It is surprising that such conditions should continue when science has placed a cheap medium at the disposal of the farmer for securing water entirely free from germs. There is no farm in which it would not be possible to fit up either a Berkefeld pump filter, or one suitable for a creamery; and however impure the water may be before filtration, the creamery proprietor might rest assured that no disease germs could be communicated to his butter or milk if only water for washing, etc., were used that had been through a Berkefeld filter. But along with the extension of the creamery system in Ireland and England teaching in sanitation is required. Creamery extension will do a great deal for Ireland if it is carried out on enlightened sanitary lines. If not, it is doomed to failure.

It is not by garbled and untrue reports such as appeared in *The Standard* of March 5 that the good repute or status of Irish or English butter can be enhanced.

Mr. Bros, in dismissing the summonses at Clerkenwell on March 4, said "he was of opinion that the '*Le Dansk*' was not exposed for sale, and in regard to the second point he was of opinion that the boxes were so marked as to comply with the Margarine Act."

The Standard, in its report, wrong in particular upon particular, crowned its inaccuracies by very unfairly misstating Mr. Bros's decision. The word "*not*" was suppressed, and Mr. Bros was reported to have given a decision exactly contrary to that arrived at, viz: to have found that "*Le Dansk*" was exposed for sale." Such reports in the press are disgraceful to the journal publishing them and to whoever secured their insertion.

ADULTERATION OF COMMERCIAL PEPTONES.

L. HUGOUNENQ, in the examination of some samples of commercial peptone, found two which reduced Fehling's solution, and on further examination proved to contain about 33 per cent. of milk sugar. One of these samples bore the name of a firm of good repute, while the other emanated from a less known source. That the sugar present was lactose was confirmed by the examination of the osazone prepared from it. The total nitrogen of one of the samples amounted to 8.34 per cent., while a good sample of unadulterated peptone yielded 12.72 per cent. (*Journ. de Pharm.* [6], 1, 178).

THE BRIDGEND MILK CASE.

At the last meeting of the Local Government Committee of the Glamorgan County Council Mr. O. H. Jones drew attention to a case of supposed milk adulteration which occurred at Bridgend. He pointed out that a sample of the milk had been sent to the public analyst, who reported that it was adulterated to the extent of 20 per cent. The milkseller stated that the milk in question had not been tampered with, and the inspector took a sample direct from the cow. This was sent to the county analyst, who reported that either the milk had been skimmed or else skimmed milk had been added to it. This circumstance, Mr. Jones pointed out, showed that in certain cases adulteration was merely poor milk, and not any illegal addition to it. Councillor Hughes said such cases might have a very injurious effect upon a milkseller's reputation, and he moved that the county analyst be communicated with asking for an explanation, and whether it was not possible for him to devise some means of detecting the difference between poor milk and adulterated milk. The motion was agreed to.

THE SANITAS DISINFECTANTS.

The eighteenth annual meeting of the Sanitas Company, Limited, was held at their works at Bethnal Green, on the 26th ult. After writing off the sum of £1,875 to depreciation account, a final dividend of 5 per cent. and a bonus of 3½ per cent. were declared, making the total distribution for the past year 13½ per cent. Attention was called to Kingzett's Patent "*Sulphugators*"—an ingenious, simple invention—which afford an easy and effective means of destroying insect life and disinfecting small spaces such as stables, kennels, and poultry houses. They are put up in one shilling boxes of 4 and 12 (according to size), and consist of rolls of inflammable material coated with sulphur, ready for burning in a small cage which is specially provided for that purpose. Reference was also made to another preparation newly placed on the market, viz., "*Sanitas*" shaving sticks, and to "*Sanitas*" eucalyptus soap, which is about to be brought out.

In course of some remarks made by Mr. C. T. Kingsett, F.I.C., F.C.S., the managing director, he alluded to some public advertisements of coal tar disinfectants as non-poisonous, the fact being that many, if not all of them, contain a large percentage of the poisonous carbolic and cresylic acids. He had not only analysed some of these articles himself, but had also procured analyses at the hands of independent analysts, and the facts were as stated. He contended that the "*Sanitas*" disinfectants are the only really non-poisonous and effective preparations otherwise qualified for general public employment.

FOOD ANALYSIS IN THE CITY OF LONDON.

DR. SEDGWICK SAUNDERS, the Public Analyst for the City, has presented to the City Commission of Sewers his report on his duties during last year. No change, he states, has taken place in the law regulating the operations of "*The Sale of Foods and Drugs Acts*," and the same anomaly in their administration exists. During last session a Select Committee of the House of Commons was engaged in taking evidence upon the general question of adulteration. It was to be hoped that the result of their labours would be to embody the recommendations of the public analysts and other experts throughout the kingdom, and that some attempt would be made to fix "*standards*" for the guidance of analysts generally. Another point of equal importance was that some limitation should be imposed upon the discretion of the magistrates before whom prosecutions were initiated, with a view of avoiding in the future discordant decisions upon evidence which seemed to an ordinary layman of equal merit—decisions which brought the administration of justice into contempt. He would emphasise that point by again advertent to the remarkable differences that existed in the penalties imposed for offences against the Excise authorities as compared with the insignificant and trumpery fines imposed on milkmen and small general traders who were convicted of deliberate and fraudulent sophistication of their goods. It was a common experience that a publican might be fined £50 for adding half the quantity of water to his beer that a dairyman would add to his milk, at the cost, perhaps, of a shilling fine. In the City 161 analyses were made in 1894, exclusive of frequent examinations of the City water supply and the chemicals required in the laboratory. They included—of brandy 7, butter 1, cocoa 4, coffee 1, disinfectants 25, gin 17, milk 57, mineral waters 2, mustard 9, pepper 10, rum 14,

wall-paper 1, and whisky 13. No prosecution had been instituted, although some of the articles examined had been perilously near adulteration. For instance, in the 57 milks examined several had been found below the standard of every analyst in the kingdom, except those who directed the chemical work at Somerset House, who still refused to adopt the standard fixed by the Society of Public Analysts. On the whole, the articles supplied by retail traders throughout the City were fairly genuine.

DR. BERNARD DYER AND SOMERSET HOUSE.

THE last victim of Somerset House chemists' ignorance and incapacity is Dr. Dyer, public analyst for Truro, and he has our sincere sympathy, for the reasons disclosed in the trenchant exposure of the methods of Somerset House analysis which Mr. Otto Hehner contributed to our last issue. It is especially hard on Dr. Dyer that he should be their victim, because he has been one of their very few apologists. His explanation to the Truro City Council, which we here print, is a true one, and it is a gross analytical scandal that the Somerset House chemists' want of scientific capacity should have rendered it necessary. It should, however, teach Dr. Dyer a lesson. There are too many public analysts who feel inclined to say with Shakespeare, "Let the galled jade wince, our withers are unwrung." Time has shown that every harsh expression and every unanswerable exposure we have made of the Somerset House referees' incompetence have been justified, and were for the public benefit. With these remarks we introduce Dr. Dyer in the unaccustomed rôle of a Somerset House attacker.

The following letter has been sent to the Truro City Council by Dr. Bernard Dyer:—

"First, I would observe, as a personal matter, that I have been analysing butter constantly for the last 23 years, and that this is the first occasion on which the accuracy of one of my certificates has been impugned. With regard to the certificate of Mr. C. E. Bean, I would direct attention to Mr. Bean's own statement in that certificate, that the sample 'was rancid, mouldy, and permeated with bacterial growths, which would interfere with the analysis.' Mr. Bean appears to have examined the sample only in one particular way, and merely states that the figure obtained was 'low, but well within the limits of genuine butter of several authorities.' It will be observed that Mr. Bean distinctly refrains from expressing any opinion that the sample was genuine, but only states that in one particular respect it falls, as he considers, within the possible limits of genuine butter, after, however, having expressed the opinion that its condition would interfere with the result of the analysis. With regard to the certificate of the Government chemist, that certificate also contains the statement that the butter had become rancid and decomposed, and further, 'that from a consideration of all the analytical results obtained, they are of opinion that the butter does not afford evidence of the addition of foreign fat.' Here again I would ask the Authority to note that the analysts carefully refrain from any expression of opinion that the butter is genuine, and I would also point out that one of the gentlemen signing the certificate, viz., Mr. Bannister, recently stated before the Select Committee of the House of Commons, on food adulteration, that there was very great difficulty in the analysis of butter, because, by keeping, the percentages were changed, and that it followed that, if he got a fresh butter to which margarine in certain limits had been added, the result would be the same as the examination of old butter that was genuine. The Government certificate simply, therefore, amounts to a verdict of 'not proven,' which must be read in conjunction with the statement that I have just quoted made by Mr. Bannister himself to the Parliamentary Committee. My sample was examined while in a fresh condition. Although completely satisfied with the opinion expressed in my own certificate, based on the results of the analysis of the fresh and undecomposed butter, I have since handed the remainder of my samples to Mr. E. J. Bevan, the county analyst for Middlesex, who is one of the most eminent and experienced analysts in the country, and who, in the

course of his official duties, examines many hundreds of samples of butter yearly. His certificate, which I append, states that he has 'examined the sample by all the recognised methods, and that he has no hesitation in saying that it is adulterated.'"

The committee recommended to Truro Town Council that Dr. Dyer's explanation be accepted, and having regard to all the circumstances of the case that he be absolved from blame. The mayor said the council and the magistrates were placed in an unfortunate position owing to the lamentable differences among the analysts. The matter should not be allowed to rest where it was. Mr. Blenkinsop said they would be constituting themselves partisans if they accepted the recommendation of the committee without hearing what the Somerset House authorities had to say, and moved that Dr. Dyer's letter be sent to the Government analysts. Mr. James seconded; carried. Mr. Whitworth said this would, perhaps, bring to a head the complaint by the Society of Analysts that the analytical department at Somerset House was inefficient, its methods old-fashioned, and that it was not properly equipped for making analysis.

HOW DISEASE IS SPREAD.

AT Bow-street Police court on February 26th, William Taylor, a typewriter, living at No. 74, Chancery-lane, appeared to a summons charging him with wilfully exposing his domestic servant in a public thoroughfare whilst suffering from a dangerous infectious disease, without taking proper precautions against spreading the disease. Dr. Allan, medical officer for the Strand District, explained that the proceedings were taken under the Public Health (London) Act, section 68. It appeared that two of the defendant's children took scarlet fever, and he sent the rest of his family and a servant girl to Kilburn. The servant was taken ill, and the defendant took her to a doctor, who said she ought to be removed to a fever hospital. The defendant telegraphed to the Asylums Board to send an ambulance to remove a case of scarlet fever from 74, Chancery-lane. He walked with the young woman from Kilburn to Chancery-lane, but they did not arrive there at the appointed time, and found the ambulance had been taken back to the ambulance station. The defendant then took the girl to the Asylums Board Offices, Norfolk House, Norfolk-street, and was directed to take her back to Chancery-lane. The ambulance was sent there a second time, and the girl was removed to the fever hospital at Stockwell. Evidence in support of this statement was called, but it was stated that the certificate given by the doctor called in by the defendant was to the effect that the girl simply showed symptoms of approaching scarlet fever. The defendant said he acted conscientiously, and did what he deemed best in the matter. Although the girl was at the time in question only suffering from a slight sore throat, he did not like to put her into a public vehicle, and had done the best he could to avoid infection. Mr. Vaughan thought the defendant ought to have sent from Kilburn for an ambulance, as the girl was there when she was taken ill. At the same time he believed he had acted conscientiously in the matter. He was liable to a fine of £5, but under the circumstances he would mitigate the penalty to 40s. and costs.

THE COCOA ADMIRAL.

IN the House of Commons on February 28, Admiral Field asked the Home Secretary whether his attention has been called to the conviction of a grocer at the Westminster Police court for selling so-called adulterated cocoa at 1s. per lb., which was alleged to be composed of 50 per cent. of cocoa, and 50 per cent. of starch and sugar. The Home Secretary said he had inquired into the case, and ascertained that the offence for which the defendant was fined was for selling an article not of the nature or quality demanded by the purchaser. The purchaser asked for cocoa, and not soluble cocoa, and in the opinion of the magistrate, from which he had no reason to differ, he was entitled to cocoa.

THE PASTEUR GERM FILTER.

The Pasteur Filter prevents the passage of microbes of any kind, is difficult to break and easy to clear, and is effectual in preventing epidemics of cholera, typhoid fever, diarrhoea, and similar diseases.

THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Made in a variety of Patterns for Industrial and Domestic Purposes.

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Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value, in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—"The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water."

CASSIA ADULTERATION.—AN. IMPORTANT DECISION.

AT Lanchester Petty Sessions, on February 21, the Co-operative Wholesale Society, Newcastle, were summoned, under section 25 of the Food and Drugs Act, 1875, charged with selling cassia, which was found to be adulterated. Mr. Ralph Simey, clerk to the County Council, appeared to prosecute, while Mr. Thcs. Lambert (Gateshead), defended. Mr. Simey, on opening the case, said that on December 5 the defendants sent to the Anfield Plain Co-operative Stores (Medomsley Branch) a parcel containing 8lbs. of cassia, which had been previously ordered by Mr. A. Brown, the manager, and on the invoice it was printed in red ink that the goods were warranted. On December 7, John William Wilson, an assistant to Mr. James Laidlaw, purchased four ounces of brown cassia, and on a sample being submitted to Mr. W. F. K. Stock, of Darlington, the county analyst, he certified that the mixture contained foreign matter, apparently ground ginger, which amounted to no less than 5 per cent. of the entire sample. Proceedings were instituted against Medomsley branch, but as they produced the warranty from the Co-operative Wholesale Society, the case was adjourned pending the trial of this action. He (Mr. Simey) had received from the present defendants a warranty which they had received from a London firm, but he held that that was not sufficient under the Act of Parliament, inasmuch as one or two important points had not been complied with. However, he (Mr. Simey) did not rely on any technical objection.—Evidence was then called, and Mr. W. F. K. Stock, in cross-examination, stated that he was fairly certain, though he might not be absolutely certain, that the adulterant was ginger. Replying to the Bench, Mr. Stock said he had come across samples of pure cassia.—Mr. Lambert, for the defence, remarked that his clients endeavoured to get the best and purest article put upon the market, at the best price, and, therefore, they welcomed a prosecution of this sort. This was a very important prosecution, inasmuch as the quantity of cassia, in bulk, from which these packages were obtained, lying in the London docks, represented a total value of £100,000. He raised two technical points. The officials of the County Council should prove their appointments. It was not sufficient, he maintained, for these persons to go into the witness-box and say that they were food and drug inspectors, analysts, and so forth. Mr. Simey hoped that Mr. Lambert was not submitting that point with all seriousness, because the position of the county officials had never been challenged during the past six years. Mr. Lambert (proceeding) stated that he relied upon Section 25 of the Act in answer to this case. He proposed to call evidence to prove that the Wholesale Society purchased these samples of cassia direct from the importers, who obtained it from China in bales. They were put into bond in London, and were sold to wholesale societies and firms throughout the country as "guaranteed genuine." Mr. Simey did not consider this to be a warranty within the meaning of the Act. Mr. Lambert submitted that their warranty was a better one than the warranty given by the importers. What better warranty could they have for an article than that it was "guaranteed genuine." If the Bench were against him on the points named, then he based his defence on the clause of the Act, which was framed by the legislature in such cases—where it is found that the article or drug is inadvertently mixed with extraneous matter in the process of collection or preparation then an offence shall not be deemed to have been committed. Robert Wilkinson, manager of the grocery department of the Co-operative Wholesale Society, said they had a written warranty for all their articles. Mr. Alfred James De Hailes, F.I.C., &c., London, said he analysed the third sample of cassia, and discovered therein a small percentage of vegetable matter. He could not tell the exact percentage, as there were no possible means of definitely ascertaining the precise quantity. It might be ginger or vegetable matter, but he considered it impossible for anyone to swear that it was ginger. Cross-questioned by Mr. Simey, he told the merchants that he thought the article was not genuine, and they declared that they sold the cassia just as they received it from China. Witness accordingly went down to the docks, and obtained half-a-dozen handfuls of the "cassia" picked out of packets at random, and he found the starch granules and woody fibre therein, in the same way as he discovered it in the prepared ground article. After Mr. Simey had replied on the legal facts submitted by Mr. Lambert, the justices retired, and on re-appear-

ing, the chairman (Col. Leadbitter Smith) said that the majority of the magistrates were of opinion that the case should be dismissed, each side to pay their own costs. In reply to Mr. Simey, the chairman intimated that the case was not dismissed on a point of law.

THE FAT OF WOMEN'S MILK.

LAVES finds (*Zeit. f. physiol. Chem.* xix.) that the fat of women's milk is very poor in volatile acids and those soluble in water, but contains a large amount of acids belonging to the unsaturated series. The volatile portion is composed largely of caproic, caprylic, and caprinic acids; the non-volatile, insoluble portion, of palmitic, stearic, and oleic acids, besides which are one or more acids of a lower molecular weight, including, perhaps, myristinic acid. The melting point of the fatty acids is 37 deg. to 39 deg. C.; the melting point of the fat itself, 30 deg. to 31 deg. C. The chemical composition is thus quite different from that of cow's milk.

WREXHAM.—THE DRAINAGE AT RUABON.

THE chairman moved the appointment of a parochial committee for the parish of Ruabon, and the delegation to such committee of certain powers of the council with respect to the removal of sewage from the Bryn, and power to formulate a scheme for the effectual drainage of Ruabon village, including provisional arrangements for the acquisition of an outfall, and the preparation of a plan of the intended line of sewer to such outfall, and that the committee submit such scheme, when completed, to the council for approval. Sir Watkin Williams Wynn seconded the proposition, which was agreed to after a long discussion.

SANITARY ITEMS.

THE SANITARY INSTITUTE.—A sessional meeting of the institute will be held at the Parkes Museum, on Wednesday, March 13th, at 8 p.m., when a discussion will be opened on "Back-to-Back Houses," by James Niven, M.B., M.A., Medical Officer of Health, Manchester, with illustrations of various types of back-to-back houses met with in practice, and the methods adopted for dealing with this class of property, by Thomas De Courcy Meade, M.Inst.C.E., City Surveyor, Manchester. The chair will be taken by Sir Francis Sharp Powell, Bart., M.P. (vice-president).

DUKINFIELD.—A couple of years ago the sanitary inspector's salary was reduced £10 per year under circumstances of a regrettable character; but we are pleased to say that reparation has come at last, and the advance of £10 per annum was carried by the casting vote of the very member who was chiefly instrumental in giving the inspector the Irishman's rise.

DOVER.—With respect to the unfortunate matter of the late surveyor, the motion to pay him a gratuity of £250 has been adjourned for a month, and meanwhile the town clerk has reported that on fresh investigation he has found "irregularities" to the extent of £103 2s. 6d. Thus, so far, Councillors Bradley and Chitty's action has been sustained.

THE FUTURE DEVELOPMENT OF PLUMBING.—Mr. Peter Fyfe, chief sanitary inspector of Glasgow, in a lecture on "The Plumber, his present position and future prospects," gave a description of the steam-heating system in New York, where the charge for heating 1,000 cubic feet of space during 182 days of the cold season was 9s. 6d. In this country the system could be worked supplying the heat at two-thirds less price. At present the cost of heating a single apartment by coal in an open fire was £1 9s. 1d. It was time for capitalists and municipal authorities to look at this great question of central steam stations, both for sanitary and financial reasons.

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APPOINTMENTS VACANT.

SANITARY INSPECTORS (South Westmoreland Rural District Council), March 15.—Three Sanitary Inspectors are required, one for Gragrigg District, one for Milnthorpe, and one for Lonsdale at salaries of £100 to £110 per annum. Applications in the handwriting of candidates, accompanied by recent testimonials as to fitness for office, not exceeding five in number, and containing particulars as to past and present employment, must be in my hands on or before the 15th day of March, 1895. By order of the council, Alexander Milne, clerk, Kendal.

SURVEYOR OF HIGHWAYS (Carlisle), March 11.—The Carlisle Rural District Council invite applications for this Office. There are about 205 miles of district roads to superintend and maintain. The salary, which is in every respect inclusive, will be £100 a year. The appointment will be from year to year, terminable at any time by three months' notice. Applications (marked Highway Surveyor) in applicant's own handwriting, giving full particulars of age and present and previous occupations, and accompanied by not more than three testimonials of recent date, must be received at my office not later than noon on Monday, 11th March next. Personal canvassing of the Councillors is strictly prohibited. H. B. Lonsdale, clerk, 25, Lowther-street, Carlisle, 25th February, 1895.

SURVEYOR OF HIGHWAYS (Chailey).—The Chailey Rural District Council invite applications for the post of Surveyor of Highways for their district. The salary attached to

the appointment is £90 a year, to include all travelling and other expenses, except books, stationery, and postage. Next December the officer holding the position will be required to act as Inspector of Nuisances, and of dairies, cowsheds, &c., for the district, at an additional salary of £60 per annum.

SURVEYOR OF HIGHWAYS, March 11.—The Stratford-on-Avon Rural District Council will, at their meeting, to be held on Friday, the 15th inst., proceed to the appointment of a Surveyor of Highways. The salary (which is in every respect inclusive) will be £150 per annum, and the surveyor will be required to devote the whole of his time to his duties, to provide himself with means of locomotion, and to reside in or near Stratford-on-Avon. The person appointed must be fully competent to perform his duties, to keep the accounts prescribed by the Local Government Board, and generally to comply with and abide by the instructions of the Council. He will be required to enter upon his duties on the 26th inst., and to find a guarantee in the sum of £200 for the faithful discharge of his duties. Applications, marked "Highway Surveyor," in candidate's own handwriting, stating age, previous occupation, and accompanied by copies of not more than three testimonials of recent date, must be sent to me not later than Monday, the 11th inst. The appointment will be made subject (if necessary) to the approval of the Local Government Board. Canvassing members of the Council, either directly or indirectly, will be deemed a disqualification. Selected candidates will receive a notice to attend, and be allowed third-class railway fare only. By order. John Charles Warden, clerk of the Council, 9, Guild-street, Stratford-on-Avon.

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Food and Sanitation.

SATURDAY, MARCH 16TH, 1895.

FACTS ABOUT EXTRACTS OF MEAT.—II.

The Times has not of late distinguished itself by originality, or the publication of anything sensational, save on the one occasion of its collaboration with Mr.

Pigott in the Parnell fiasco. We do not know who has caused the journal to publish as news the sensational details of last week upon American canned meat, but *The Times* has been as ignorantly deluded as it was in the Parnell case. Our exposures of the meat extract and canned meat trade were on real grounds, and showed graver dangers than are rechauffed in *The Times'* sensation. We proved, for example, that the highest-priced American meat extract preparation upon the market, viz., Valentine's Meat Juice—which is still largely prescribed by medical men—was a nostrum, our analysis disclosing the fact that it contained only a total of 0.93 of albumenoids, for which the astonishing price of 4s. 6d. per bottle, holding about three ounces of fluid, practically worthless, is obtained from the public. But how much does the average man or woman know of this question of whether to use meat extracts or to leave them severely alone? As a food, such preparations as Valentine's, for example, are beneath contempt, for they contain practically no nutriment. If they were made from the finest selected beef, they would be equally valueless as foods. Meat extracts, however, are different from Valentine's Meat Juice, being excellent as flavourers. This is a point we have again and again emphasised. The true place for the meat extract is in the kitchen, where it is of real advantage in cookery; if given as a stimulant, but not as food, or employed in soups, its use should be encouraged. A pure meat extract, well prepared in a cleanly manner, is, however, difficult to obtain. We have analysed several of those sold to the public under the name of Liebig's Extract of Meat, and the same sickening odour, objectionably excrementitious, emanated from all save two. The only samples we found devoid of this, and which we personally cared to use as a stimulant or for culinary purposes, were the Liebig Company's Extract of Meat, made at Fray Bentos, South America, and the Bovril Company's Liebig's Extract of Meat, made in South America and Australia.

The Times says that the disgusting material it refers to "finds its way upon the market under the guise of a name which was well known before the Chicago meat trade came into existence." This is, as we pointed out long ago, unfortunately the case. The excrementitious smelling extracts we refer to were labelled

“Liebig's Extract of Meat,” in imitation of the original Liebig's Extract.

The Times' sensation is calculated to scare the public from honestly-made extracts as well as from the filthy ones, and if its correspondent had studied our articles on this question more intelligently, his sensation might have been of some public usefulness. As it is, the rubbish about dead rats, etc., is so manifestly a concoction, and the revolting details so evidently evolved from the inner consciousness of *The Times'* scribe, that they can only inspire those who know the conditions of meat extract manufacture with contempt. *The Times'* agricultural writer would be more honestly employed if he wrote of the faulty methods of inspection of meat in the United Kingdom, and of the ease, as we showed last week, with which rotten meat is palmed off on the public in a myriad of forms in sausages, pies, etc., and how the rascals practising the filthy trade can snap their fingers at the law, inasmuch as they are subjected to practically no inspection. The composition of native “bags of mystery” would be found, were the truth told, more revolting than any of *The Times'* “Diseased Meat” inventions.

SOME POINTS OF DIFFERENCE

BETWEEN

ENGLISH AND CONTINENTAL METHODS OF MUNICIPAL SANITARY ADMINISTRATION.

By T. M. LEGGE, M.D., Oxon. D.P.H.

(Continued from page 75)

Seeing that at the time this service was organised in 1888 by Dr. A. J. Martin, there was absolutely no power for compulsory disinfection, and as the suggestion to the inhabitants of infected houses that they should turn out of them for twenty-four hours, while sulphur fumigation and the stripping of the walls was carried out, would probably have caused a revolution, the disinfectors offered instead to remove gratuitously all infected material, and to submit them to steam under pressure, while the walls, floor, and such articles as could not be removed should be disinfected by the action of a spray of corrosive sublimate, the whole operation not lasting more than an hour. When I accompanied the disinfectors I was much pleased with the ease and facility with which this method of spraying, by means of the so-called “pulvérisateurs” containing corrosive sublimate 1 per 1,000, was carried out. As a fear has been expressed that the use of corrosive sublimate may be attended with danger to the disinfectors, and to the occupants of rooms disinfected by its means, I wrote to Dr. Martin, asking whether any bad effects had followed its use in Paris. His reply [is to the effect that he has never seen any, although, in 1893 35,000, and this year, already, 40,000 disinfecting operations have been carried out. In Berlin, for everything that can be removed, such as carpets, bed-linen, mattresses, clothes, etc., the same method of steam disinfection is carried out at the handsome station in the Reichemberger Strasse. But in house disinfection, as they are afraid of using of mercury perchloride, they have adopted the method of rubbing the walls with bread. Subsequently they souse them with carbolic acid, 2½ or 5 per cent., and at the same time wash the floors and furniture with the same acid. The way in which the walls are cleaned is very striking, and the experiments of Von Esmarck in the *Zeitschrift für Hygiene* show that the bacteria are removed better by this method than by any other. Still it is tedious, exhausting for the workmen, and their existence in an atmosphere reeking with carbolic acid by no means adds to their health or happiness.

All the men in these continental disinfecting stations wear special canvas or linen suits, and at Paris I noticed one small point of detail which I think worthy of mention, namely, that the special clothes worn by the undertakers' men in cases where death was due to infectious diseases

were all returned to the station for steam disinfection. The men employed as disinfectors undergo a special training for the work. Those who deal with the infected material do not come into contact with those on the disinfected side, the separation between the two parties being an absolute one, and not the desultory thing it is in disinfecting stations that I have seen in London and elsewhere. There is a point I should like to mention with regard to disinfection in Denmark. Even small villages have disinfectors there, because a cheap and effective machine is on the market, that of A. B. Reck, of Copenhagen, who is trying to introduce his patent into England, where it is a lamentable fact that in country districts a disinfecting machine is about the last thing that you need expect to find. The reason of this is, very largely, not so much inaction on the part of the sanitary authority as inability to pay the large sum that is demanded for a good disinfecting machine. Sixty-eight pounds will purchase, with boiler and fittings, a very serviceable Reck's disinfecter. Attention is sometimes drawn in this country to the absence of or very inadequate accommodation provided for the housing of the people who have to leave their rooms during such time as the disinfection of them takes. Ample provision is made for this in Christiania, Stockholm, and Brussels. Perhaps it is best arranged in Stockholm. There the house adjoining the station for disinfection is divided into two portions, one for paying patients, the other for the poor. This building, or one similarly arranged, can serve as quarantine quarters for a family, one member of which, say, has suffered from small-pox.

ISOLATION HOSPITAL ACCOMMODATION.

In order to reap the fullest benefit from the compulsory notification of infectious disease by the provision of isolation hospital accommodation, London can pride itself on the fact of having out-distanced every other city. Nowhere are there such facilities for the transport of those suffering from scarlet fever, diphtheria, or small-pox to hospitals, as are proffered by the organisation of the Metropolitan Asylums Board. But by this I do not mean to say that a good deal has not been done in some of the capitals I have named, in fact, I am inclined to think that the most perfect isolation hospital I have ever seen is that on the outskirts of Stockholm, and the Blegdam's Hospital at Copenhagen is a good second to this. At Brussels no isolation hospital is provided (except for cholera), and cases of small-pox even are housed in the garrets of the two general hospitals. Both at Berlin and Paris infectious cases are taken into the general hospitals. In the latter there is an isolation hospital just outside the fortifications near Aubervilliers, but the buildings are of wood, and of a very temporary character. The small-pox pavilion is placed fairly well in the centre of the others; and at the few visits I paid to it, I saw more cases of virulent small-pox than I had ever seen in my life before. The view of the aerial diffusion of small-pox, which we are obliged now now to regard as a canon of our faith, does not receive much support abroad.

(To be continued.)

THE PROFITS OF MARGARINE MANUFACTURE.

THE prospectus of Van den Bergh's Margarine was issued a few days ago. Subscriptions are invited for 90,000 Six per Cent. Cumulative Preference shares of £5 each. The company has been formed to acquire as a going concern the business of Messrs. Van den Bergh, of Rotterdam, Olevs, and London, who are stated to be one of the largest manufacturers and exporters of margarine and butter substitutes. Of the 90,000 shares, 20,000 have already been subscribed by the directors and their friends, and the balance of 70,000 shares are now offered to the public for subscription at par. The reports which accompany the prospectus state that the profits of the business have progressed until they have reached a total of nearly £100,000 for the past year, or more than three times sufficient to cover the interest on the Preference issue, and the profits on the English branch alone are far more than sufficient to pay the interest on the Preference shares.

DISEASED MEAT "GOOD ENOUGH FOR GLASGOW."

Mr. FIFE, sanitary inspector, in his fortnightly report to the Health Committee, stated:—"On Wednesday, 20th ult., an anonymous letter was received from Campbeltown, calling attention to a diseased carcass which had been forwarded to Glasgow by the Campbeltown steamer. On receipt of the letter an inspector was sent down to the wharf, and found the carcass in process of being taken to the consignee (a dead-meat salesman in the city). Dr. Russell found it badly affected with tuberculosis, and certified it unfit for human food. The inspector, on making inquiries in Campbeltown, found that the Campbeltown Medical Officer of Health had examined the carcass after slaughter and found a good deal of inflammation on the left side and some on the right side, but apparently did not detect tuberculosis. The superintendent of the slaughter-house there stated he was told by the medical officer that it could not be sold as sound meat in Campbeltown, but that it might be pared, dressed up, and sent on to Glasgow. Acting on this advice, the owner had this done, and but for the timely notice given by the anonymous correspondent this diseased meat might have been offered for sale as human food. The carcass was carefully stripped on both sides of the peritoneum to destroy all evidence of disease. I think it right to call the special attention of this committee to the conditions under which this tuberculous meat was sent on here. Local authorities, from within whose jurisdiction parties are privileged to send the carcasses of animals to this market for consumption, should be required to have under their orders a responsible official capable of detecting disease in a newly-slaughtered animal, and prevent such meat being sent anywhere for human consumption."

SPURIOUS MUSTARD AND CRESS.

It is stated that the herb now sold by many greengrocers in combination with garden cress is the product of rapeseed, not of mustard seed. It can be differentiated from the latter by comparison of the leaves, the rape being of a darker and duller green, with a downy surface. There is none of the fresh pungency of flavour which characterises the genuine article, while, instead of being wholesome, rape is said to be harmful if consumed in large quantities. The reason for substituting it for mustard is the greater quickness of growth. Rapeseed strewn on wet flannel and kept in a warm atmosphere will be ready to cut in a week, whereas the more slowly growing mustard requires twice that time for maturity.

LEAD POISONING BY LEAD WATER PIPES.

SANITARIANS have been for years unanimous in condemning the use of lead pipes for water supply, and, considering the number of very serious diseases that have been traced to lead poisoning caused by water carried through lead pipes, and such emphatic condemnation as was recently passed upon such pipes at the meeting of Yorkshire Medical Officers of Health, it is surprising that apologists for lead pipes can still be found. In the face, however, of the grave results of using lead pipes for water in many Yorkshire districts, the Local Government Board might usefully take into consideration the question of amending the Public Health Acts in this direction. Mr. William Thomson, F.R.S., in a lecture on "The physical and chemical peculiarities of lead and sanitary plumbing," says, "A lady suffered from lead poisoning, and, at my advice, a tin-lined lead pipe was put in, in place of the lead pipe, but to my surprise I found that after this piping had been laid the water still became contaminated with lead." Tin is, no doubt, a perfect and non-corrodible metal, very suitable for conducting water, but should be encased with iron, which does away with all soldering and its evil consequences. The Memorial Hospital at Mirfield is fitted throughout with the Health pipe, and is giving great satisfaction. Also the 80 artizan dwellings the London and North-Western Railway Company are erecting at Heckmondwike are being fitted with this pipe.

THE SELECT COMMITTEE ON ADULTERATION RE-APPOINTED.

A SELECT Committee has been re-appointed to inquire into the working of the Margarine Act, 1887, and the Sale of Food and Drugs Act, 1875, and any Acts amending the same, and report whether any, and, if so, what amendments of the law relating to adulteration, were, in their opinion, desirable. The members are Colonel Bagot, Mr. Barton, Mr. Bolitho, Sir C. Cameron, Mr. Channing, Mr. Colman, Mr. Colston, Sir W. Foster, Mr. F. C. Frye, Mr. H. Gardner, Mr. Jeffreys, Mr. Kearley, Mr. Kennedy, Mr. Kilbride, Mr. Lambert, Sir M. Stewart, Colonel Warde, Mr. Whiteley, and Mr. Yerburgh.

Evidence as to the adulteration of butter and milk will be taken at the first sitting of the Select Committee on Food Products Adulteration, to be held on Tuesday next, under the presidency of Sir Walter Foster. Among the first witnesses to be examined will be several from Manchester on the subject of excess water in butter.

THE WEIGHTS AND MEASURES ENQUIRY.

MR. H. J. CHANBY, superintendent of the Standards Department of the Board of Trade, gave evidence before the House of Commons Committee, and showed there were many weights and

measures in use in the United Kingdom which were not legally recognised, instancing thecarat, the boll (used in Scotland), the ell, the coomb (used for measuring corn), the Winchester bushel, the butchers' stone of 8lbs., the miners' dish (used for weighing ore in Derbyshire), and the gauge (used in measuring plates), as examples of weights and measures which were not recognised by law. The only two countries of any importance in Europe in which the metric system was not adopted are, he said, Great Britain and Russia. In Germany, Austria, France, Italy, Spain, and Portugal the metric system is the only system used.

AN EYE-OPENER FOR ANTI-MARGARINE AGITATORS.

Apropos of the recent ridiculous prosecutions of grocers for selling "Le Dansk"—in reality a stupid attempt at intimidating traders and to establish a boycott, which Mr. Bros., at Clerkenwell, promptly squelched—the following facts are not without significance: An exhibition was given recently by the State Dairyman's Association of Pennsylvania. The *National Provisioner* says: "The exhibition was one got up entirely for dairy products. Despite this fact, however, the proverbially long-headed man loomed up with a trump card up his sleeve, and played a trick which, to our mind, is worth a great deal to the margarine industry, and has furnished the trade and the public with one of the best arguments in favour of the product that could possibly be wished for. This long-headed man had samples of margarine entered as cow-butter, for prizes in competition with Pennsylvania butter. The judges at the exhibition—all of them dairymen—without hesitation awarded the prizes to the margarine for its superiority to Pennsylvania butter. Now, the presumption is that only the best grades of butter were in competition at this exhibition, which goes to show that the judges not alone regard butterine as equal to the best grade of cow-butter, but superior also." We do not suppose that the Pennsylvania butters equal our native finest creameries, but we should like to see the result of a preparation like "Le Dansk" being entered as butter at our Islington show, and if the expert tasters' decisions agreed with other expert opinions—that it was superior to a great many butters.

ADULTERATION PROSECUTIONS.

BARNESLEY.—TINCTURE OF RHUBARB—At Barnesley, on March 11, Joseph Wilson, shopkeeper, Wombwell, was charged by Mr. Bundy with selling adulterated tincture of rhubarb Mr. A. H. Allen certified that the sample taken contained: Extracted matter, 5.64 per cent.; absolute alcohol, 36.59 per cent.; water, 57.77 per cent. These results showed the sample to have little more than three-fourths of the alcoholic strength of tincture of rhubarb, prepared according to the prescription of the British Pharmacopœia. The sample was nearly destitute of saffron, which was ordered to be inserted in tincture of rhubarb in the proportion of a quarter of an ounce to the pint. Fined 5s. and the costs.

BIRMINGHAM.—Arthur Baldwin, John Phillips, and Florence Skinner, milk sellers, living in Stoney-lane, were each fined 5s. and costs on March 8th, for having sold milk adulterated with water, Harry Ingram, Lodge-road, for selling butter containing 75 per cent. of fat, was fined 40s. and costs; and Mary Taylor, Park-street, was mulcted in a similar sum for having sold butter which contained 80 per cent. of fat.—With regard to the milk prosecutions, the Inspector said that of five samples of milk taken in Stoney-lane on the same day only one was genuine.

COFFEE HOUSE BUTTER.—At West London, on March 8, there were several summonses at the instance of the Chiswick Urban District Council against coffee-house keepers for offences committed under the Food and Drugs Act.—Mr. Finnis, clerk of the council, supported the summonses. He said there had been several complaints, and the consequence was that the inspector went to them dressed as a working man and obtained samples.—In the first case Robert Seabrook, of High-road, it was proved that the inspector purchased butter, which was found to consist entirely of foreign fat.—The defendant said he knew it was not butter. The inspector came in late, and was served with what they had got.—Mr. Curtis-Bennett fined the defendant 20s, with 12s. 6d. costs.—The next summons was against Charles Collett, who had coffee and dining-rooms at Bank-buildings. In his case the butter contained 40 per cent. of foreign fat. The defendant, who said it was sold without his knowledge, was also fined 20s., with 12s. 6d. costs. James Judd, who had coffee and dining-rooms in the High-road, was summoned, and it was proved by Inspector Clarke that the butter consisted wholly of foreign fat. Mr. Curtis-Bennett imposed a penalty of 40s, with 12s. 6d. costs. The fourth summons was against William Lane, of Devonshire-road, Chiswick, who was fined 20s., with 12s. 6d. costs, in respect of butter which consisted wholly of foreign fat.

DISEASED MEAT.—Charles Bone, meat salesman in the Central Meat Market, was summoned on March 6, at Guildhall, London, for exposing for sale two sides of pork which were diseased and unfit for human food. Mr. Walter Beard, for the defence, said that the animal had been slaughtered in the cattle market, from whence it would not have been allowed to be taken had the examining inspector thought it unfit for food. It was apparently in sound and healthy condition, but this, however, had, upon examination, proved to be not the case. He submitted that no fault was

attached to his client, who merely sold on commission, and left his men to attend to the meat. Mr. Alderman Green came to the conclusion that the defendant ought to attend to the meat himself so as to prevent anything that was unfit for food being sold. The public had to be protected, and he should fine the defendant £50 and costs. Notice of appeal was given. Robert Varcoe, farmer, of Bodmin, Cornwall, was summoned for sending the carcass of a diseased sheep to the Central London Market, intending it for sale as human food. In the course of the opening statement it was said that the parcel was plainly marked, "for cat's meat," and the Alderman said upon that he could not convict. The defendant was discharged.

GRIMSBY.—SPENT GINGER.—Harry Mills was charged by Inspector Moady with selling adulterated ginger.—Mr. Baynes, of Hull, public analyst for the Borough of Grimsby, said that he had analysed the ginger, and found that one half of it was pure and the other half was exhausted ginger.—Mr. Sykes submitted that ground ginger was not food, and the prosecution had been taken under the Food and Drugs Act. It was also bought as pure ginger, and that was stated on the tin label, and also on the invoice.—The Magistrates expressed the opinion that it was a pity to have incurred such heavy expenses by having the public analyst come to Grimsby to give evidence. They would only impose a fine of 4s., which, with the expenses, would make £5 10s.

GREENWICH—On March 5th Samuel John Harris, of Eugenia-road, Rotherhithe, was summoned by Mr. Davis, inspector to the Rotherhithe Vestry, for selling as butter an article containing 55 parts margarine. Defendant said there was a ticket on the tub marked "Margarine," but it fell behind a box. The word "Margarine" was also on the paper in which the article was wrapped. The inspector said that that was so, but that paper was wrapped in a piece of newspaper. The defendant said he put it in the newspaper "for decency's sake," so that the inspector could put it in his pocket. Mr. Kennedy fined the defendant £3 and 2s. costs. John Moore, of Neptune-street, Rotherhithe, was summoned for selling milk with 55 per cent. of water. The defendant said he sold it as he received it. Mr. Kennedy told the defendant this must have been very poor stuff, regular sky-blue, and fined the defendant £4 and 2s. costs.

GLOUCESTER—AN EXEMPLARY FINE—At the police-court, on March 4, Joseph William Edwards, of the Danish Butter Company, carrying on business in Lower Barton-street and Northgate-street, was convicted on two charges preferred against him by the Medical Officer of Health and the Sanitary Inspector for selling as butter an article that contained 92 per cent. of foreign fat. On the Chairman announcing the conviction in the first place the defendant charged his manager as being the actual offender, urging that he had used all diligence to supply the latter with the proper labels, etc., for use in selling margarine. The Bench, however, refused to convict the servant, and on the second case being proved the chairman and the magistrate (Mr. T. Nelson Foster) pointed out that defendant had been convicted upon two previous occasions under the Margarine Act, and fined £5 and £20 respectively. A penalty of £50 and costs was inflicted in the first case, or in default three months' imprisonment, and a fine of £5 and costs, or in default one month, for the second. Defendant asked leave to appeal against the decision in the first case, which was granted, and sureties accepted, himself in £200 and two others in £100 each.

JARROW RUM—At Jarrow, on March 12, Henry Skipsy Beck, Duke of Wellington Hotel, Jarrow, was summoned by Mr. Edward Batey, food and drug inspector. Mr. W. S. Daghish, Town Clerk, prosecuted on behalf of Jarrow Corporation, and Mr. J. O. Davidson defended. Mr. Daghish said the proceedings were taken by Mr. Batey under section 6 of the Act. The analyst's certificate showed the proof spirit to be 63.43 per cent.; additional water, 36.02; extracted matters, .55; from which it was gathered that the said sample was 36.7 under proof. The prosecution quite admitted the possibility of mistakes, and would be extremely glad if any explanation could be given, as the Corporation did not wish to press hard on anyone. The Bench said there was no doubt the rum was under strength: perhaps without any intention on the part of Mr. Beck, the purchaser, who got the spirit from the bottom of the cask, did not get the spirit asked for. The Bench were unanimous in imposing a fine of 40s. and costs.

LIVERPOOL—Samuel Barton, shopkeeper, was summoned, on March 6, for selling vinegar which had been adulterated with upwards of 75 per cent. of diluted acetic acid, and was fined 1s. and costs.—John D. Simpson, grocer, of Athol-street, was charged with selling adulterated ground ginger which, on analysis, was found to contain upwards of 12 per cent. of chalk and sand. The defendant pleaded that the ginger was guaranteed by the makers. Mr. Stewart imposed a fine of 10s. and costs.

NEATH—At Neath, on March 8, Mary Roberts, landlady of the Cross Keys, Skewen, was charged with selling adulterated whisky. The public analyst's certificate showed that the sample submitted was 45½ deg. under proof. Fined 20s. and costs.

NEWTON—Mary Blundell, Newton, was charged on March 9 with selling rum, 32 per cent. of which was water, 25 per cent. only being allowed. Defendant pleaded guilty. The bench fined her 10s. and costs. At the same court, James Clare, of Haydock, was charged with selling adulterated coffee, and Mary Whitfield, also of Haydock, with adulterating ground ginger. Both defendants were fined 10s. and costs.

POPLAR.—DEFECTIVE SUMMONS.—At Thames on March 5, George Penman, grocer, Bruce-road, Poplar, was summoned by Mr. F. Anthony, sanitary inspector to the Poplar Board of Works, for selling an article containing not more than 2 per cent. of butter. Mr. Anthony said that he had made a mistake and wished to withdraw. Mr. Mead thereupon dismissed the case, and ordered Mr. Anthony to pay £2 2s. costs.—George Sam. Phillips, grocer, St. Leonard's-road, Bromley, was summoned for selling cocoa adulterated to the extent of 75 per cent. with arrowroot and sugar. Mr. Anthony, sanitary inspector, proved the case. Mr. Hood, who defended, objected to the form of summons on the ground that it did not contain the name of the prosecutor. Mr. Anthony said that the copy was made out by his clerk, and that it was his mistake. Mr. Mead also dismissed the summons.—The Poplar vestry clerk would do well to do as other vestry clerks in London do, and order FOOD AND SANITATION to be supplied for the use of the officials concerned with enforcing the Acts.

RUNCORN—At Runcorn, on March 11th, George and John Percival, farmers, Parkside Farm, Aston, were summoned by Mr. A. Timmis, the local inspector, who stated he purchased a pint of pure milk which, when sent to the analyst (Dr. Carter Bell, of Manchester), was found to have had 40 per cent. of the cream extracted.—The bench fined defendants 10s. and 25s. costs.

ST. HELENS—At St. Helens on March 11, Thomas Frodsham was summoned for selling to Inspector Steel "new milk" which, when analysed by Dr. Robertson, was certified to have had 8 per cent. of fat abstracted. The magistrates fined Frodsham 20s. and costs. William Todd, of Bickerstaffe-street, for selling new milk with 10 per cent. of fat abstracted, was fined a similar amount. Robert Rylance, of Cloughton-street, summoned for selling milk with 25 per cent. of fat abstracted, was defended by Mr. Riley, who proved that the lad was sent to deliver skimmed milk, and had no authority to sell. The case was dismissed.

ST. HELEN'S—William Laithwaite was summoned on March 4 for milk adulteration. Inspector Steele gave evidence, and Chief Constable Wood produced the certificate of the public analyst, Dr. Robertson, that the sample contained 8.24 per cent. of added water. The Bench imposed a fine of £1 and 10s. costs, or 14 days.

SOUTHWARE.—UNWHOLESOME MEAT.—Inspector Henry Thomas applied on March 5th for an order of condemnation of a large quantity of beef. He stated that at half-past four on the previous afternoon he went to the shop of Mr. Creed, butcher, of 107, Bermondsey New-road, where he found eleven pieces of beef weighing 29st. The shop was shut, and the meat was being cut up. Witness found a ticket which showed that a side of beef weighing 29st. had been purchased outside the market at 1s. 8d. per stone of 8lb. It was this that was being cut up. Witness examined the meat and found it very flabby, and there were evidences of bone disease. It was part of the carcass of a cow, and it was quite unfit for human food.—Mr. Fenwick having inspected the meat made the order required.

TIVERTON—It was decided to entrust Superintendent Crabb with the execution of the Food and Drugs Act in the borough, the analyst to be paid 6s. 8d. for every sample in addition to the annual salary of £10.

TONBRIDGE—Michael Selby, Priory-street, Tonbridge, was summoned by Supt. Bartlett for selling milk adulterated with 8 per cent. of added water. The magistrates fined the defendant £3 and the costs 10s. 6d., or in default 14 days' imprisonment.

IMPORTANT QUESTION AS TO PENALTIES UNDER THE MARGARINE ACT.

At Worship-street, on March 8, Mr. Robinson, the Vestry Clerk of Shoreditch, who had recently applied for payment to the Vestry of penalties imposed in cases under the Margarine Act, prosecuted by them—which payment had been refused—intimated that the Vestry had determined to raise the legal question by applying for a mandamus against the Chief Clerk of the Court. Under the Food and Drugs Act, the penalties, it was stated, went to the informer, but there was a limit of time within which such proceedings must be taken. Under the Act relating to the sale of margarine there was no such limit of time, and it recently happened that the Vestry of Shoreditch had to prosecute under that Act, and a penalty amounting to £20 was imposed. Mr. Robinson argued that, as the Margarine Act incorporated the provisions of the Food and Drugs Act, with special exceptions, the provision for the payment of penalties to the informer followed, not being excepted. On the other hand, it seemed from Mr. Robinson's statement that the clerks of the police-courts have been restrained by letter from the Home Office from adopting that view of the Act, and have been directed to pay the penalties to the account of the Receiver of Police. The Vestry Clerk said that notice should be given to the Receiver of Police of the application for a mandamus, so that he could take part in resisting it if desired. It was a matter of considerable interest to all Metropolitan Vestries, as it meant a large sum saved to the rates.

Upon this question, Dr. A. E. Harris, Medical Officer of Health, Islington, writes:—"I am very pleased to notice that the Vestry of Shoreditch are endeavouring to obtain for themselves the fines inflicted by magistrates for offences against the Margarine Act. Hitherto, the invariable practice of magistrates has been to refuse to pay these fines to the sanitary authorities, upon whom all the

expenses incident to the enforcement of the Act fall. This is one reason, I believe, why this most useful Act is not more generally put into force throughout the country, much to the loss of our dairy farmers. Again, sanitary authorities appoint inspectors under the Sale of Food and Drugs Acts, upon whom rests the onus of taking samples for analysis, and upon whom also falls the duty of seeing that the provisions of the Margarine Act are complied with. But they, like other men, are only human, and, therefore, they prefer spending their time in taking samples under those Acts which show, in the tangible form of fines placed to the credit of sanitary authorities, that they are doing their work and making a good return for the salaries paid them, to spending it in enforcing the Margarine Act, under which they get no money recompense for their employers. I am strongly of opinion that, if the penalties are in future handed over to the sanitary authorities, it is more than probable that the Margarine Act will be more generally enforced than it is at the present time. The matter rests practically with the Home Secretary, who can order, if he chooses, that these penalties be handed over to the prosecuting local authorities—I am, Sir, your obedient servant, ALFRED E. HARRIS, Medical Officer of Health, St. Mary, Islington, Vestry Hall, Upper-street, N., March 9."

POISONOUS GORGONZOLA CHEESE.

At Scarborough an inquest was held relative to the death of Elizabeth, wife of Mr. William Green, superintendent of the Eastern Counties Fire Insurance Company, of No. 9, Gordon-street. It was stated that on the night of February 27 the deceased ate some Gorgonzola cheese at supper. On the following day Dr. Vassalli found her confined to bed, breathing with great difficulty, and she died. The post-mortem examination revealed congestion of the intestines, due to some irritant which, in the doctor's opinion, was the Gorgonzola cheese, and he was not prepared to say that a sound cheese could produce the symptoms described. The inquiry was adjourned to admit of an analysis of the cheese.

THE SELECT COMMITTEE ON ADULTERATION. CONTINUATION OF MR. FARMER'S EVIDENCE.

XXXIII.

(Continued from page 71.)

If you give a cow a lot of mouldy musty hay, or if a cow in a very dry summer practically gets no food at all, has to work hard for its living, and gets nothing to supplement it, the cow in a sense is starved, and then the natural result would be that the cow is not nourished, and she cannot give good milk.—Is it the rule, do you think, that where there are cows that give a poor quality of milk they give an extra quantity?—Speaking generally a cow that gives a very large quantity would not give so good a quality, but I do not think that that is a uniform rule.—I understood you to say that few farmers have separators, but are not separators getting much more common than they were?—Yes, but men who send milk to London as a rule send the whole of their milk, and they have no occasion to buy separators, and consequently such farmers have not got separators.—Not even for emergencies?—It is a very rare thing I think.—If it is a fair question, what is the price of milk per gallon at the farm?—It varies very much according to the time of the year, and the position in which the farm is, and the time at which it can be delivered to a town. There are many circumstances which come in to affect the price of milk.—About how much per gallon would it be generally?—You see it depends upon various circumstances; for instance, if you have a place 200 miles away from London.—I mean the price at the farm?—But the cost of conveyance to London varies, and consequently the price; it is always sold delivered to London or delivered to a large town, and then the price at the farm would be so much less by the extra carriage; but you may take it roughly that the price would be from 5d. to 6d. per imperial gallon in the summer at the farm, and in the winter from 8d. to 10d., or from 8d. to 9d., say. It depends so much upon where the farm is situated.—Mr. Whiteley: I have only one question to ask you. You say that margarine is coloured for the purposes of fraud?—Yes.—I suppose you have seen coloured margarine exposed for sale in shops with the letters "margarine" upon the package?—Yes.—Has the margarine been coloured for the purposes of fraud?—I am not speaking of any particular sample in any particular shop; I am speaking generally of the reason why it is churned, and why it is coloured, why it is not sold in the original colour in the same way as lard would be.—Do not you think that it is rather to make it pleasing to the eye, just as people colour butter?—That may have something to do with it; but the reason why it is pleasing to the eye is because butter is of that particular colour.—Still it is to make it pleasant to the eye, and of the colour which butter is?—Of the colour which butter is, undoubtedly. It opens the door to fraud, there is no doubt about it, very largely.—You would prohibit the colouring, and force it to be sold absolutely white like lard?—I do not know what colour it is in its natural state. I would not have it coloured, so that it might be sold as butter.—Have you any opinion upon the mixing of butter and margarine?—I would let the purchaser mix it for himself.—Every man his own mixer?—That is so.—Do not you think that

it would be a very difficult task if you left a man to carry that out for himself?—I fancy that every man who wished to do it, could do it.—As a matter of fact, is not most of the margarine sold mixed by machinery in a skilful manner?—I believe it is.—Practically you would oblige everybody to make his own mixture in an unskilful manner, and possibly distastefully?—I would leave everyone who wished to mix it to mix it, in order that those who do not wish to have it might not have it unknowingly.—Practically, would not the effect of the prohibition of colouring margarine be to raise the price of butter?—That does not affect me in a fractional way.—But speaking as a man of the world, do not you think it would increase the price of butter?—The object of this Committee is to prevent adulteration and fraud, and it is not a question of price so much as it is a question of genuine article.—I am told that margarine in its natural state is of the colour of cream, and that cream-coloured butter is the most popular in Lancashire; do you know that?—Then I cannot conceive, if that is so, why gentlemen should wish to colour the margarine at all. I should think they would be at one with us at once, seeing that cream is such a popular colour, but I do not know what the natural colour of margarine is.—Mr. Jeffreys: I should like to ask you on that subject whether the result of the non-colourisation of margarine would be, not to raise the price of butter, but to diminish the price of margarine?—I would answer you in the same way that I answered the other honorable member namely, that I do not think it is a question for me whether it would increase the price, or diminish the price. The object is to prevent fraud, irrespective of what the price may be.—I mean to say that if the fraud were stopped, then the margarine would sell at its natural price, which I believe is very much below that of butter?—Each thing would stand on its own basis, and its own level, whether it would be higher or lower.—And I suppose that the colouring of margarine is merely in order to perpetrate a fraud and sell it as butter?—That is how it appears to me.—One question about the low standard of milk from the cow. If a cow were so badly fed as to produce a very low standard of milk, would you then propose to punish the man who sold the milk, although that milk was a pure milk of very low standard?—If it could be shown that the cow was so badly fed, it would practically come under the head of cruelty to animals.—No, not quite, if the cow were fed on grains and roots?—I see your point of view. I do not think you could punish the man if the milk were pure.—You would not be prepared to go so far as that?—Not if it could be shown that the milk was pure, and the cow properly nourished.—Mr. Whiteley: I suppose you know that everything but pure butter, that is to say, mixtures of butter and margarine, have to be sold as margarine, and labelled as such in the shops by law?—Yes, I believe that is so.—Therefore it is only just the carrying out of the law with which fault can be found; not with the law itself. May I put it in another way: If the law were made effective, both mixtures and margarine would be sold as margarine if the law were carried out?—I suppose that would be so, but that is a very large "if."—Your difficulty, I mean, is not with the law as it stands, but with the carrying out of the law, is not that so?—My point is that we should in every way facilitate the carrying out of the law, and if, by allowing the colouring of margarine, we make it almost impossible to carry out the law, then it would be far better to adopt a system by which the law could be easily carried out and the public get the article for what it is, and not for what it is not.—But do not you think that the law is sufficiently strong and perfect at the present time for all those purposes, if the inspection were effective and if it were carried out?—I do not think it is; I think it is impossible to get it so.—Sir Walter Foster: Then you would amend the law, I understand you to say, by making the colouring of margarine an offence?—I would.—Would you increase the penalties under the law in any way?—I do not know what the penalties are, but my experience is that adulteration in dairy products is such a remunerative thing that it is impossible for fines to stop the practice.—And you would substitute for fines, what?—I would have something much more stringent, where it could be clearly proved that the intention was fraud. Certainly, after the second conviction, I would have imprisonment. It seems to me a worse form of picking a man's pocket than putting your hand into his pocket and taking out his purse.—I think you have something to say about the sealing of milk churns?—I know that, so far as the Great Western Railway Company is concerned, and also the London and South Western Railway Company they allow the sealing of milk churns; in fact, I have one of the Great Western Railway Company's conditions here, by which they carry it, and they say, "In the case of 'sealed' cans, instead of the inside of the can being marked, each can must have its 'tare' conspicuously stamped there on outside," clearly showing that they allow sealed cans.—You think that sealing is necessary for the protection of the farmers?—I think it is an additional protection, certainly.

(To be Continued.)

WEST RIDING OF YORKSHIRE COUNTY COUNCIL AND ADULTERATION.—The Sanitary Committee have recommended (a) that in the opinion of the County Council, all vessels containing skimmed milk, or separated milk, should be labelled as such in letters an inch long; (b) that a standard for water in butter be fixed, and that margarine should either be sold in separate shapes or coloured differently to butter.

SANITARY ITEMS.

ASTON DRAINAGE SCHEME.—Another attempt is being made to shelve the Aston Fields drainage scheme, the Stoke Prior Council wishing to avoid the expenditure of some £5,000, but the Local Government Board are, it is believed, irritated at the policy of doing nothing, and is not likely to allow the scheme to be shelved.

BLACKWELL RURAL DISTRICT.—The Derby County Council wrote, in reply to the Council respecting the state of the manholes at Pinxton, saying that they were prepared to take the responsibility of the work, and the clerk was instructed to order the surveyor to carry out the work. Mr. Hodson was instructed to proceed at once with the laying of the water mains for Tibshelf over the bridge of the Manchester, Sheffield, and Lincolnshire Railway. The sanction to the loan for the sewage scheme at Tibshelf having been obtained, it was decided to apply to the Public Loan Works Loan Board for the money.

CLERKENWELL.—The disinfectants contract has been given to Adcock, Easton and Co., at the following prices:—Carbolic acid, 1s. 1d. per gallon, carbolic powder, 4½ per lb. We do not know if Clerkenwell is amongst the vestries who never get their supplies analysed, but it would be as well if they had supplies regularly tested.

GREETLAND.—Colonel Luard held an inquiry on March 6th, in reference to a petition of the Greetland District Council to the Local Government Board, to issue a provisional order to enable the Council to purchase land, otherwise than by agreement, for the disposal of the sewage of the district.

HAMMERSMITH have accepted Adams, Webster and Co.'s tender for disinfectants. We hope to see more attention given this year to regular analysis of disinfectants than has hitherto been the case.

MR. BALLANTINE, M.P., AND THE COVENTRY SEWAGE SCHEME.—Speaking at Stoke, Mr. W. H. W. Ballantine, M.P., referred to the action of the County Council in causing the rejection of the Coventry sewage scheme in Parliament. This year the City Council had to advise a new scheme of sewage. They did so under the advice of the same engineer, and the scheme differed in many respects from the previous one. The County Council considered the scheme, and announced the extraordinary piece of information that they did not intend to appear at the enquiry to be held in Coventry, but that they intended to oppose the scheme in Parliament because it was similar to the last, and because the same reasons could be urged against it which induced the House of Commons to throw it out previously. The first reason was entirely incorrect; the scheme was not similar to the last one. And with regard to the "reasons" which induced the House of Commons to throw the Bill out, no reasons existed, for it was thrown out without any reasons and without any evidence. He (Mr. Ballantine) wanted to know what was the reason for the attitude of the County Council with regard to this public work undertaken by the Corporation of the city of Coventry. They had the interests of the inhabitants of Warwickshire committed to them. Why had they taken up and supported the interests of one individual rather than the interests and necessities of 55,000 individuals? (Hear, hear.) He maintained it was simply, solely, and for no other reason than that the individual in question was an influential landlord and an influential member of their body. And he ventured to say that a more servile piece of jobbery was never perpetrated.

SPENNYMOOR (DURHAM).—At a special meeting of the Council on the 6th inst., Mr. G. Wyon Rogers, Assoc. Mem. Inst. C.E., of Newcastle-on-Tyne, was appointed out of 75 applicants. The district comprises a population of about 20,000, and extensive works are about to be carried out.

ST. GERMAN'S.—The St. Germans Rural District Council decided that three months' notice be given to Mr. Hancock to determine his office of highway surveyor as soon as he became the officer of the District Council. It was also recommended that the area of the whole district be worked by one officer only, who should combine the duties of surveyor of highways and sanitary inspector, at a yearly salary of £150—viz., £70 as sanitary inspector and £80 as surveyor of highways, and that the appointment be first offered to Mr. S. P. Hosking, the present sanitary inspector, but this recommendation was postponed for further consideration.

SEWERAGE SCHEME.—The Commissioners of the Burgh of Barrhead offer a premium of £31 10s. for the best plan and report as to cost of a drainage and sewerage scheme for the Burgh, exclusive of precipitation works, with an alternative report including precipitation works. The report also to embody the cost of a separate drain pipe for surface water. Competitors to lodge their scheme and report on or before April 30, marked "Drainage Scheme," with the Town Clerk. Further particulars may be obtained from Mr. Aitken, Burgh Surveyor, who will exhibit a ground plan of the Burgh.

SWANAGE.—After a long discussion over the question of appointing Mr. Parsons sanitary inspector and surveyor under the Urban District Council, the Rev. T. A. Gurney moved:—"That, in view of the new sanitary conditions of Swanage, the Council advertise for an inspector of nuisances and surveyor at a salary of £100 for the first year, with a promise of increase, and that the office of assistant surveyor, at a salary of £30, be offered to Mr. Parsons for a year, in recognition of his long services under the Local Board." Mr. Hardy moved:—"That the clerk of the works engaged on the sewerage works shall temporarily perform the duties

of sanitary inspector in addition to his other duties." Mr. N. C. White seconded this, and it was carried unanimously. Mr. Parsons has served the late authority for 18 years, and his case is looked upon by many as harsh treatment.

WESTHAMNETT RURAL COUNCIL.—Mr. Budden, sanitary inspector, wrote asking for an increase of salary. He pointed out that his present salary was £90, and that the extent of his district involved considerable personal expenses, which, including the purchase of a bicycle, amounted to £20 15s. in a year. Mr. Drewitt proposed that his salary should be raised to £100, and that he be allowed an additional £5 per annum for travelling expenses. The resolution was carried unanimously.

THE NEW LONDON BUILDING ACT.

AT Bow-street, on Mar. 11, Frederick Wallen, district surveyor for the parish of St. Pancras West, appeared before Sir John Bridge to two summonses, calling upon him to show cause why a decision he had arrived at with regard to the proposals of Messrs. Shoolbred to erect new buildings on a site they possess at the corner of Tottenham-court-road and Grafton-street, adjoining their other premises, should not be reversed.—Mr. J. P. Grain and Lord Robert Cecil (instructed by Messrs. G. H. Palmer and Son) appeared for Messrs. Shoolbred. The case was one of the first under the new London Building Act, which came into operation at the beginning of the present year. Mr. Wallen, the district surveyor, had reported that the plans for the new buildings submitted by Messrs. Shoolbred were in some respects in contravention of the new Act, and at the last hearing Mr. Grain argued at length that they complied with the Act in every essential particular. Mr. Grain now resumed his argument, and mentioned that when the plans were first sent in, Messrs. Shoolbred contemplated having something like a hundred sleeping apartments for their employees, but on the suggestion of Mr. Wallen that part of the plan was altered. No doubt Mr. Wallen was doing what he conceived to be his duty, but he (counsel) respectfully suggested that in this instance he was labouring under a mistake in alleging, as he had done, that the proposed buildings were of the warehouse class. The plans had been drawn by Mr. H. E. Hovenden, in whom Messrs. Shoolbred had the greatest confidence. The buildings would be of a magnificent character, and every precaution had been taken to guard against fire. The proposed buildings were, he contended, of a domestic class, and would, therefore, be heated differently from warehouse buildings. Mr. Wallen said he was willing to waive and withdraw his notice as to the buildings being of the warehouse class. He would admit that they were, under the Act, domestic buildings, but he contended that, under section 41 of the Act, sufficient air space was not provided. Sir John Bridge asked Mr. Wallen if he understood the section. There was no reply until Lord Robert Cecil said that no one understood it when it was passed. Sir John Bridge read a section dealing with diagonal lines, horizontal lines, and a reference to 63½ degrees, and said it was perfectly unintelligible. Mr. Wallen: That refers to the plane of the line, Sir John. Sir John Bridge: I am glad there is something plain about it. (Laughter) Mr. Wallen remarked that if Mr. Grain's contentions were correct all the back yards in London might be covered with houses. Lord Robert Cecil next addressed the magistrate. Evidence having been given, Sir John Bridge said he was glad he was not bound to determine this case on the construction of any of the sections of the Act that had been quoted, because almost all the sections of the Act seemed to him to be so drawn as to be perfectly unintelligible. Where intelligible, they were intelligible in two different ways, and capable of two different constructions. There was one point which was a matter of fact. He found, as a matter of fact, that the buildings were to be used principally as offices or counting houses, and made an order setting aside the objections of Mr. Wallen as to section 41, the other objections being withdrawn.

GLOSSOP SEWAGE SCHEME.

COLONEL DUCAT, one of the Inspectors of the Local Government Board, held an inquiry in the Town Hall, Glossop, on the 6th inst., on an application from the Corporation of Glossop for borrowing £40,000 for purposes of sewerage and sewage disposal. The town clerk explained that the council had offered prizes of one hundred guineas and fifty guineas respectively, and out of fifteen competitors the first prize of one hundred guineas was awarded to Messrs. Lomax and Lomax, C.E., of Manchester and Bolton, who had been retained to carry out the works. Mr. C. J. Lomax explained the proposed arrangement of sewage, and described the Outfall Sewage Purification Works, as prepared for the treatment of the sewage by the International process.

On entering the works the sewage will receive a due proportion of the precipitant Ferozone by means of a "Kierby" mixer, and will then pass to the precipitation tanks, which are of the new form of the continuous upward flow circular tank, four in number, provided with the Candy Patent Sludge Removal Apparatus; by means of this apparatus the sludge will be removed without interference with the continuous use of the tank. The effluent being delivered within a few inches of the inlet of the sewage, will pass direct to the filter beds arranged on the method of the International Water and Sewage Purification Company, Limited, viz., "Polarite."

After hearing the evidence, there being no opposition, the inspector visited the site, and promised duly to report.

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The Vital Principle of **PRIME * OX * BEEF,**

Contains **50** times more Nourishment than ordinary Meat Extract,
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A LOCAL BOARD TO PAY FOR A NUISANCE.

In the Queen's Bench Division, on March 8th, Mr. Justice Cave and a special jury had before them the case of Eustace v. the Leyton Local Board. This was an action brought by Henry Eustace, a carpenter, residing at St. Joseph's-terrace, Leyton, on behalf of himself and daughter, Clarissa Eustace, to recover damages for injuries sustained by the latter, alleged to be occasioned through the defendant Board permitting a nuisance to exist at the rear of plaintiff's house. Plaintiff also asked for an injunction to restrain defendants from continuing the nuisance. Plaintiff stated that there was a gravel-pit at the rear of his house. Into this pit defendants, through their servants, had been in the habit of shooting rubbish, house refuse, and other matter, with the result that it had caused a nuisance, and in consequence of such nuisance plaintiff maintained that in May last year his daughter was taken ill with scarlet fever.—The defendants denied the nuisance, and denied that the illness of plaintiff's daughter was due to any nuisance they had permitted.—The jury, without leaving the box, found for the plaintiff, damages £100.—Judgment accordingly.

SALTBURN SURVEYOR'S SUICIDE.

THE inquest on the body of Mr. George Smith Hikeley, of Coatham, Redcar, civil engineer and surveyor to the Saltburn Urban District Council—who was found shot dead in a first-class compartment of the "workmen's" train from Bradford to Leeds soon after five o'clock on Saturday morning—was held on Monday before Mr. J. C. Malcolm, coroner, at the Leeds Town Hall.

John Hikeley, innkeeper, of Coatham, identified the body as that of his son. Deceased was a civil engineer and surveyor to the Saltburn Urban District Council. He was 27 years of age and lived at home. He was last at home on the 2nd March, leaving about eight o'clock in the morning. He said he was going to Manchester on business, and would be back at night. He did not return. On the following Tuesday they telegraphed from the office to know where he was, and witness then made inquiries. The Coroner: Did you find there was anything wrong at all? They did not know exactly, but they thought there was.

The coroner, in summing up, said the jury would have to consider what was the state of the man's mind at the time he shot himself. The first intimation they had of his being on the line was that he was calm and collected. Nothing further could be traced about him. The only thing they knew was that he was unfortunately in some way in difficulties in his official capacity, and had committed that deed. Of course juries were generally desirous in dealing with these matters to be as considerate as possible. The case simply appeared to be that he had run away on account of supposed defalcations; but was that sufficient in their opinion to enable them to say that he so lost his reason as to be unable to determine the nature of the act that he was committing?

The father was again recalled, and the Coroner said: Did you know of your son being in possession of a pistol? No. Were the defalcations serious? No; they were very little. They would have been put right next day if he had said anything.

After a retirement of fifteen minutes to consult, the jury returned a verdict of "Suicide while temporarily insane."

THE MIDDLETON SEWAGE DISPOSAL WORKS.

THE Middleton Corporation having intimated to the Local Government Board their desire to incorporate in the Sewage Disposal Works all the recent improvements in tanks and clarifiers introduced by the International Water and Sewage Purification Company, an inquiry was held by Mr. G. W. Willcocks, C.E., the Inspector appointed by the Local Government Board, in the Town Hall, Middleton, on Thursday, the 7th inst. The Town Clerk explained that the original scheme was arranged by the engineers, Messrs. Hinnell and Proctor, of Bolton, for carrying out the International Process of Sewage Purification, by means of Ferozone and Polarite, and comprised three rectangular precipitation tanks, of a total capacity of 550,000 gallons, Polarite filters of 1,200 square yards, sludge pressing machinery, etc. The revised scheme now submitted has been arranged to include the improved form of continuous upward flow circular tanks, with the Candy sludge removal apparatus, whereby the sludge will be removed without interference with the continuous flow of the sewage, also a clarifier for the removal of all light flocculent matter, which otherwise would be deposited on the superficial layer of sand in the filters, by reason of this complete clarification of the tank effluent. The engineer has been able to arrange the filters at the reduced area of 600 square yards, containing two layers of Polarite, each eight inches thick, working at double the speed of the original 6-in. layer filter. The filters will also be arranged with special aerating layers.

The Town Clerk concluded by stating that the revised scheme will ensure considerable economy in the matter of labour.

Mr. Hinnell entered into the details of the scheme, confirming the opening statement of the Town Clerk.

At the conclusion of what was in reality an unopposed scheme, the inspector went over the ground after promising to report as early as possible.

APPOINTMENTS VACANT.

ASSISTANT SANITARY INSPECTOR (Bournemouth), March 19.—Salary £70 per annum, rising by annual increments of £10 to a maximum of £100. The person appointed will be required to reside within the Borough and devote his whole time to the duties of his office, and if not already in possession of a Certificate from the Sanitary Institute, he must qualify for and obtain that Certificate within 12 months from the date of his appointment. Applications, with copies of not more than three recent testimonials, which will not be returned, to be sent to J. Drullit, Jun., Town Clerk.

HIGHWAY SURVEYOR (Aethwy Rural District Council), March 25.—£80 per year. R. Benjamin Evans, Union Offices, Bangor.

HIGHWAY SURVEYOR (Ogwen Rural District Council), March 25.—Salary £60. R. B. Evans, Union Offices, Bangor.

HIGHWAY SURVEYOR (Warwick), March 22.—£75. H. Consett Passman, Clerk, 48, Bedford-street, Leamington.

HIGHWAY SURVEYORS (Newton Abbott), March 19.—One each for north and south sub-districts. John Aslop, clerk, East-street, Newton Abbott.

HIGHWAY SURVEYOR (Oxford), wanted to take immediate duty, salary £150. County surveyor, Oxford.

HIGHWAY SURVEYOR AND SANITARY INSPECTOR (Sherburn), March 25.—State salary, age, experience, and send copies of three recent testimonials to Mr. Woodall, clerk, 32, Queen-street, Scarborough.

INSPECTOR OF PIPE-LAYING (Swansea), March 19.—35s. weekly; applications endorsed "Pipe-laying Inspector," to Town Clerk, Swansea.

SANITARY INSPECTOR (Foleshill), March 19.—Salary £100; £10 extra for canal boats officer. Three testimonials and particulars to James Tomkies, clerk, Workhouse, Foleshill.

SANITARY INSPECTOR (Oldham), March 18.—To act as Working Surveyor, Sanitary Inspector, and Collector to the Springhead Urban District Council. State age, salary, experience, and send testimonials to W. B. Halliwell, 13, Queen-street, Oldham.

SURVEYOR AND SANITARY INSPECTOR (Swanage), April 1.—Salary, £100 rising. Holder of Certificate of Sanitary Institute preferred. Three references, but no testimonials. Thomas Kandell, Clerk, Town Hall, Swanage.

SURVEYORS (Billericay)—One for Western district at £100 per annum, to include all travelling expenses. The other for the Eastern district, at a salary of £50 per annum, to include all travelling expenses. Applications (marked "Highway Surveyor") stating age, previous occupations, and accompanied by copies of not more than three testimonials of recent date, must be sent not later than the 18th day of March, 1895, to Charles C. Lewis, Clerk to the Council, Brentwood.

WEST SUFFOLK AND THE ADULTERATION ACTS.—Upon the report of the County Analyst being presented, Mr. Cordy Wolton called attention to the fact that there were very few samples taken in West Suffolk as compared with East Suffolk.—Alderman Allen: But what's the use of getting an analysis, and when the analyst says it is adulterated Somerset House says it is not? Look what it costs the county. It is so much money thrown away.—Mr. Cordy Wolton said it was a serious matter, and should be looked into.—The Chairman agreed, and alluded to a case where the County Analyst had certified 10 per cent. adulteration, while Somerset House said it was perfectly pure. "We must," he added, "either get a fresh analyst ourselves, or they must get a fresh one at Somerset House" (Laughter).—The matter was referred to the General Purposes Committee.

ROYAL LANCASHIRE AGRICULTURAL SOCIETY AND THE FOOD AND DRUGS ACT.—At the quarterly meeting of the council of this society, held at Preston on March 11, the Parliamentary Committee recommended the appointment of an inspector to co-operate with the county authorities in carrying out the provisions of the Fertilisers and Feeding Stuffs Act, Food and Drugs Acts, and the Margarine Act. The chairman commented upon the useful work which was being accomplished by the Parliamentary Committee. They did not intend for a time to do things very largely in the direction indicated, having appointed only one inspector; but, if the members of the society supported the committee, they would be able to do a great deal of good.

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Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London,

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LIEBIG'S EXTRACT OF MEAT & MALT WINE

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—Times.

"SANITAS"—"Enjoys general favour."—Lancet.

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Food and Sanitation.

SATURDAY, MARCH 23RD, 1895.

ADULTERATION PROPOSALS.

BUTTER-BLENDING machine-makers will feel considerable annoyance at the evidence offered to the Select Committee of the House of Commons by Mr. John Lovell on Tuesday. It somewhat startled the Committee to learn that special mixing machines for amalgamating margarine with butter are in extensive use by shopkeepers—so much so, in fact, that even the most straightforward traders have, in many districts, to choose between following the fashion or "shutting up shop." There are hundreds of these machines in use to-day where there were only some twenty or thirty three years ago. The retailers using them know that if they mix no more than fifteen or twenty per cent. they are safe—unless it should be the case that the wholesale dealer has already mixed in some margarine, when, if a sample be taken for analysis, the public analyst is almost certain to detect the adultera-

tion, hence the burning anxiety to know if the Breton, the German, the Swede, or the Dane has forestalled the artful swindle. For our part, we do not believe that retailers practising the fraud need, save in a very few places, feel any special dread. The enforcement of the Acts is so feeble, and analytical science so incomplete, that the possible percentage of convictions, if calculated out, shows the profits must far outweigh any losses. As the Acts are now administered, there are thousands of traders who have not been visited by a Food and Drugs Act Inspector for five, ten, or more years. Mr. Lovell, who is one of the largest, if not the very largest dealer in butter in the United Kingdom, knows this condition of things well, and his argument to the Select Committee that an occasional £10 fine was no deterrent to a dealer who could make £25 a week extra profit by his frauds, is one we have repeatedly advanced in this journal. Imprisonment for a second or third offence is necessary, and for the suppression of the frauds thoroughly trained Inspectors, with experience of procedure and of the Adulteration Acts, travelling throughout the kingdom, is an absolute necessity. One very valuable suggestion Mr. Lovell makes, and this, if carried into effect, will strike dismay into butter blender makers and users. The blender is needed by the dairy farmer, but its presence in the cellar of the retailer, or wholesale butter merchant is *prima facie* evidence that it is there for purposes of fraud. Mr. Lovell proposes that the machines should be regarded as illicit stills now are, and their possessors, unless they have valid reasons for the use of the blending machines, should be liable to similar penalties. This is a suggestion well worthy the careful attention of the Select Committee, for a very strong reason, apart from the fact that the machines make fraud so very easy. The most expert analysts would not like to swear to a ten or fifteen per cent. admixture of margarine, although they may strongly suspect its presence, and it is this which gives the unscrupulous possessor of a blending machine his chance. The profits of the game are a strong inducement, being from 7s. to 10s. per cwt., according to the amount of margarine mixed with the supposed pure butter. Margarine by itself is, when properly prepared, an excellent and wholesome article, very little inferior to butter save in bouquet. It will be a benefit to the poor and to margarine makers if more stringent and efficient legislation causes margarine to be sold at its real value

and for what it honestly is. It is a high tribute to its quality that even the most fastidious eat it as butter without any suspicion that it is not the genuine article. As it has been proved to be a cheap, healthy and useful article of food it is for the benefit of the poor and the thrifty that it should be sold at its true price.

SOME POINTS OF DIFFERENCE

BETWEEN

ENGLISH AND CONTINENTAL METHODS OF MUNICIPAL SANITARY ADMINISTRATION.

By T. M. LEGGE, M.D., Oxon. D.P.H.

(Continued from page 81)

The fact that every year there are more deaths from small-pox in the one city of Paris alone than there are in the whole of the German Empire, brings out in a startling way the benefits of vaccination and re-vaccination, as opposed to merely encouraging the practice. I will not enlarge on this question of vaccination, as I should imagine that if there was one subject of which a M.O.H. is most heartily sick, it is the eternal discussion of the pros and cons of vaccination. I shall merely say that abroad, (and I think it a good thing) the use of animal vaccine lymph is largely replacing that of human. In Belgium they use nothing else, and in Stockholm 96 per cent. of the vaccinations are made with calf lymph. They invariably assure themselves of the healthiness of the animal before using the lymph, by slaughtering it and examining the condition of the organs.

MEAT INSPECTION.

Perhaps the most striking feature of continental sanitation is the great attention that is paid to the inspection of meat. I rather doubt whether we in this country can expect to effect much more than is done with the limited powers that we possess. Until some compulsory means are adopted for abolishing private slaughterhouses, meat inspection will always be very much of a farce. But I think that the question of substituting public abattoirs for private slaughter-houses stands on quite a different footing from that of meat inspection. On the grounds of decency and cleanliness alone, I should think that there could be hardly two opinions as to the advisability of the change. An occupation that is in many of its details rather revolting, and may lead to grave nuisance if proper care is not taken, ought to be centralised as much as possible. I need not expatiate on the horrors with which you are all probably only too familiar, as existing in a large number of private slaughter-houses and knacker's yards in most of the towns in this country. With the establishment of public abattoirs an efficient meat inspection can be carried out. Without them it is impossible. This is to my mind the greatest difference to be found between English and Continental sanitation. Expressed in another way, it might be said that veterinary science stands at a much higher level abroad than it does with us. And why? Partly because it receives so much more State support, and partly because so much wider a field is given to veterinary surgeons in the exercise of their profession, by this control over meat intended for human consumption. Abroad the meat inspection at the abattoirs is in the hands of veterinary experts alone. Private slaughter-houses are prohibited in the large towns, and no meat that is introduced into them can come upon the market without first receiving the official stamp. I need not describe the various methods adopted, as I have done so briefly in the September number of the Society's Journal. I would merely here record my opinion that the examination is a most thorough one, carried out, so far as I could see, without friction, and with a single eye to the elimination of the unsound from the sound meat.

With the question of meat inspection that of the control of milk is intimately associated, and I was immensely

struck by what is done in Copenhagen and Stockholm, as to the veterinary control exercised by two very large companies over the cows supplying milk to them. At Copenhagen the company employs a veterinary surgeon, who devotes the whole of his time to visiting the farms in rotation and inspecting the cattle on them, paying special attention to the detection of tubercle. If one is detected, the farmer must at once get rid of it. If an animal is found ill, the farmer must withhold the milk until such time as the veterinary surgeon determines. At Stockholm a fully-qualified veterinary surgeon actually lives on the farm, and superintends the feeding, etc., of the animals.

BACTERIOLOGICAL EXAMINATION OF WATER, ETC.

Greater facilities are offered abroad than with us in the study of the scientific side of Hygiene, by the provision of Hygienic Institutes and Laboratories. The true explanation of this is probably not that we are less inclined to be scientific, but that in this particular department we are more hampered by what, for want of a better word, I will describe as sentimentality amongst certain sections of the people than they are on the continent. In Paris and Berlin, for instance, it is usual to see attached to the larger hospitals a separate building, in which are kept the animals for controlling the diagnosis of certain diseases. Then, again, less weight is paid to the results obtained from bacteriology here than abroad. I doubt whether in the large hospitals of the two cities I have named typhoid fever would be diagnosed before the presence of the bacillus typhosus was demonstrated, or diphtheria without the Löffler bacillus. But let us take another point, where there is not the same excuse for us, namely, the bacteriological examination of water. In all the six capitals I am dealing with, except Brussels, at least once a week such examinations of the water are made; and although we may not all attach at present the same importance that Koch does to the number of bacteria per c.c., (you may remember that he proposes to discard the water coming from a filter bed containing more than 100 bacteria per c.c.), and may be more inclined to fall in with the view that more regard should be had to the number of different kinds of bacteria found rather than to the mere number per c.c., yet I think we must all be at one on the value of this routine laboratory work. At Berlin, in addition to the ordinary quantitative analysis for bacteria, the waters of the Spree are regularly examined for cholera bacilli and the effluent from the sewage farm for typhoid bacilli. And here I would emphasise the importance of the discovery made on the filter beds of that city chiefly by Dr. Proskauer, namely the fact (quite revolutionary in its effect on the views held hitherto on the subject) that it is the scum which forms on the surface of the sand, and not the sand itself, which is the effective filtering medium; and, therefore, seeing that this scum takes at least twenty-four hours to form, no water should pass through the filter bed until this time has elapsed. In Berlin, too, they have adopted the method of having all their numerous new filter beds entirely vaulted over, which prevents the water freezing, and so allows the important operation of cleaning them to go on regularly during winter.

Unstinted praise must be given to Paris for the efforts the city has made to provide pure spring water for the inhabitants. From three different sources, the Vanne, the Dhuys, and the Avre, water is brought in each case from a distance of nearly 100 miles to the reservoirs in the city. As is well-known, Paris has a double system of water supplying, spring water for drinking, and river water for public purposes. Theoretically, for so large a city this system is an admirable one, because it must have struck us all at times that there is a fearful waste of good drinking water when only filtered water is used, but practically it must be admitted that the matter has not worked out so satisfactorily, partly owing to the expense of supplying spring water, and partly that in one

way or another access is had to the unfiltered water for drinking purposes. Brussels relies on subsoil water, the gathering ground for which is either park or uncultivated forest land. Stockholm and Christiania both are served with lake water, and the supply to the latter is chemically so pure that for ordinary pharmaceutical purposes it may be used instead of distilled water. There is an interesting point in the water supply of Stockholm, namely, that the level of Lake Maelar, from which the supply is taken, sometimes falls below that of the Baltic Sea, and when this is the case there is a rush of salt sea-water into the lake. If the intake were placed in the middle of the lake the water would at times be so brackish as to be undrinkable. The difficulty is to a great extent overcome by placing the intake at the dead end of one of the narrow arms of the lake.

(To be continued.)

DISEASED MEAT IN ENGLAND AND SCOTLAND.

WE suggested to *The Times* last week that inventions re Chicago meats were not so well calculated to benefit the public as facts respecting the ease with which diseased meats are palmed off upon consumers in the United Kingdom. By a curious coincidence at the time we were writing on the question, Lambeth Police-court afforded the following illustration:—

Thomas Mears, of Peckham Park-road, was summoned by Inspector Homer, on behalf of the Camberwell Vestry, for having deposited on his premises, for the purpose of sale, a quantity of meat which was unsound, unwholesome, and unfit for food.—Mr. G. W. Marsden, solicitor to the vestry, appeared in support of the summons, and Mr. Hood defended.—Mr. Marsden stated that for some time past the defendant, who was a butcher, had been exposing for sale sausages at 4½d. per lb., and in consequence of the smallness of the price Inspector Homer took care to watch the place. On the 8th inst. the inspector went into the shop and found a large quantity of meat which was unfit for food. He seized the meat and brought it to this court, where it was condemned by Mr. Biron, the sitting magistrate. He (Mr. Marsden) believed that the defendant had been previously convicted at another court for a similar offence.—Inspector Homer said he saw seven pieces of cow beef hanging up in the shop. The udder was in a very inflamed state, and, in witness's opinion, the animal must either have died from disease or accident. He seized the meat and had it condemned at this court. The defendant was engaged in the manufacture of sausages when witness entered the shop.—Cross-examined: He could not swear that the defendant was making sausages from this meat.—Dr. Stevens, assistant medical officer to the vestry, said he examined the meat on the day following the seizure. He cut into one of the joints and got a fluid such as one would expect to get from an abscess. There was also fluid in the tissue round the joint.—For the defence Frederick Gage, a carcase butcher, said he supplied the beef in question to the defendant. Witness saw the animal slaughtered. It was a fleshy cow, but short of fat. There were no symptoms of disease except a slight enlargement of one of the knuckles. After hearing of the seizure, witness called at the defendant's shop, and secured some pieces of the carcase, and submitted them to Dr. Cooper. Frederick Gage, jun., who slaughtered the animal, gave similar evidence. Dr. W. A. Cooper said Mr. Gage showed him three pieces of meat. He examined them, and, as far as he could see, the animal was a poor beast, coarse grained, and devoid of fat, but as far as the muscular tissue was concerned, it was perfectly healthy. The defendant elected to give evidence on his own behalf, and said he bought the beef from Mr. Gage. He cut it up and hung it in his shop. The inspector took some of it, and left four pieces behind. Witness saw nothing wrong with the meat. Cross-examined: It was true that he had been convicted on two occasions, but that was 15 or 16 years ago. Mr. Hopkins remarked that the facts of the case were too strong to be got over. The fact was that loathsome meat was found upon the defendant's premises being made into sausages, and, that being so, a magistrate had great difficulty in restraining himself from dealing with the case in a very exemplary manner indeed. He sentenced the defendant to two months' hard labour.

At Derby, on March 12, William Herp, butcher, of Ashborne, was summoned for bringing two unwholesome sheep into the cattle market on February 12. Mr. H. F. Gadsby (the Town Clerk) prosecuted. Thos. Turner, inspector, said that the sheep were sent to Derby in a carrier's waggon, and were sold in the cattle market for 3s. 6d. each. A butcher purchased one and had it killed. It was suffering from a parasite disease, and was quite unfit for food. The defendant was written to, and he replied that the sheep were not suffering from any contagious disease. They had had the foot rot, and he was afraid of killing them at Ashborne for fear of injuring his trade. Fined 40s. and costs, or a month's imprisonment.—Thomas Allsopp, of Radsley, Ashborne, was summoned for bringing an unwholesome calf into the cattle market on February 19. Turner said the calf was alive, but was very small and poor, and was unfit for food. It was not sold. Francis Walker said that such poor miserable skeleton calves were not fit

for human food. They had had considerable difficulty with the slink veal sold in the market. Mr. J. Bailey pointed out that many calves were sent into the market for rearing and not for killing. After hearing the whole of the evidence the magistrates decided to convict, inflicting a penalty of 10s., including costs.—Thomas Marshall was summoned for a similar offence on February 19. Turner said the calf was very poor, and unfit for food. The defendant was unable to appear through illness. Miss Marshall said it was an Alderney cow calf, quite fit for rearing. A penalty of 10s., including costs, was imposed.

At Musselburgh Police-court on March 15, John Lawrie and James Lawrie, butchers, were charged with having the carcase of a cow intended for human food, which was unfit for human food. The accused were also charged with having slaughtered and dressed the carcase of a cow. Evidence for the prosecution showed that a cow belonging to Mr. John Winton, dairyman, Fisherrow, had taken ill and had to be bled to death, and that it was not taken to the public slaughter-house for dressing.—James Thomson, butcher, in the employment of John Lawrie, gave evidence that he attended at Watson's byre on the morning in question and removed the carcase. Asked where he removed it to, he said East Lothian. He persisted in stating that he did not know the name of the place. He also refused to give the location of the place, and was warned that he would be dealt with for contempt of Court. Mr. Lawrie had, said witness, told him to take the carcase to so-and-so in East Lothian. After giving evidence that another cow's carcase was removed to Lawrie's premises for pig's meat, the accused was removed in custody.—Robert Gay, butcher, gave evidence that he had gone along with Thomson to the place in East Lothian, of which he also refused to give the location. He said there was nobody to receive them at the place in East Lothian, which was a "village kind of place." The key was in the door of the shed. After refusing to say where the place was, except that it was a mile's drive along the middle road between Tranent and Prestonpans, witness was removed in custody.—John Gowans, Inspector of Musselburgh Slaughter-House, George Thomson, and A. Reid Young, Inspectors of Slaughter-Houses, Edinburgh, gave evidence that the carcase found was dressed carefully as for human food.—The decision of the Court was that the first complaint was proven against John Lawrie, who was fined £10 and £3 expenses. The second complaint was found not proven against John Lawrie, and that James Lawrie was not guilty. The prosecutor was instructed to make inquiries and adopt proceedings against the witnesses Thomson and Gay for perjury.

At Gullidhall, London, on March 13, John Apsey, Manor Farm, Galthampton, Somerset, was summoned for sending to the Central Meat Market four quarters of beef, the same being diseased and totally unfit for human food.—The defendant through illness was unable to attend and the summons was heard in his absence.—Mr. Vickery prosecuted on behalf of the Commissioner of Sewers, and Mr. Stephenson, barrister, defended.—Inspector Hoare, who seized the meat, said it was very bad indeed—in fact, the worst he ever saw.—Dr. W. Sedgwick Saunders, medical officer of health for the City, stated that he had examined this meat. It was simply a mass of flesh in a state of decomposition. It was dark, and emitted a bad odour.—Other evidence was given, and it was stated that the animal was found dead in a ditch. It was dressed and sent to London, the heart and liver being given to pigs.—Mr. Stephenson said the defendant had acted innocently in the matter.—The Alderman imposed a fine of £40 and costs or a month. As the accused was ill, he would give him a month to get the money.—Herbert Sawyer, a farmer, Tunstall, Suffolk, was summoned for sending to the Central Market twelve pieces of pork which were diseased and unfit for food.—Dr. Saunders said the meat was dark, soddened, and stinking. Being pork, it was more particularly dangerous to health if eaten.—Defendant, who received a good character, was fined £10 and £3 3s. costs.

These are just a few cases culled from the public press in four days, and they are not evolved from the imagination as the statements in *The Times* were. Chicago or any other meats would need to be vile indeed if they can beat some of our own products, and as to the law in America upon this question, if it can surpass in shielding offenders from real punishment our native article it must be very rotten indeed.

GLAMORGAN COUNTY COUNCIL AND PROTECTION FROM ADULTERATION.—The Local Government committee reported that one of the inspectors had been directed to employ a solicitor and counsel to argue before the High Court a case granted by the Pontypridd magistrates upon the question whether a wholesale dealer could be proceeded against for false warranty when the sample purchased from the retailer had not been required to be divided.—Mr. R. Morris wished to know on what basis those samples were taken?—Mr. W. H. Morgan explained that, according to the present law, if adulterated food was found in a shop and the retailer produced a warranty, they could not get at the offender. But the law said that if the warranty was false they could proceed, and they intended to prosecute wholesale dealers where they could in such cases.—Mr. T. J. Hughes, referring to the sample of milk referred to, remarked that proof of adulteration was very difficult, for on one occasion a case in which a man had been charged with the offence was adjourned to have a sample direct from the cow, the result being that the fresh drawn sample was found to be adulterated to the extent of 20 per cent.

ADULTERATION PROSECUTIONS.

ALLEGED ADULTERATION AT SILKSWORTH.—A charge under the Food and Drugs Act was brought at the Sunderland County Petty Sessions, on March 16, against R. Makepeace, grocer, Silksworth, the prosecution being instituted by Mr. Scott Elder, chief inspector under the Act for the county. Mr. A. T. Crow, jun., appeared for the defence. Defendant, it was alleged, was selling adulterated cassia. At the outset Mr. Crow argued that the case was a test one brought by the prosecutor. In a previous case the authorities of Somerset House had disagreed with Mr. Stock's analysis in regard to lard. The defendant, he added, possessed a guarantee of purity from the wholesale house from which the cassia was obtained. Mr. Elder explained, amid laughter, relative to the lard case, that Mr. Stock had been called professionally to Somerset House in order to show the experts there how to discover adulteration in lard. Mr. Crow said his client disputed the analysis in the present case, and asked that samples be sent to Somerset House. George Wilson, assistant inspector, proved buying three ounces of cassia for 4½d. at defendant's shop on the 14th ult. Mr. Stock, county analyst, said the cassia contained 30 per cent. of starchy matter. The Bench examined the samples with a microscope. They adjourned the case for a month, and ordered the samples to be sent to Somerset House.

CAUTION TO MARGARINE DEALERS.—At the Rotherham Borough police-court, on March 14, Henry Albert Woolley, of Attercliffe, trading as the Danish and Swedish Butter Company, in Effingham-street, Rotherham, was summoned for a breach of the Margarine Act. Mr. Hickmott, the town clerk, prosecuted, and said the defendant was charged with exposing for sale, by retail, a certain substance known as margarine without having it labelled with letters 1½ inches square. Mr. C. E. Parkin, jun., assistant inspector, gave evidence. When he divided the substance into three parts, the defendant's assistant refused to take one. The certificate of the public analyst, Mr. A. H. Allen, of Sheffield, showed that there was little or no butter in the substance wrapped in a paper on which was printed "Fresh churned margarine." The assistant appeared, and said it was his fault, and not that of his employer, who was too ill to attend. Fined 10s. and costs.

FILLED CHEESE AND SPENT GINGER.—At Liverpool, on March 13, Charles M. R. Dixon, provision dealer, Wavertree-road, was summoned for selling two samples of cheese to Inspector Baker which on analysis were found to be adulterated with lard to the extent of 20 and 18 per cent. respectively. The defendant pleaded that the cheese was warranted pure when supplied to him. Mr. Stewart allowed the plea, and dismissed the case.—For selling ginger, which was adulterated with 35 per cent. of spent ginger, Robert Monteith, of Wavertree-road, was fined 10s. and costs.

LARD.—At Ripon, on March 15, an adjourned case came up for hearing against John Edward Simpson, of Bishop Monkton, grocer, and Ann Grayson, of the same place, grocer, for having sold to Inspector Gamble, on the 19th December, lard alleged to be adulterated with 15 per cent. of cotton seed oil. Mr. Brutton, from the West Riding Solicitor's office, prosecuted, and Mr. Wright, solicitor, Liverpool, defended on behalf of Messrs. Bancroft and Co., lard refiners. At the hearing a month ago, Mr. Horridge, instructed by Mr. Wright, raised objection to the form of the information, on the ground that under the Act of Parliament the analyst was required to give the percentage of the material added for the purpose of adulteration. In this case he contended that the certificate was of an illusory character, because after stating the lard was adulterated with 15 per cent. of vegetable oil, it was added "apparently cotton seed oil." As there were 500 kinds of vegetable oils it might necessitate going through the whole of them. After some discussion Mr. Brutton agreed to the withdrawal of the word "apparently" from the information. After stating the facts of the case, Mr. Brutton said it was alleged that cotton seed oil was used for adulteration because whereas it was 15s. per cwt., pure lard was 34s. per cwt.—Mr. Alfred Henry Allen, analyst for the West Riding of Yorkshire and for the city of Sheffield, stated that of 150 specimens of lard received last year he found no indication of adulteration. He made a most exhaustive examination, and submitted the lard to three principal tests. He also produced test tubes showing the condition of lard under different treatment. He purposely added 15 per cent. of cotton seed oil to pure lard, and it had the same appearance as the lard sent to him for analysis.—Mr. Allen was cross-examined at length. Mr. Edward Bevan, analyst for the county of Middlesex, stated that he had come to the conclusion that the lard contained cotton seed oil.—Mr. W. F. K. Stock, analyst for the County of Durham, came to a similar conclusion.—John Morrell, lard refiner, Birkenhead, was called, but Mr. Horridge said he was not going to contend that if 15 per cent. of cotton seed oil was added it was not adulteration under the Act. He cross-examined Mr. Morrell at some length to show that Messrs. Bancroft and Son, who were the real defendants in the case, were of high standing as lard refiners. He also stated that lard from Chicago was sent under the certificate of the Board of Trade.—The defence was an absolute denial of any adulteration.—Charles Stevenson Rigg, managing director of Messrs. Bancroft and Son, denied that cottonseed oil was ever used on their premises.—Wm. Peters, warehouseman, corroborated.—Dr. Campbell Brown, public analyst of the county of Lancashire and the city of Liverpool, had had great experience in testing American lards, and he had melted down portions of an American hog to obtain accurate tests. He had

examined specimens of the lard purchased at Bishop Monkton, and found no trace of cotton seed oil.—Mr. E. W. T. Jones, county analyst for Staffordshire, was also a specialist in the discovery of cotton seed oil in lard, and could find no trace in the specimen examined.—After a hearing extending over several hours, the Chairman said the scientific evidence was so contradictory that they did not feel justified in deciding the case, but would submit the third sample of the lard, still in reserve, to Somerset House, and would adjourn the case for a month for their report.

The Somerset House chemist's certificate was produced on March 15, the Somerset House analysts being of opinion that neither of the samples in question contained cotton seed oil. Mr. Wright said he appeared for Messrs. Bancroft, the real defendants, and asked for the dismissal of the cases, with substantial costs against the county authorities. Messrs. Bancroft were refiners of the very highest position, and had never been fined for adulterating their products. They had been put to great expense in defending cases, and had also gone to expense in restraining other manufacturers from adulteration. The defence of this case would cost about £140. Mr. Brutton submitted that the certificate from Somerset House was not satisfactory or conclusive. The County Council had no ulterior object in instituting the prosecution, but were simply doing a public duty. The Bench decided to dismiss the cases, making no order as to costs, except that the costs of the Somerset House analysis would be divided between the two parties.

SEIDLITZ POWDERS, MARGARINE, AND TINCTURE OF RHUBARB.—At Todmorden, on March 12, Robert Newell, herbalist, of Todmorden, was summoned for selling seidlitz powders which were not of the quality demanded by the purchaser. Mr. W. H. Boocock, solicitor, Halifax, appeared to defend, under instructions from the wholesale dealers of the powders. William H. S. Crabtree, inspector for the Sowerby division, deposed that on January 31 he visited defendant's shop and got some of the powders named for analysis. The packets were unequal in weight, and only averaged 112½ grains instead of 160, so that they were deficient in the medicinal properties demanded by the British Pharmacopoeia. Mr. Boocock said some were over the required weight, and others under the required weight. Defendant said he had sold them in the best of faith, and did not know they were deficient in weight. Fined 5s. and 23s. costs.—Thomas Richard Sparks, lodging-house keeper, of Knowlwood, was charged with selling margarine in paper not marked as required by law. Prisoner pleaded guilty, but said he did not know he was required to do as named. He was fined 2s. 6d. and costs.—Young Spack, lodging-house keeper, of Knowlwood, was summoned on three charges. The first one was like the previous defendant, the second was for exposing for sale margarine which was not marked, and the third was for selling tincture of rhubarb not of the nature and quality demanded by the purchaser. In the first two charges, defendant was fined 2s. 6d. and costs; total, £2 12s. As to the rhubarb, defendant said it was not for sale, and the Bench gave him the benefit of the doubt by dismissing it.

WATER IN THE WHISKY AND MILK.—At Coventry on March 18 there was a batch of summonses taken out by the Sanitary Committee against persons for alleged adulteration.—William Bennett, proprietor of the Opera House, came up in respect of having 7½ per cent more water in the whisky sold at the theatre bar than was allowed by law. The Bench imposed a penalty of 47s. 6d. in all.—Eliza Purcell, Clarendon Arms, Bailey-lane, was summoned for a like offence, the extent of the adulteration being the same. She had to pay £1 and costs.—James Bonham, 34, White Friar-street, Joseph Overton and Samuel Dowell, 75, Far Gosford-street, were summoned for selling adulterated milk, and each had to pay £1 and costs.

WHISKY.—William Johnson, licensed victualler, Cliffe, was summoned at Rochester for selling Scotch whisky which was 241 below the legal limit, on January 26. P. C. Andrews said he purchased a pint of Scotch whisky at the defendant's for the purpose of analysis. The defendant then admitted that it was thick. Supt. Lacy produced the report of Dr. Adams, the analyst at Maidstone. He also said that the last witness got some rum from the defendant's, but the analyst had not found fault with it. Defendant was fined 10s. and 10s. costs.—At Malling Petty Sessions, Henry Baker, Bull Inn, Newwhythe, was summoned for selling adulterated whisky on February 4. Mr. F. Argles pleaded guilty on defendant's behalf, to the charge. Supt. Lane said the whisky was found to be 1.95 degrees below the legal limit.—The Bench ordered defendant to pay the costs only, 6s. 6d.

THE FROST AND THE MILK SUPPLY.

At Lambeth Police-court on March 13, William Tarry, of Manor-place, Walworth, was summoned before Mr. Hopkins by Inspector Bullock, on behalf of the Newington Vestry, for selling milk containing 13 per cent. of extraneous water.—Mr. Ricketts, who defended, remarked that at the time the sample was taken the weather was very cold, and the milk, when it was delivered to the defendant by the contractor, was in such a frozen condition that it could not be passed through a strainer without first being heated in a copper. His case was that the fact of the milk being frozen rendered it impossible to get a fair sample of it. The portion which froze was the water portion, and that would be without its proper proportion of cream and solids, and in the portion which was not frozen there would be an undue proportion of cream and

solid. He contended that the Act was not aimed against an accident of this kind, but against adulteration.

The defendant was examined, and said the milk when it came to him was solid ice. Before the churn could be opened a hammer and chisel had to be used. (Laughter.) He was very fond of a basin of milk for supper, but he would not drink milk after it had been frozen because it was impoverished.—Mr. Alfred James De Hailes, an analyst, stated that when milk was absolutely frozen in a large block the cream rose and separated into little lumps of butter, and the principal ingredients went to the centre and formed a core, around which there was practically pure water ice. If a portion of the milk was frozen, it was impossible to get a fair sample of it. Some portions would be extremely rich, and others extremely poor. Mr. Hopkins said he was quite willing to believe that this was an accident, but he noticed that the defendant, whilst he was ready to sell the milk to his customers, did not care to drink it himself. He fined defendant 20s. and costs.

John Hearn, of Manor-place, appeared to answer two summonses, one for selling milk containing 9 per cent. of extraneous water, and the other for selling milk containing 10 per cent. of extraneous water.

Mr. Ricketts, who appeared for the defendant, said his defence was the same as in the last case, viz., that the samples taken formed portions of frozen milk.

Mr. Hopkins said he was ready to believe that it was an accident. He fined the defendant 10s. and costs on each summons.

Walter Bastard, of St. Paul's-road, was fined 20s. and costs for selling milk containing 10 per cent. of extraneous water, and Alfred Follows, of Manchester-buildings, East-street, was also fined 20s. and costs for selling milk containing 12 per cent. of extraneous water.

DANDELION COFFEE.

AT Swindon, on March 14, Henry Ackling, Fleet-street, New Swindon, was summoned for selling as coffee a compound which consisted of 100 per cent. of chicory. Mr. H. Bevir appeared for the prosecution, and Mr. A. E. Withy defended. Mr. Bevir, in opening the case, stated that the tins containing the mixture bore on the label the words "Allan Hill & Co.'s Taraxacine or Dandelion Coffee," a note being added that "Taraxacum Dens Leonis, a substance extracted from the root of the dandelion, has for a long time been held in high esteem by the principal English and Continental physicians as an excellent stomachic and tonic. The Taraxacine or Dandelion Coffee," the label continued, "is a compound of the finest coffee, together with a proportion of the dandelion root and other vegetable products, derived from plants of the same order." The compound was sold at 7d. per tin. Mr. Bevir went on to say that on a sample of the "coffee" being submitted to the Public Analyst it was found to consist entirely of chicory. He did not suggest for a moment that Mr. Ackling was guilty of fraud, but he was technically guilty, and the public must be protected. Evidence of purchase of the coffee having been given by Mr. S. Smith, inspector under the Food and Drugs Act, and a lad named Curtis, Mr. Withy addressed the Bench for the defence. He said it was a strange thing that Mr. Ackling had been in business for 27 years, and for 20 years had been selling the identical article which was the subject of the present proceedings. People had been coming to him for the "coffee" week after week, and would have no other preparation. The only profit Mr. Ackling derived was 1d. or 1½d. a tin. He asked the magistrates to say defendant had acted as an honest tradesman, and inflict as small a fine as possible, as the law had been unwittingly broken. The magistrates said they believed Mr. Ackling had not been guilty of intentional fraud, but the public must be protected. He would be fined £2 10s., and £1 10s. 6d. costs.

CHLORODYNE LOZENGES.

CAUTION TO CONFECTIONERS.

WILLIAM NASH, confectioner, of 64, Regent-street, New Swindon, was summoned for selling "chlorodyne lozenges" not of the nature and substance demanded. Mr. Bevir said the lozenges were stamped "Linseed, liquorice, and chlorodyne," but the report of the analyst showed that they were composed of cane sugar, linseed, and linseed husk. The analyst reported that he could find no chlorodyne, and a very doubtful trace of liquorice. The amount paid by the boy Curtis was 8d. per half-pound. Mr. Withy said his client bought the lozenges honestly and sold them honestly, and he was an innocent breaker of the law. It was very problematical whether defendant could get satisfaction from the wholesale house. In any case it would mean a considerable amount of litigation, which was no easy matter for a man in defendant's position. Wholesale houses were like corporations—they had no souls to be saved and no bodies to be kicked. Mr. Bevir said the name on the invoice produced by defendant was "Bycroft and Co., Sparkbrook, Birmingham, manufacturers of confectionery by steam power." Fined 9s. 6d. and £1 10s. 6d. costs.

RESTAURANT BUTTER.

MESSRS. PEARCE, trading as Pearce's Dining and Refreshment Company, Limited, of the registered office, 51, Farringdon-road, were summoned at Worship-street, on March 18, for that being dealers by retail in margarine they did expose such article for sale

without having a label attached correctly describing it. William Murray, manager of the company, was also summoned in connection with the same offence.—Mr. Morton Smith, barrister, prosecuted; Mr. Charles, solicitor, defended.—Counsel, in opening the case, said that the defendant Pearce had started a number of places, some of which were carried on under the name of "Pearce and Plenty," and others as the "British Tea Table Company," the latter being supposed to supply a higher quality of article to a superior class of customers. At the latter places they had refreshment cards, on which "bread and butter" was stated to be sold at per slice. The prosecution in this case was taken by the Pure Butter Association. A person named Moore, in the employ of the association, went to one of the establishments of the "Pearce and Plenty" kind, at Great Eastern-street, and there asked for 3d. worth of butter. A young woman serving there said they had no butter, but had margarine, and took down a dish on which a large quantity was exposed. She was about serving him when the manager, Murray, appeared, and asked what he wanted. Being told, the manager said they did not sell butter to go out, but he could have some on bread, and that it was margarine.—Counsel said the defendants had been served with notice to produce some of the tickets, or shop announcements, describing the article sold as "butter," but it was also admitted that other announcements described it as Danish butter and margarine.—The magistrate (Mr. Haden Corsor) asked if there was an exposure for sale within the meaning of the Margarine Act, and counsel read the section, and, after some argument, Mr. Corsor said he would accept it that the article being in view, and such as was used for supply, it was on sale by retail.—Evidence was then given by Moore, who said he was an "inspector" to the association. He said that on entering the shop named he called for a cup of coffee and two slices of bread and butter, which were served. After that he asked for four slices of dry bread and 3d. worth of butter. It was then that the young woman serving took down the dish from the shelf behind the counter. There was no label to it. After the discussion with the manager he said he had come to get some of the butter for analysis, and was then ordered out of the shop.—The witness was cross-examined as to who comprised the Butter Association, and he said it was, so far as he knew, butter merchants. Being pressed for the names he gave Denny and Co., of Hibernia-chambers, and Lovell and Christmas as two, but he said he took his instructions from the secretary, Mr. Stewart. He admitted that the notices produced, or something like them, were in the shop, conspicuous enough to the public on attention being called to them.—David Toler, also in the employ of the association, corroborated, and as defendants did not contest the ownership of the shop, that closed the case for the prosecution.—The solicitor for the defence said that the notices described what was sold as "slices" and there was a notification on the same placard that nothing but the best Danish butter and margarine were supplied. That was a mixture, and he contended that was a compliance with the Act. It would never be possible to wrap up every slice of bread and butter in a paper bearing a printed label, and he submitted that the Act never contemplated such a course.—John Pearce, managing director of the company, was called to state that the attendants were instructed not to sell butter or supply any of the article except when spread on bread. The board produced, which announced, "Coffee, bread, and butter served here," was, he said, an old one, and he did not know it was in the shop. The other placard hung over the dish of cut bread, etc., and Danish butter and margarine. Counsel produced a certificate of analysis, and asked if it correctly described the article as 80 per cent. of margarine, and 20 per cent. of butter.—Witness said the percentage was not correct.—Cross-examined, the witness said that sometimes customers asked for bread and butter, and then they were told it was margarine. That, at least, was the instruction for all shops, of which there were 39.—The defendant Murray, manager of the shop, and Emily Shearer, attendant, gave evidence as to the incidents of the visit of the prosecutor's witnesses. The latter denied the statement that she was about to serve threepennyworth of the article when stopped by the manager.—On the conclusion of the defence counsel called attention to the case of "Wheat v. Brown," 61 J.P. (magistrates' cases), and Mr. Charles said that it referred to sale in "parcels"—a great distinction to the sale in the present case.—Mr. Corsor said the summons was for "exposing" for sale, and counsel said there was only sale of two kinds, wholesale and retail, but he (Mr. Corsor) thought there might be another kind of sale—in a form for the convenience of the public. It was not for the public to go into an hotel—and these restaurants were hotels in a minor form—and because margarine was supplied summon the proprietor under the Act. It might be necessary to get an Act of Parliament to catch him, but at present the meshes of the law as already spread were not, in his (Mr. Corsor's) opinion, sufficiently wide to catch Messrs. Pearce. He had come to the conclusion that the margarine in question was not exposed for sale, because it was on a shelf behind the counter. It was there for the convenience of being spread on slices of bread, and not for sale within the meaning of the Act. On that ground he dismissed the summonses, ordering the prosecution to pay two guineas costs.—Counsel said it was agreed there was no label on bread or margarine.—Mr. Corsor said he held it was not necessary.—Counsel then said he was instructed to ask for a case for the High Court.

! ! ! ! !—ROBERT KOCH, of tuberculin and bacteriological fame, has sought the medical advice (?), and placed himself under the care of, Father Kneipp, the clerical water-cure practitioner.

THE QUALITY OF WORKHOUSE BUTTER.

At the meeting of the Stratford-on-Avon Board of Guardians, on March 15, Mr. Euston complained of the quality of the butter used in the house. He went through the Infirmary that morning, and one of the patients showed him a piece, and said he could not eat it. The butter was not fit for a dog to eat. A plate of the butter was passed round the Board, and there was a consensus of opinion that it was not very relishable. The Hon. Miss Verney pointed out that the butter only cost 10d. per lb., and that they could not expect the best quality for that price. She should not mind eating it. The Master said he had had no complaints about the butter, and he noticed nothing wrong with it when it was delivered. It was tub salt butter. Miss Verney said she tasted it a fortnight ago and it was not so bad then. The Master was ultimately directed to return any butter of a similar quality. The Board could buy wholesome appetising margarine at far less money.

THE DANGERS OF TINNED MEAT.

On Sunday night William Melding, a young collier, and his wife, Margaret Melding, who lived in Main-street, Billinge, near St. Helens, were taken seriously ill. It was ascertained that at half-past four, when they had their tea, they partook of some tinned tongue, which had been procured from one of the shops in the village. About four hours later the husband was suddenly taken ill, and almost immediately afterwards his wife became ill, and Dr. Reilly, who was at once sent for, remained at the house for three hours. Husband and wife lapsed into an unconscious state, and remained in that condition until Monday morning, when they recovered consciousness. They are now progressing favourably, but the husband, who had partaken of a greater portion of the meat than his wife, is in a more serious condition.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. FARMER'S EVIDENCE.

XXXIII.

(Continued from page 84.)

All my milk comes to London sealed; at least, all that I send to the Aylesbury Dairy Company.—And, therefore, it cannot be tampered with on the way?—No.—Do you think that tampering with milk on the way is at all common?—I think it is done.—Occasionally?—Yes; Not necessarily after it gets to the railway, but after it leaves the farm. I have known it done by farm servants when it is on the road to the station.—And, as a protection from that, you think it is necessary that the cans should be sealed?—Yes, and I have known it done at railway stations before it has left.—And you want the sealing to be universal on that account?—I think it would be a very great advantage.—Did I correctly understand you to say just now that one of the dangers of a low standard for milk, say three per cent. of fatty solids, was that it might lead some people to feed their cows in such a way as to produce a larger quantity of milk and so deteriorate the natural quality?—I should think it would be very bad judgment in any man doing that, because he not only deteriorates the quality of his milk, but deteriorates the quality and health of his cow; and I cannot conceive that he would do it; but it may be done. If you put it to me that three per cent. was a low percentage, three per cent. is low as compared with what I have sent; but I should hesitate to put the standard much higher than three per cent.—You think that with a standard of three per cent. any attempt on the part of the farmer to so feed his cows as to get the milk down to a standard of three per cent. would be bad policy on his part?—I think it would be

extremely bad policy on his part.—Because it would deteriorate the quality of his cattle, and generally injure the value of his stock?—Yes.—And in that way it would counteract the temptation of which you spoke?—I think so.

MR. THOMAS CARRINGTON SMITH, examined :

Sir Walter Foster: I think you come from Admaston, near Rugeley, in Staffordshire?—Yes.—And you are a farmer there?—Yes.—Do you farm largely?—No, not largely, I keep about 50 dairy cows.—And about how many acres of land have you?—Under 300 acres.—You are a member of the Margarine Committee of the Central Chamber of Agriculture?—Yes.—And you were Chairman of the Staffordshire Chamber of Agriculture?—Yes, for many years.—And you are an Alderman of the County Council?—Yes.—You generally support, do you not, the recommendations of the Margarine Committee of the Central Chamber of Agriculture?—Yes.—And you think that the adulteration of farm produce should be treated in the same way as contagious diseases are treated as regards animals, namely, by inspection at the ports, and the stoppage of all adulterated goods?—Yes.—You regard it as dangerous to the community that they should be allowed to come into the country?—Not precisely so, but in order to protect the honest dealers and to protect the public.—Then you can hardly put it on the same level as the contagious diseases in animals, can you?—On the same level as regards inspection but not for the same reasons.—That is to say, you would have your inspections as accurate in this case as in the other, but for different reasons?—Yes, and I explain my reasons: In the County Council of Staffordshire we find it invidious to prosecute a retail dealer who sells adulterated goods when those adulterated goods have been imported from abroad, and we think that if the same steps were taken with respect to the importation of articles of food generally, which are taken with respect to the importation of tea, then the importation of adulterated goods would be checked at the port of entry. I am informed that such an inspection is obligatory in the case of tea, and that such inspection has checked the importation of adulterated tea; and I fail to see why the same protection for the honest producers and for the buyers should not be extended to other articles of food.—How far would you extend it with regard to foreign produce; to what articles would you extend this principle of inspection at the ports of entry?—To all articles of food and drink.—To everything produced on the farm?—To all imported articles of food and drink, not necessarily produced on the farm, because there are plenty of articles that farmers do not produce which are imported.—You would stop them too?—I would subject them to inspection.—Do you think that that would have any effect upon the food supply of the country?—Yes, it would; it would raise the value of the food imported.—The feeding value do you mean?—Yes.—You do not mean the price?—That I cannot tell; probably it would raise the price, because it would clear the ports considerably of articles that are sold under false denominations?—That is to say, it would lessen the number of articles competing in the market, and so probably raise the price of those that did get into the market?—Possibly.—And that would be beneficial, you think, to the agricultural interests?—And to the consuming public.—It would be beneficial to the consuming public on the ground of the purity of the article sold, and to the agricultural interest possibly on the ground of price?—Yes.—You would have not only uniformity of practice at the ports with reference to this inspection, but you would have uniformity of administration, if possible, throughout the country?—So far as possible, for this reason: I have here in my hand a report of our county analyst and our county inspector, who state that one of their main difficulties in the administration of the Sale of Food and Drugs Act is that some neighbouring authorities allow the existing legislation to be inoperative.—That is to say, that in certain districts the administration is comparatively imperfect, while in other districts it is more accurate?—We have found out by returns which the Central Chamber

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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—“Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases.”

M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—“Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared.” At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—“Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter.”

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value, in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—“The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water.”

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have got in, that certain local authorities never take any samples at all.—And in spite of pressure from time to time put upon them by the Local Government Board?—That is so.—You therefore would have some new legislation which would give powers to a central authority, possibly, to stir up these various local authorities to uniformity of practice?—To employ inspectors of their own, travelling inspectors.—That would follow from the uniformity of practice?—Yes, there is analogy there again with the Contagious Diseases Animals Act, although I can see that the analogy cannot be carried through, inasmuch as we have found that the administration of the Contagious Diseases Animals Act under the various local authorities was very inefficient, in some cases well carried out, and in others, badly carried out; and we have found a vast advantage in using the powers of a central authority, and in having centralisation.—Is your experience as a member of a local authority in favour of much interference on the part of central authorities?—Yes, I must say regretfully that I must admit that, because centralisation is contrary to my own first views; but, with respect to adulteration and to disease, I have found so great an advantage from centralisation that I am bound to say that we cannot get on without it.—In spite of your prejudice or your judgment in favour of local administration, you are obliged to admit that central interference might be useful with regard to adulteration as it has been with regard to the Contagious Diseases of Animals Act?—Yes; we have proved that it has been so in regard to contagious diseases, from the fact that in the area of a geographical county you have various conflicting authorities who act on various conflicting views.

(To be Continued.)

SANITARY ITEMS.

CREDITON.—The following six were selected, out of 34 applicants, for the post of surveyor: H. G. Warne (Okehampton), W. H. Bolt (Sandford), W. M. Jarvis (Kingsbridge), John S. Davey (Tavistock), F. A. Baker (Cheriton Bishop), E. W. Hicks (Truro). Mr. Pridham, the present surveyor, said he could not apply, as the Council would not allow him to retain his other work. Mr. Pridham was given a month's notice as sanitary inspector. The decision will be made this week.

HALESOVEN.—Mr. B. Perrins, of Kidderminster, has been appointed surveyor, at a salary of £120 per annum. There were over 50 applicants for the appointment.

KINGSBRIDGE and Salcombe Port Sanitary Authority on Saturday increased the salary of Dr. Arthur Pearce, of Salcombe, as medical officer of health, from £10 to £15, and that of Mr. J. H. Patey, inspector of nuisances, from £5 to £10, subject to the approval of the Local Government Board, and, provided it was sanctioned, that half the salaries be repaid by the County Council. The Local Government Board had notified their refusal to sanction the latter course, as they considered the remuneration inadequate for both offices.

MARGAM URBAN DISTRICT COUNCIL.—Mr. W. F. Bishop has been unanimously re-appointed sanitary inspector.

THE new epidemic disease which has come out of the wilds of Siberia, and has reached Berlin on its westward march, means either death or toothlessness to its victims. The *Spectator* describes it as a fierce fever which attacks the mouth, and Professor Virchow has expressed the opinion that it is a variation of the dreaded foot-and-mouth disease to which cattle are subject, having its origin in the drinking of milk taken from diseased cattle. If this disease should spread among the populations of the West of Europe it will be the greatest affliction that has been seen since the black plague. We should have thought that the influenza was quite enough to go on with.

WIRKSWORTH.—A Local Government Board Inquiry was held in the Wirksworth Town Hall on Tuesday, the 12th inst., by Mr. Rienzi Walton, O.E., on the application of the Wirksworth Council for borrowing powers for £5 600 for works for sewerage and sewage disposal. Mr. T. S. McCallum, A. M. Inst. C.E., explained the alterations in the arrangement of the original

scheme, the chief being the substitution for the old style of quiescent precipitation tanks of the continuous upward flow circular tanks, with the Candy Patent arrangement for the automatic removal of the sludge. Further evidence was given by the Medical Officer, Mr. Broster, M.R.C.S., and by Dr. Barwise, the Medical Officer to the county of Derby. This latter gentleman expressed his thorough satisfaction with the scheme submitted, which had received the approval of the County Council, and stated, in answer to the opposition, that in his opinion the results obtained by the installation projected would give complete satisfaction, and incidentally mentioned his approval of the process to be adopted, namely, "The International Process." Further evidence in support was given by Mr. Pollard, M. Inst. C.E., of Messrs. Pollard and Tingle, Westminster, also by Mr. Naylor, F.C.S., Chief Inspector of the River Ribble Joint Committee; Mr. Hextall, instructed by Mr. Symons, solicitor, Wirksworth, opposed the scheme on behalf of certain ratepayers. At the close of the day's proceedings, Mr. Hextall intimated that the opposition was not in any way directed against the International Process, but to the question of site, etc. The Inspector adjourned the inquiry to the 5th April next.

SEWAGE PURIFICATION.

AT the request of the authorities of the School of Military Engineering at Chatham, Mr. Charles H. Beloe, M. Inst. O.E., of Liverpool and Westminster, recently delivered a lecture on the important subject of "Sewage Purification."

The lecture was well attended by the officers of the Royal Engineers, who had courteously invited the members of the local District Council to attend, as that body are understood to be contemplating some method of dealing with the sewage of the locality.

The lecturer described various processes of sewage treatment which had been introduced since he delivered a similar discourse at the same place seven years ago. He advocated the purification of sewage by chemical treatment in properly-designed tanks, and subsequent filtration through artificial filters containing some material possessing high oxidising powers. He described in detail some works recently designed by him for purifying sewage by the well-known International Process.

The lecture was illustrated by numerous carefully executed diagrams and by several excellent models of tanks, filters and machines for adding chemicals to sewage. On the motion of Major Scott-Moncrieff, R.E., a hearty vote of thanks was awarded to Mr. Beloe for his interesting and valuable lecture.

PROVIDING FOR "LLOYD'S COWS IN AMERICA."—The *Detroit Journal* is responsible for the story that Senator Brundage's Pure Food Bill has the following queer misprint:—One section of that bill provides that "skimmed milk" shall be branded on the top and sides of cans containing that article. It is printed that all "cows shall be branded on the top and sides with the words 'skimmed milk.'"

ALCOHOLIC TERTOTAL DRINKS.—Unless something more is done to secure the honesty of alleged temperance beverages it would appear that the drinkers of such liquors are as likely as not to unconsciously imbibe an intoxicant article. At least such would apparently be the case, according to the *Brewers' Journal*, which states that from 40 examples examined an analysis proved that these contained on an average 4.8 per cent. of proof spirit, ranging from 3.1 to as high as 8.2 per cent.

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APPOINTMENTS VACANT.

ASSISTANT SURVEYOR AND SANITARY INSPECTOR.—(Knaresborough, March 25.)—Salary £70. State age and particulars, with two testimonials, to James Smith, Poor Law Offices, Knaresborough.

BURGH SURVEYOR.—March 25.—Stirling Town Council, £175. Mr. T. L. Galbraith, town clerk.

CLERK OF WORKS.—Leighton Buzzard, March 26.)—For Sewerage and Waterworks, £3 10s. weekly. Building qualifications necessary. Three testimonials, to John Newton, clerk, Leighton Buzzard.

HIGHWAY SURVEYOR.—March 25.—Sherburn District Council. Mr. W. O. Woodall, clerk, 32, Queen-street, Scarborough.

HIGHWAY SURVEYOR.—March 25.—Aethwy District Council, £80. Mr. R. B. Evans, clerk, Union Offices, Bangor.

HIGHWAY SURVEYOR.—March 25.—Ogwen District Council, £60. Mr. R. B. Evans, clerk, Union Offices, Bangor.

HIGHWAYS SURVEYOR.—(Aylesbury, March 26.)—Three testimonials, and particulars, age, experience, and salary required, to F. B. Parrott, Clerk, Aylesbury Rural District Council.

HIGHWAY SURVEYOR.—(Bromsgrove, March 25.)—Salary £120.—State age, experience, and send three testimonials, H. D. Holloway, Clerk, Union Offices, Bromsgrove.

HIGHWAY SURVEYOR.—(Castle Donington, Derby, March 28.)—£60.—Address, J. W. Newbold, Clerk, Derby, stating age, etc., with copies of testimonials.

HIGHWAY SURVEYOR.—(East Elloe, R.D.C.)—£100 and £25 for horse and trap.—Richard P. Mossop, Clerk, Holbeach.

HIGHWAY SURVEYOR.—(Hungerford, March 26.)—£80.—Particulars with three testimonials to H. D'O. W. Astley, Clerk, Hungerford.

HIGHWAY SURVEYOR.—(Northaw, April 1.)—Write for particulars to G. A. Ashton, Clerk, Northaw.

HIGHWAYS SURVEYOR.—(Monks Kirby, R.D.C., March 26.)—State age, experience, with four testimonials and salary required, to T. C. Bodycote, Lutterworth.

HIGHWAY SURVEYOR.—(Preston, March 25.)—£225. State age, qualifications, experience, with three testimonials, J. Clarke, Clerk, Preston.

HIGHWAY SURVEYOR.—(Smallburgh, R.D.C., March 30.)—£100 with £25 extra for horse and trap.—Applications, with three testimonials, to Fairfax Davis, Clerk, North Walsham.

HIGHWAY SURVEYOR.—(Long Crendon, R.D.C., March 25.)—£80.—Applications, with three testimonials, to William Parker, Clerk, Workhouse, Thame.

SANITARY INSPECTOR.—(Bexley, March 26.)—£80.—State age and particulars, with three testimonials, marking envelope "Inspector of Nuisances," to Stephen Cannon, Chairman, Bexley Urban District Council, 3, Oxford-place, Bexley.

SANITARY INSPECTOR & SURVEYOR.—(Escrick Union, R.D.C., March 26.) State age, salary, with testimonials, to James Leeming, Clerk, Museum-street, York.

SANITARY INSPECTOR & SURVEYOR.—(Hayward's Heath, March 26.)—Applicants must have certificate Sanitary Institute. State age, salary, qualifications, with testimonials, to Edward Waugh, Clerk, Hayward's Heath.

SURVEYOR.—(Stratford-on-Avon, March 27.)—£200.—Three testimonials and particulars, endorsed "Borough Surveyorship," to Robt. Lunn, Town Clerk.

SURVEYOR, &c.—April 1.—Swanage District Council, £100. Mr. T. Randell, town clerk.

SURVEYOR'S ASSISTANT.—Newburn Urban District Council, £2. Mr. H. W. Taylor, surveyor, Urban District Council Offices.

"Of late," says *The Surveyor*, "much has been said about the threatened danger to health from effluvia arising from streets, and it has been held that wood paving increases the possibility of atmospherical contamination. Various experiments have been made to determine whether such danger really does exist. Mr. J. M'Garnie Smith, of Sydney, is the latest worker in this field. He examined moisture and material obtained from beneath the wood pavement of Sydney for the presence of pathogenic organisms. Bacilli and micrococci were plentiful enough, but under the most careful cultivation no evil could be got out of them, and even when injected under the skin of guinea pigs they produced no ill-effects. Mr. Smith adopted special methods for ascertaining whether the germs of typhoid were present, but he failed to find any. It would, however, be rash to decide from these experiments that effluvia from dirty streets in hot weather is innocuous. Reports published by the Medical Department of the Local Government Board go far to prove that certain forms of summer maladies are due to chemical phenomena, and not to the presence of 'germs.'"

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—*Times.*

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Food and Sanitation.

SATURDAY, MARCH 30TH, 1895.

THE "TIMES" AND THE CHICAGO TINNED MEAT TRADE.

ALTHOUGH again and again challenged for proof of its statements of March 4 respecting Chicago tinned meat and meat extracts, the *Times* has as yet produced none, and we doubt if the revolting revelations had any foundation other than the imagination of the *Times* scribe. This is a sorry position for a journal to occupy that had at one time a great reputation to lose, but which has dissipated its splendid patrimony, and descended from the position of "The Thunderer" through the forgeries of Pigott—too stupid to impose upon any person of average intelligence—to the publication of attacks upon a foreign trade for which it does not even adduce one scrap of evidence to prove their truth.

We had a hash of trash like that the *Times* published offered to us more than a year ago, but, unlike the *Times* with the concoctions of its friend Pigott, we took the trouble to enquire into the *bonâ-fides* of the informant, and discovered they were of the shadiest. The Chicago meat

packers number amongst their ranks firms known and held in high repute, such as Swift and Co., Nelson, Morris and Co., Armour and Co., and others whose names will readily occur to our readers. It is a significant fact that Messrs. Armour and Co., writing on March 13, say: "The publishers of the *Times* have been utterly misled by their correspondent, and, although unwilling to publicly acknowledge it, they have already ascertained that no Government meat inspection is so strict as that enforced in Chicago; and it would be impossible for any packer to cut up diseased cattle for public use, as stated by the "*Times*" correspondent," and that the *Times* should allow a statement practically accusing it of having published a mass of vindictive concoctions and to be unwilling to publicly acknowledge that such was the case, to pass without refutation, is placing that journal in a very invidious position. There are abuses in the canned provision trade in America, in the fact that there are a host of small packers having no reputation to lose, whose canned fish or meats are bought by jobbers, labelled, and sold without any guarantee whatever that they have been cooked sufficiently long to secure absolute sterilisation and immunity from the development of ptomaine poisons, but the large Chicago meat canners do not act in this manner; their operations are like clockwork, and on a scale that ensures full time to be given for cooking, whilst the principal ones employ scientists of repute, and have their own laboratories for the purpose of ensuring the best scientific supervision and skill in their methods of working. Then, as to methods of inspection, readers of FOOD AND SANITATION who remember our articles of three years ago on ptomaine poisons by canned meat or fish, and the regulations respecting meat inspection and canning in the United States will recollect that we strongly condemned the system by which jobbers bought up the output of a number of small canners and palmed them off upon the public as the product of firms of repute, but, for some time past, very little canned meat so produced has been seen upon the English market, especially since the *fiasco* attending the attempt to sell a consignment bearing a high-sounding Scotch name. Meat inspection has further been made far more rigorous than was the case even at the time we directed public attention to this question, and Mr. Secretary Morton has shown zeal and regard for the good repute of American exported meats, as is evidenced

by the following recent measure, approved by Congress, amending the Act of 1892.

"Section 2. That the Secretary of Agriculture shall cause to be made a careful inspection of all live cattle, the meat of which, fresh, salted, canned, corned, packed, cured, or otherwise prepared, is intended for exportation to any foreign country, at such times and places, and in such manner as he may think proper, with a view to ascertain whether said cattle are free from disease and their meat sound and wholesome, and may appoint inspectors who shall be authorized to give an official certificate clearly stating the condition in which such cattle and meat are found, and no clearance shall be given to any vessel having on board any fresh, salted, canned, corned, or packed beef being the meat of cattle killed after the passage of this Act for exportation to and sale in a foreign country from any port in the United States until the owner or shipper shall obtain from an inspector appointed under the provisions of this Act a certificate that said cattle were free from disease, and that their meat is sound and wholesome."

"Section 4. That said examination shall be made in the manner provided by rules and regulations to be prescribed by the Secretary of Agriculture, and after said examination the carcasses and products of all cattle, sheep, and swine found to be free of disease and wholesome, sound, and fit for human food shall be marked, stamped, or labeled for identification as may be provided by said rules and regulations of the Secretary of Agriculture. Any person who shall forge, counterfeit, simulate, imitate, falsely represent, or use without authority or knowingly and wrongfully alter, deface, or destroy any of the marks, stamps, or other devices provided for in the regulations of the Secretary of Agriculture of any such carcasses or their products, or who shall forge, counterfeit, simulate, imitate, falsely represent or use without authority or knowingly and wrongfully alter, deface, or destroy any certificate or stamp provided in said regulations, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding one thousand dollars or imprisonment not exceeding one year, or by both said punishments, in the discretion of the Court."

In the face of these facts the *Times* cannot be any longer regarded as within the pale of self-respecting journals, unless it gives chapter and verse for its assertions, or frankly apologises for having published statements of a disgusting character anent a great foreign industry, for which it has not produced an atom of proof.

THE SLAUGHTER OF THE INNOCENTS.

An inquest, held at Sheffield on March 20, again brings into prominence a scandal, the continued existence of which is a disgrace to civilisation, viz., the sale of so-called infants' preservatives. The victim was an infant, aged five months, who met his death under the following circumstances:—

The father, Charles Freeman, said his wife used to give the child some infant's mixture every day. She gave him the usual dose of about eight drops on Monday night, when he appeared to be quite well and hearty. The Coroner: Then why did she give him the mixture if he was well and hearty?—Witness: I don't know, sir; she always gave it to the others.—Now is it not a bad habit these women have got into?—It might be. The Coroner commented upon the nature of the habit, and advised the witness to break his wife of it, if he could. A jurymen said he supposed all these drugs contained poison, and was told by the Coroner that without doubt they contained some kind of opiate. Another jurymen said it was undoubtedly a bad habit. The children got so used to the drug that they would not be quiet until it was given them. It was just like the habit of drinking. The Coroner remarked that it went further than that. It was no use giving it the children to quieten them unless there was some kind of opiate in it, and then they got so used to it they were forced to continue. If it killed the children it was the happiest release for them, and if it did not it ruined their constitutions for life. Instead of growing up healthy men and women, their constitutions were ruined by this abominable criminal habit of giving them these infants' mixtures for nothing, in pursuance of a bad habit. The jury returned a verdict of death from "natural causes, probably convulsions."

The extent to which this pernicious practice is carried amongst the poor in large manufacturing towns would astound those who have not studied the subject closely. There is scarcely a mother who is not equipped with a bottle of the villainous soothing syrup or a packet of the deadly powders that are such potent aids in the gentle art of child removal. So enormous is the sale and the profits that one manufacturer of the murderous nostrums has amassed a great fortune and resides in a mansion encircled by acres of beautiful grounds, obtained at what a price?—by trading upon the ignorance of some mothers and the callousness of others,

who rid themselves of their burdens by means of these poisonous nostrums. This is eminently a subject upon which legislation is required, and that speedily. In this case it was evidently sheer ignorance that cost the child his life, but can we wonder at it when we find every newspaper advertising the deadly quackeries with specious lies addressed to mothers, most of whom know nothing of the composition of the infants' preservatives, soothing syrups, or teething powders, but give them to infants on the faith of the lying advertisements, with results like that revealed at the above inquest. That they can be sold universally with impunity offers an easy method to the baby farmer or unnatural mother of ridding herself of an inconvenience, and this should be enough to secure legislation so regulating their sale that they could only be supplied when medically prescribed, which, we venture to believe, would be very seldom.

Only eight days before the above inquest was held the Worcester coroner, with a jury, considered the death of another infant, Alfred Price, fifteen months old. The child had been suffering from a cold, and on Saturday afternoon the mother gave him a teaspoonful of "soothing syrup." After tea she gave him another dose of half a spoonful, and put him to bed. Early in the morning the mother found the child dead beside her. Dr. Simmons, who had made a post-mortem examination, said he found congestion of the brain, and vague evidence of bronchitis. In the stomach he found a small quantity of fluid, which had a strong acid smell. Mrs. Winslow's syrup contained opium. The congestion of the brain and the paleness of the face pointed to opium poisoning. During five years there had been thirty-two cases of death from soothing syrup. The inquest was adjourned for a fortnight for an analysis to be made to discover whether there was sufficient morphine in the body to cause death; also for an examination to be made of the contents of the bottle.

How much longer is this slaughter of the innocents to go on?

AN OBJECT LESSON FOR THE SELECT COMMITTEE.

LAST week Mr. John Lovell, giving evidence before the Select Committee on Adulteration, referred to the encouragement small fines gave to adulteration. The following decisions, by Luton magistrates in the case of one offender, should be valuable as an illustration of why the Adulteration Acts have been ineffectual in so many towns. The magistrates who inflicted these fines are not peculiar to Luton alone: they are to be found on the bench everywhere throughout the country. On March 16, at the Luton Borough Sessions, before Mr. W. R. Phillips (in the chair), Mr. J. Higgins, and Mr. W. T. Lye, William King, 10, Guildford-street, Luton, was summoned at the instance of Mr. Charles Wright, Inspector under the Food and Drugs Act, with selling milk adulterated with 28 per cent. of added water. Mr. Lathom, for the defence, said he had a written warranty from the farmer to show that the article purchased by the defendant was the same as that demanded from him by the prosecutor, viz., new milk, and no proof had been given that anything was done to the milk after it left the farm. The Clerk observed that the warranty was not given at the time the milk was sold. The magistrates convicted the defendant, ordering him to pay the costs 22s., and a fine of 10s. He was allowed a week in which to pay.

This is a fair sample of what is occurring every day in all parts of the kingdom. The town clerk of Luton, Mr. George Sell, informed the magistrates that the defendant had been four times previously before the court. His record of appearances began with a conviction on September 18, 1886, for milk adulteration, when he was fined 3s. 10d. with costs £1 6s. 2d., which amounts he paid. On July 12, 1890, he was again con-

victed of milk adulteration, when the fine rose to 15s. 6d. with £1 4s. 6d. costs, which were paid. February 18, 1893, saw him again before the court on two charges, one of selling skim milk adulterated with 39 per cent. of water, for which a fine of 20s. with 27s. 6d. costs was imposed; and for selling milk adulterated with 10 per cent. of water, for which the fine was 15s. and 27s. 6d. costs. Both these were paid. Then comes the case already mentioned of March 16, with a fine of 10s. and 22s. costs for selling milk adulterated with 28 per cent. of water. Such fines are palpably absurd as a check to adulteration. It should be remembered that milk is the main food of infants, and to tamper with its purity is a serious offence, for the milk, after being thus diluted by the vendor, is afterwards further diluted by the nurse or mother under the belief that it is pure, full-strength milk, and too strong for the infant's stomach. The result is that infants fed on such milk receive scarcely any sustenance, and vast numbers grow up rickety and unfit to take their proper places in the work of the world on account of malnutrition, due partly to ignorance and partly to swindling.

Milk adulteration is, therefore, a peculiarly heartless and dangerous form of fraud, and such penalties as those above instanced encourage it.

THE "MARK LANE EXPRESS" AND AGRICULTURAL POLITICS.

WE like the *Mark Lane Express* for many reasons, one of which is, that, like ourselves, it objects to the brewer making a liquid from rice, sugar, chiretta, or road-sweepings if he likes, and calling it beer; and another being that it recognises ability and knowledge in Mr. Channing and the absence of other than a microscopic amount of either in Mr. H. Gardner or Mr. Chaplin, but whilst thus making for righteousness, it has its moments of weakness. Speaking of the Standing Committee to deal with the Market Gardens' Compensation Bills, it asks what Sir Thomas Esmonde, Sir John Kinloch, Mr. Humphreys-Owen, Mr. Baldwin, and Mr. Bigwood have done to deserve selection, implying that of agriculture they know nothing. We hope our contemporary is not so misinformed about the other members as it is about Mr. Bigwood. We should like to see the *Mark Lane Express* Lobbyist airing his knowledge about barley and malting, for example, to Mr. Bigwood, because it would be amusing to ourselves and instructive for the *Mark Lane Express* writer, who would discover that he was occupied much as the boy was who sought to teach his grandmother how to suck eggs, for Mr. Bigwood is the head of a firm who have not stooped to the practice of boycotting English barley and using in place of it foreign substitutes, against which the *Mark Lane Express* righteously declaims. At Stanstead, near Ware, Herts., the *Mark Lane* writer would find ENGLISH barley of the finest being malted for the brewing of Champion's Vinegar, and he might incidentally learn that Mr. Bigwood is the principal in that vast business. If the *Mark Lane* young man pursued his inquiries into the mustard-growing districts he would find that Mr. Bigwood is well known amongst those engaged in that branch of agriculture as one who buys nothing but the very finest mustard seed for use in the manufacture of Champion's Mustard, which contains no starch, turmeric, chillies, or ginger, and requires, therefore, the ripe and perfectly-coloured seed, and it might then begin to dawn upon the *Mark Lane* Lobbyist that they don't know everything at 150, Strand, and that, upon some means of benefiting English agriculture, he might be none the worse if he asked for a little information from Mr. Bigwood.

In an age when the allurements of extra profits is held out to manufacturers who will make vinegar out of rice, beet sugar, and other articles not grown in England, or employing English labour, and when mustard is more

often found composed of a proportion of mustard seed from anywhere, with a pungency derived from chillies or ginger, which we do not grow, and containing ten to thirty or forty per cent. of foreign starch, the manufacturer who resists these inducements to cut his country's throat for the sake of gain, is the kind of man the *Mark Lane Express* has been looking for, and when it finds him, it is not, to say the least, a nice or an intelligent thing to ask what he does on a committee upon an agricultural question? But the *Mark Lane* young man evidently did not know this, and no doubt will make the *amende honorable*.

FOREIGN MILK IN LONDON.

THE Continent has at present a very choice collection of curious diseases to offer us, amongst which is the inviting one which has come out of the wilds of Siberia, and has reached Berlin on its westward march, bringing either death or toothlessness to its victims. It is a fierce fever which attacks the mouth, and Professor Virchow has expressed the opinion that it is a variation of the dreaded foot-and-mouth disease to which cattle are subject, HAVING ITS ORIGIN IN THE DRINKING OF MILK TAKEN FROM DISEASED CATTLE. If this disease should spread among the populations of the West of Europe it will be the greatest affliction that has been seen since the black plague.

Dr. Siegel, who has been studying the disease at Brietz, also says he has no doubt whatever that it is a human form of foot-and-mouth disease. He traces the origin of the malady to a roundish bacterium found in the internal organs of human beings, and beasts dying of the disease. This bacterium has been cultivated, and through its instrumentality foot-and-mouth disease has been repeatedly produced in cattle and swine, and he agrees that milk is the chief medium of infection.

We mention these little facts because, at the present time, it is stated that 500 gallons per day of foreign milk are disposed of in London, and that arrangements are being made to greatly extend the trade, and that thousands of gallons of foreign cream have been, and are being, disposed of to butter-makers. The system adopted is freezing. The milk is placed in oak puncheons, holding 55 barn gallons each. The contents are then frozen by the liquid ammonia process and despatched from Gothenburg to Millwall, London, by steamer at specially low rates, thus reaching London, from the Continent, in a very few hours.

The facts, as to the imports of milk, may not be entirely as has been stated, and there may be exaggeration as to the quantity disposed of, but such points are of no importance whatever beside the vital one of the grave danger to which such a traffic exposes this country. Our personal experience of sanitation in foreign country districts is that none exists that can be called such. It ought to be widely known that milk is the most dangerous article that we could possibly import in an unsterilised state, for no substance offers so ready a means of carrying infection. It is only a few months since Dr. Welply, of Bandon, found that one insanitary farm had spread typhoid throughout a whole country side by infected milk, and Drs. Harris and Clothier, of Islington and Hornsey, have only just concluded their efforts to stamp out an epidemic in those districts, due to infection by milk from Derbyshire. When we have outbreaks like these in England, where we are far in advance of any country in sanitation, and where our milk supply is under sanitary control, it is plain that nothing but the most strict supervision can protect us from disease disseminated by milk. But what sanitary supervision can we exercise over this milk from Gothenburg? Not a scrap. The foreigners may send us a choice collection of whatever diseases they have in stock; they may even favour us with the new human foot-and-mouth disease which brings death or toothlessness to those it visits, for there is no substance

that is so excellent a culture medium for disease germs as milk. Common sense and regard for the safety of the public health should at least at once stop this very dangerous trade. We have a sufficiency of foreign curses already sponging on our civil list and battering on our Court. We may at least hope to be spared from foreign filthy diseases. This, at least, is not a question of protection, but of ordinary prudence, and whether it would benefit English dairy farming or not is quite outside the question.

SOME POINTS OF DIFFERENCE

BETWEEN

ENGLISH AND CONTINENTAL METHODS OF MUNICIPAL SANITARY ADMINISTRATION.

By T. M. LEGGE, M.D., Oxon. D.P.H.

(Continued from page 89)

DRAINAGE, ETC.

As regards drainage and refuse disposal, these six capitals can be divided roughly into two classes, the one employing the water carriage, the other the pail system. The three Scandinavian capitals, owing principally to the severe winters to which they are exposed, hold aloof from the water-carriage system. Berlin and Brussels have adopted it entirely, while Paris has passed a law this year making it compulsory on all who can to adopt it in five years' time. One feature about house drainage in Berlin, rendered necessary no doubt by the frost, is that no disconnecting trap exists between the sewer and the house drain, a flap valve having all the responsibility thrown on it of excluding the sewer air. The soil pipes, therefore, act probably as exceedingly good sewer ventilators. Whether this is the best function that they can perform I leave it to others to determine. The soil pipe is hardly ever outside the house, and there is no through ventilation except from the sewer. There is no doubt, however, that Berlin has solved the sewage question in a way that very few towns have. The Spree, a comparatively small stream for so great a town to be situated on, is at the same time, I venture to think, as free from gross pollution as a river flowing through a city of two-and-a-half millions of inhabitants can be. The pumping of the sewage on to the various sewage farms round the city (they cover some 12,000 acres) is a stupendous work. Those who decry sewage farms, and their number is not few, must be staggered at the success that attends those near Berlin. It is true that the ground was well adapted for the purpose, barren sandy wastes, on which nothing but a few stunted fir and birch trees could grow, but now they have become the most fertile fields in the neighbourhood. Everything seems to grow there, wheat, oats, barley, potatoes, mangolds, rye grass in profusion, cabbages, fruit trees, etc., etc. A very remarkable feature, to my mind, was the military precision and exactitude of all the employés on the farm, who seemed to carry out their work as though they were soldiers on duty. Whole villages, of course, are situated amongst these sewage farms; there are on them convalescent homes, etc., and the health of the inhabitants does not suffer in any way.

(To be continued.)

REPORTS AND ANALYSES.

TEA TABLOIDS.

MESSRS. BURROUGHS AND WELLCOME, whose enterprise has placed so many useful improvements in pharmacy at the disposal of the physician, have lately introduced their tabloids of compressed tea, which will be found extremely valuable, not only for travellers, exploring expeditions, etc., where bulky packages are undesirable, but for use in establishments where it is necessary to regulate the consumption of the popular beverage. 200 tabloids can be bought for 1s., and will make, at least, 100 good cups of tea, although, for some tea-drinkers who dislike it strong, a tabloid per cup will be found sufficient. It will thus be readily seen that the tabloids are cheaper for regular use than even the poorer qualities of ordinary uncompressed tea. We have tried the tabloid tea and found it of excellent aroma, and when left to brew for some time it was found devoid of the objectionable astringency commonly found in teas brewed longer than the regulation few minutes. A tin box, $3\frac{1}{2}$ in. by $2\frac{1}{2}$ in. by 1 in. holds 100, so that our readers may judge into how small a compass a large supply can be put.

ADULTERATION PROSECUTIONS.

BUTTER.—At Birmingham Police-court, William Butler, Burbury-street, was summoned for selling as butter a compound containing 65 per cent. of foreign fat. The purchaser stated that she asked for butter, and was served with the sample in question. The piece it was taken from was not large. A parcel near it was labelled "margarine." Defendant was ordered to pay the costs only.

At West London, on March 19, there was a summons against Herbert Adderley, of New King's-road, Fulham. Mr. Denselow, clerk of the Fulham Vestry, supported the summons.—The sample of butter which was purchased was found on analysis to contain only 30 per cent., the remaining 70 per cent. consisted of foreign fat.—The defendant said he conscientiously believed it was butter. He had been suffering from influenza, and it was his first appearance in the shop after his illness when he was called upon to serve the butter.—Mr. Rose imposed a penalty of £2, with 12s. 6d. costs.

At Douglas, on March 23, before the High Bailiff, a woman was charged under the Adulteration Act with selling butter in the market which was adulterated, contrary to the said Act. Inspector Cain purchased a pound of butter, and paid 1s. 3d. He sent the butter to Mr. Terry, the public analyst, for analysis. It contained 25 per cent. of oil fat other than butter and 23 per cent. of water. The defendant denied guilty knowledge of the adulteration. His worship pointed to the consequences of "little drops of water" and "little grains of sand," and imposed a penalty of 10s. and fees.

ELDER v M'QUEEN—Appeal.—In the Court of Queen's Bench, on March 22.—In this case Mr. Elder, chief inspector for the County of Durham, under the Sale of Food and Drugs Act, appealed from the decision of certain justices of Sunderland, who had refused to convict the respondent, the proprietor of the Toll Bar Hotel, Rayhops, of selling adulterated rum.

Mr. Lawson Walton, Q.C., and Mr. Sweny appeared for the appellant; while Mr. Bealey, Q.C., and Mr. J. Strachan represented the respondent. In August last the appellant and an assistant went into the respondent's bar, and the latter asked for a pint of rum, for which he paid 2s. A sample of the rum supplied was sent to the county analyst, who certified that it contained 75 per cent. of pure spirit, and 18 30 "too much water." At the hearing before the magistrate the respondent said he exhibited a notice in the bar to the effect that spirits sold at his establishment were diluted, but not below half strength. Appellant denied that he saw any such notice in the bar; but the magistrates found that the notice was exhibited in the bar, and the spirit sold was in conformity with the notice, and that the sale was not to the prejudice of the purchaser.

Their lordships held that the case raised no point of law, but a question of facts which the magistrates could decide for themselves. Appeal dismissed without costs.

MUSTARD.—At the Llandudno Police-court on March 25, W. A. Evans, grocer, was charged with selling adulterated mustard. P.C. Nelson gave evidence of having purchased a 1 lb. tin of Colman's mustard from the defendant, which had been sent to the county analyst, Mr. Law, whose certificate showed it to contain 18 per cent. of flour. Mr. Tillet, of Norwich, represented Mr. Colman, and disputed the correctness of the analysis. He called attention to the ridiculousness of the County Council employing a policeman to purchase goods for analysis, who admitted that he had never read the Food and Drugs Act, and knew nothing of the practice of selling mixed articles. Neither did he know that the Act provided that where notice of the mixture was given on the packet, the seller was absolved from all responsibility. Mr. Tillet then produced the tin which contained the mustard, and pointed out the notice on it, which stated that the contents were a condiment. The tin had not been sold as containing pure mustard. The Bench dismissed the case. John Littler, grocer, Mostyn-street, was charged with a similar offence. The same defence as in the previous case was made, and the case was dismissed.

MILK.—At Dartford Petty Sessions Thomas Goldsmith was summoned for selling adulterated milk.—Supt. Webster said he sent a third of the sample to the public analyst (Dr. M. A. Adams, of Maidstone), whose certificate said the milk contained 90 parts of milk and 10 parts of added water. He stated that defendant had been previously convicted of like offences, the last time in May, 1893, when he was fined £2, and costs. Lately defendant had been going down-hill, and was now in very poor circumstances, being in a small way of business, purveyor of milk.—The Chairman said the public must be protected, and the Bench could not overlook the fact that this was not the defendant's first offence. They took into account, however, his poor circumstances, and imposed a penalty of 10s., and costs.—At Wakefield, on March 18, Henry Bedmore, milk-seller and publican, Horbury, was charged with selling adulterated milk. To pay £3 19s. 6d.

SPENT GINGER.—At Pontefract Borough Court on March 25, the adjourned case of Mr. W. Warde, grocer, was heard. Mr. Bruton prosecuted, Mr. Kaberry was for the defendant, and Mr. Bentley watched the case for the wholesale firm (Messrs. W. and C. Pantin, London). Mr. Warde was summoned for selling 40z. ground ginger to the prejudice of W. H. Wilson, County Council Inspector. Mr. Bruton, in opening the case for the prosecution, referred to the case being adjourned to allow of the sample retained by the inspector to be analysed by the Somerset House authorities, whose certificate had been received, and it gave the same results as given by the public analyst for the West Riding, the sample

containing 70 parts of ground ginger and 30 parts of ground ginger exhausted of its pungent principle. After a somewhat lengthy hearing, the magistrates fined the defendant the costs, £2 7s. 10d.—At Lancaster, on March 23, three Morecambe grocers, Edward Allutt, Elizabeth Pearson, and Mary Alice Ellis, were charged with selling ground ginger, adulterated to the extent of 50, 8, and 20 per cent respectively with spent ginger. The Bench inquired in each case who were the wholesale suppliers, and in two instances were given the names of Preston firms, who had promised to pay the fines. Penalties of 5s. in the two first cases and of 10s. in the third were inflicted. The costs in each case amounted to 19s.

WHISKY.—At Perth, on March 22, George Robertson, Commercial Hotel, Alyth, was charged with selling to Police-Sergeant Murray, Alyth, a pint of whisky 26 degrees under proof. A medical certificate was produced by Mr. Hunter, of Messrs. M'Cash and Hunter, solicitors, Perth, that the accused was unable to attend. Mr. Hunter stated that, while the complaint alleged that the whisky was one degree under the limit, the accused had obtained an analysis showing that it was within the limit. To avoid bringing conflicting evidence, he moved the Sheriff to direct the sample retained by the police to be sent to Somerset House, London, for analysis under the powers given by the Food and Drugs Act. The Procurator-Fiscal (Mr. B. J. B. J.) having expressed his concurrence in this suggestion, the Sheriff directed accordingly. The trial was in the meantime adjourned for four weeks.—At Halifax, on March 23, William Hellwell, landlord of the Murgatroyd Arms, Luddenden, was fined £2 3s., including costs, for selling whisky adulterated with 37 per cent. excess of water. Inspector Crabtree prosecuted.

UNSOOUND ORANGES.

At Thames, on March 22, Mr. Haines, on behalf of the Corporation of London, applied to Mr. Dickinson to condemn a large number of oranges which were unsound and unfit for food. Altogether 950 cases of oranges were landed, and out of that number 904 cases were unfit for human consumption. He had a fair sample of the fruit outside the court. Mr. Dickinson having examined the sample, William J. Rondrill, one of the inspectors of the Port of London, proved seizing the cases at Middleton's Wharf, where they had been landed from the steamship *Large*, from Valentia. The wharf authorities had the notice of the application. Mr. Dickinson made the order asked for.

THE "NOTICE" DODGE.

At Swindon, on March 21, Lavinia Henly, Cross Keys Inn, Wootton Bassett, was summoned for selling a half-pint of whisky 33 degrees under proof. Mr. Sam Smith, inspector under the Food and Drugs Act, said Mrs. Henly directed his attention to a printed notice on the mantelpiece relating to the mixture of spirits with water. He only saw the notice, and did not see that until Mrs. Henly pointed it out to him—Mrs. Henly produced two notices, "Spirits sold here are diluted," which she said were on the mantelpiece, and which she had had since she had been at the Cross Keys.—Mr. Twine, Mrs. Henly's brother-in-law, said he had seen the two notices plainly exhibited in the room for at least twelve months.—The magistrates decided not to convict.

Alfred Renwick, of the Royal Oak Hotel, Wootton Bassett, was summoned for selling whisky containing 6 per cent. of added water.—Mr. A. E. Withy was for the defence.—Inspector Smith said he returned with the lad Curtis after the latter had bought the whisky, and the young lady in the bar elected to have the sample divided. He did not see, nor was his attention drawn to any notice.—The defence offered by Mr. Withy was that there was plainly exhibited near a clock in the bar the notice, "All spirits sold at this establishment are diluted," and this was borne out by Mr. Renwick and the barmaid, Miss Rebbeck. The former said he had used a notice during the whole time he had been in the house—17 years.—The case was dismissed, and no order was made as to costs.

Albert Wallis, of the Waggon and Horses Inn, Wootton Bassett, was similarly summoned in respect to rum which contained 8 per cent. of added water.—Inspector Smith, who made the purchase personally, said he saw no notice, and Mrs. Wallis, who supplied him, did not draw his attention to any. Defendant and his wife said there were notices both in the bar and the smoking-room, that in the bar being between two jars. The notice was not obstructed in any way.—Mr. R. H. Garrett, coach-builder, of New Swindon, was called, but could only swear there was a notice in the smoking-room.—The Bench thought a technical offence had been committed, but did not inflict any penalty on defendant agreeing to pay the costs, £1 0s. 6d. The Chairman said the Bench were of opinion that at every place where liquor was sold under proof conspicuous notices should be exhibited in different parts of the house.

Henry Panting, of the Beaufort Inn, Wootton Bassett, was summoned for selling whisky adulterated with 13 per cent. of added water.—The defence was that a gallon of whisky had been obtained from the brewery the same morning, and a pint of water was added. It was stated that the whisky was purchased from the brewery at 17 degrees under proof, and it had always been the custom to add a pint of water to a gallon of whisky. Fined 10s. and £1 0s. 6d. costs.

BUTTER WITH 75 PER CENT. MARGARINE.

HARRY HYDE, of the "Dairy Butter Co." Bridge Street, New Swindon, was summoned at Swindon, on March 21, for butter adulteration. Mr. H. Bevir prosecuted, and Mr. A. E. Withy defended. Mr. Bevir said the analyst's report showed that the

sample submitted to him contained 75 per cent. of fat other than true butter. A boy named Curtis deposed that he bought the compound as butter, and the wrapper bore the words 'Fresh Butter.' Inspector Smith said defendant told him he believed the butter was genuine. The Bench thought the case was one in which a substantial penalty should be inflicted, and fined defendant £5 and £1 10s. 6d. costs. The prosecution offered no evidence on a second charge of selling adulterated butter, defendant paying 3s. 6d. costs.

MUCH CHICORIED COFFEE.

At Swindon, on March 21, Herbert Hunt, grocer, of Wootton Bassett, was summoned for selling coffee not of the nature demanded. Mr. Bevir said there was no imputation against defendant, who no doubt sold the preparation as he bought it. The tins in which the mixture was contained bore the name "John Cassell and Co., Steam Coffee Mills, 80, Fenchurch Street, London," and the words "This is sold as a mixture of chicory and coffee." As a matter of fact, the proportion of chicory was no less than 90 per cent. The coffee was sold to the boy Curtis in two ½ lb. tins at 3d. each. Defendant said the coffee cost him 9½d. per lb. and he sold it at 1s. Fined 10s. and £1 10s. 6d. costs.

COFFEE.

At North London, on March 22, Charles Unwin, grocer, of 64, Haggerston-road, was summoned, before Mr. Haden Corser, at the instance of Sanitary Inspector C. H. Quelch, on behalf of the parish of St. Leonard, Shoreditch, for selling coffee to which chicory had been added to the extent of 40 per cent.—The purchase was made on February 27 last, and the defence was that the inspector's assistant asked for "shilling coffee," and the lad who sold it said it was a mixture. This was denied. Defendant said if it were otherwise it was his assistant's fault, as he was away at the time—Mr. Corser: Assuming that "shilling coffee" was asked for and that pure coffee could not be purchased under 1s. 4d. a pound, an offence has been committed by the selling of a mixture without disclosure. I shall impose a penalty of 20s., with 12s. 6d. costs.—George Horley, grocer, of 43, Lee-street, Haggerston, was summoned by the same inspector for selling coffee which was chicory and coffee mixed in equal proportions.—In this case no verbal disclosure was made, but, although coffee was asked for, the mixture was served in a paper which was labelled, "This is sold as a mixture of coffee and chicory."—Mr. Corser held this disclosure to be sufficient, and dismissed the summons.—Samuel Taylor, grocer, of 29, Trafalgar-road, Haggerston, was also summoned for selling coffee adulterated with 50 per cent. of chicory. Defendant pleaded guilty, and said he sold the mixture without disclosure in ignorance, as his wife usually looked after the shop, and she was ill with influenza at the time.—Mr. Corser fined the defendant 20s., with 12s. 6d. costs.

A SCOTCH APPEAL.

In the Justiciary Appeal Court (Scotland) there was brought under review on March 20 a decision by Sheriff-Substitute Birnie, who, on a complaint at the instance of the Glasgow Inspector of Nuisances, fined Robert Gibson, 115, Drygate, Glasgow, £5 for having on 4th October, 1894, to the prejudice of the purchaser, sold a pennyworth of sweet milk which was not of the nature, substance, and quality demanded, in respect that it was deficient in natural fat to the extent of 7 per cent., or thereby, contrary to the Act 38 and 39 Vict., chap. 63, section 6. The only evidence led by the Inspector as to deficiency was the analyst's certificate and his evidence as a witness. No evidence as to deficiency was led by Gibson. The analyst's certificate and evidence were to the effect that the deficiency was "produced either by obstruction of the fat or by the addition of skim milk to bring about the same result." Section 9 of the Food and Drugs Act, 1875, refers specially to abstraction. The questions in law submitted were:—(1) Were the analyst's certificate and his evidence as a witness sufficient in law to authorise conviction; and (2) having in view that the deficiency may have arisen from abstraction, was it competent to convict under section 6?—The Court affirmed the decision of the Sheriff with £10 10s expenses, holding that the certificate of the analyst and his evidence were sufficient in the absence of any counter-evidence by the accused.

SUPPRESSING ADULTERATION IN LEICESTER.

At Leicester, Noah Harris, grazier, Hugglescote Grange, Ashby-de-la-Zouch, was summoned for selling milk adulterated with four per cent. of added water to the Leicestershire Dairy Farm Produce and General Supply Company, Limited. Mr. J. B. Fowler defended.—The Town Clerk stated that the sample was taken at the Midland Railway station while the milk was in course of transit from defendant to the Leicestershire Dairy Farm Produce Company, under a contract at 1s. 5d. per gallon, with a guarantee of purity. He (the Town Clerk) submitted that defendant was responsible for the milk having been tampered with in transit.—Evidence was given by Inspector Tom Bent as to taking the sample and having it analysed.—In reply to Mr. Fowler, witness said that it was a very cold morning when the sample was taken.—The contract between defendant and the Dairy Company was proved by Thomas West, the manager of the company. Complaints had been made by the Dairy Company to defendant of short measure lately, and that defendant was in communication with the Midland Railway Company with regard to it.—Mr. Fowler, for the defence, said defendant had carried on business for 18 years, during which time there had not been a single complaint with reference to the quality of his milk. As to what might have taken place in transit, defendant, of course, could not say. The very cold weather might

have affected the quality of the milk.—Evidence was given by two of defendant's sons, who milked the cows and despatched the milk. Both of them denied that any water was added to the milk. Sixteen cows in all were milked, and the whole of the yield—14 gallons—was sent to the Dairy Company.—A fine of £3, including costs, or 21 days, was imposed.

A charge was preferred against Charles Preston (45), Coleorton, Ashby-de-la-Zouch, of selling to Wm. Matthew Bailey milk from which four per cent. of fat had been abstracted, without disclosure of such alteration, on February 26.—Defendant said in order to make up the quantity he purchased two gallons from a neighbour, and mixed it with milk from his own cows. He neither added water nor abstracted any cream.—Fined £3, or 21 days.

Caleb Denton (34), milk seller, 69, Wordsworth-road, was summoned for a similar offence on February 26.—Defendant's wife said the sample taken by the inspector was the last pint of a quantity purchased that morning, and it was possible that the largest proportion of the cream was contained in the milk first sold.—Fined 10s., or seven days.

James Green, licensed victualler, Portsmouth-street, was summoned for selling brandy adulterated with water 4.5 beyond the legal limit of 25 degrees, on February 21.—Mr. J. B. Waring defended.—Inspector Tom Bent deposed to purchasing a sample of brandy, which on analysis proved to be of the quality stated in the charge.—Mr. Waring said he did not dispute the result of the analysis. Defendant bought the brandy in bond, and had it in his possession for some months, keeping it in a warm temperature. This would have a deteriorating effect upon the quality, which was overlooked by defendant when diluting it in the ordinary way.—Mr. Burford, analytical chemist, spoke to having analysed a portion of the brandy purchased by the officer, and finding it 1.1 below the proper strength. The difference might be accounted for by evaporation.—Fined 40s. and costs, or 14 days.

EXPOSING DISEASED MEAT.

A NOTTINGHAM BUTCHER SENT TO GAOL.

OLIVER WHEATCROFT, a butcher, carrying on business at 24, Narrow Marsh, Nottingham, appeared before the Nottingham magistrates on March 19 in answer to a summons charging him with having exposed for sale meat that was unfit for human food. Defendant pleaded not guilty. Mr. F. B. Harris stated that the case was an exceedingly bad one of exposure of unsound meat for sale. The meat was in such a condition that it attracted the attention of the inspector as he was passing the shop. He examined it, and found it to be utterly unfit for human food. Thomas Moore, inspector of nuisances, stated that as he passed the defendant's shop on the 6th inst., about 5 p.m., his attention was attracted by the appearance of a carcass that was hung up for sale in quarters. The carcass was complete with the exception of about 2lbs. of meat which had been cut off from the bottom of the neck. It was very highly coloured, and very much emaciated. The left hip joint was diseased, and the glands inflamed. Witness asked for the lungs of the carcass, and these being produced, he found to be affected with abscess and tubercle. The owner was present during the whole of the examination, and informed witness that he purchased the animal at a butcher's shop in Springfield-street from a butcher. He declined, however, to say from whom he purchased the carcass, or what was the price he paid for it, or where he slaughtered it. Witness found out afterwards that defendant paid 50s. for the carcass, which weighed 28st. 13lb. This was at the rate of about 1d. per pound. Defendant said he was very sorry for what he had done, and would take care such a thing did not occur again. He bought the carcass as a "stray" piece, and was asked £5 for it at first. The Chairman of the Bench observed that this was not the first time defendant had been charged with this kind of offence. In September, 1890, he was convicted for exposing bad meat for sale, and was fined £20. That fine, however, did not appear to have had any effect as a warning upon the defendant. He (the chairman) thought the present was about the worst case he had ever heard of. In a poor neighbourhood, where the people had not too much money to throw away, the defendant had attempted to sell meat which, according to the evidence, was not fit for dogs to eat. He (the magistrate) could hardly trust himself to express his feelings on the subject, but he should give effect to them by sending the defendant to gaol for three months.

THE SELECT COMMITTEE ON ADULTERATION.

ALLEGATIONS OF BRIBERY AGAINST INSPECTORS.

IN his evidence before the Select Committee on March 27, Mr. James Hudson made a very serious statement, viz., "the inspectors were known in almost every locality, and when one of them asked for a pound of tenpenny butter, the shopkeeper either gave him sixteenpenny butter, or else put a half sovereign in the scale.

"Mr. Kearley: Do you suggest the inspectors are open to bribery?—Witness: Undoubtedly.

"You are speaking from experience?—Yes.

"You mean they are open to be 'squared'?—Certainly.

"Could we have evidence to prove that?—Yes; from the Butter Association, and names can be given."

There have been many hints as to inspectors being bribed to connive at fraud, but this is the first occasion we know of upon which such an allegation has been publicly made by a responsible person. Mr. James Hudson is the head of the well-known firm of Hudson Brothers, and the good repute of a large body of public officials, concerned with enforcing a very trying and difficult Act, being thus directly assailed, we look to him to thoroughly prove his assertions. We know there has been much chargin amongst the members of the Butter Association at their failure to secure such co-operation in their margarine crusade as they hoped to get from inspectors, but they forget that the inspector is not a free agent, but is responsible to the Vestry committees, and that on such committees traders seek election for the purpose of "burking" the Acts. The inspector must not do more than his employers permit, or his place is made "too hot" for him. We shall not be surprised if it turns out that Mr. Hudson has been imposed upon by malicious concoctions, but in any case the matter must be thoroughly sifted.

HOW BAD TOMATOES ARE SOLD AT COVENT GARDEN.

AT Bow-street, on March 21, Mr. J. B. Thomas, salesman, Covent Garden Market, was summoned before Sir John Bridge, to show cause why a quantity of tomatoes sold by him should not be destroyed as being unfit for human food.

Defendant was represented by Mr. Gerald, his manager and auctioneer.

The complainant was Thomas Gilby, a costermonger, who purchased a quantity of tomatoes from the defendant for 16s. When he opened the boxes in which they were packed he found that the tomatoes were utterly bad; so bad, in fact, that the paper in which they were wrapped could not be taken off. He went to the defendant's manager and explained matters, but was told that nothing could be done for him. After he had obtained the summons the defendant's manager offered to return the 16s. he had paid, but refused to compensate him for loss of time.

Defendant's representative stated that, as a rule, each box was broken open in front of the buyers. When they had opened one or two boxes as samples they generally asked the people present if they would like any more opened. If they said "Yes," their request was complied with. If they answered "No," the sale proceeded. Each box was purchased on its merits, and a placard to that effect was exhibited at every sale. As a rule, when a box proved to be bad the purchaser was compensated; but of late there had been such a shower of complaints that it had been impossible to do that. That day three boxes were opened in public, and the tomatoes they contained proved to be utterly bad. He at once gave orders for them to be taken away, but the tomatoes in the next box opened proved to be perfectly sound. There was no accounting for these things.

Complainant said he gave 4½d. a box for these tomatoes. Several men, of whom he was one, had offered 4d. a box, and they all "tossed up" to see who should have them. He proved the winner, and had them at 4½d.

It was explained that this tossing system was originated by the costermongers attending Covent-garden Market, and the auctioneers took no part in it.

Sir John Bridge ordered the tomatoes to be destroyed, and directed the defendant to return the 16s. to the complainant, and pay the costs of the summons.

Several other costermongers were in attendance with boxes of bad tomatoes they had purchased from various salesmen in Covent-garden Market.

Sir John Bridge granted them summonses, returnable to-day (Friday), calling upon them (the vendors) to show cause why the tomatoes should not be destroyed.

FOREIGN CHEESE AND THE MERCHANDISE MARKS ACT.

IN the House of Commons on March 22, Mr. Wingfield-Digby asked the President of the Board of Agriculture whether he was aware that large quantities of foreign cheese were being sold for English; and whether he would take steps to extend the Trade Marks Act to include cheese, or give facilities for the passing of a short Bill to that effect.

Mr. Gardner said he was aware of the fact stated in the question. Cheese fell within the scope of the Merchandise Marks Act, and if specific cases were brought to his notice he should be glad to see whether the circumstances called for proceedings by the Board of Agriculture under the Act of last session.

WEXFORD AND THE FOOD AND DRUGS ACT.

THE Chief Secretary wrote that if the grand jury wished to enforce the Food and Drugs Act it would be necessary for them to present such sums as would be necessary to carry out the Act.

Head-constable Leonard said that there had not been any prosecutions in Wexford under the Act up to the present. He believed the only cost for carrying out the Act would be the carriage to send the articles and the analysis. Foreman—That

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would be very little, as we have a public analyst who is paid £20 a year. The secretary thought that £20 or £30 would be enough to carry out the Act. It has been decided to provide money to carry out the Acts.

CARMARTHEN COUNTY COUNCIL AND ADULTERATED FOODS AND MANURES.

Mr. J. C. HARFORD moved:—

"That the police officers be authorised to take independent action under the Fertilizers and Feeding Stuffs Act, 1893, and to send samples for analysis as in the case of food and drugs, the whole cost being paid by the County Council."

Mr. Harford said if the agents knew that the police had instructions to take samples for analysis, as they did of whisky, milk, etc., it would be a great check on the sale of adulterated stuffs, and farmers would then, probably, get good value for their money.

The Clerk said he did not think the motion could be legally put in force, as the Act throughout contemplated a buyer and a seller, and there seemed no power for a policeman to walk into the shop of a manure seller and say, "I am going to take a sample of your superphosphate and send it to the analyst." All the police could do was to assist a buyer in taking samples, and they had already passed a resolution that the Council would pay two-thirds of the analyst's fee.

Mr. Peter Jones said he thought they could give an instruction to the chief constable and through him to the officers to assist the farmers of the county in the taking of samples. He was sorry to see that Cardiganshire and the adjoining counties had as yet not taken advantage of the analyst appointed at Aberystwyth College. It was much to be regretted. No doubt the police could be of material assistance in the matter, and if the attention of the chief constable was drawn to the resolution, no doubt he would send out special instructions to the force.

The Clerk said a resolution of that kind had been passed at the last meeting, and he had already drawn up a placard for the printer according to what other counties had done.

Mr. Harford said he saw the county analyst the other day, and he then said he had only received one sample for analysis from Cardiganshire, so that there had not been much supervision. He did not think that all the sellers now knew that they had to give a certificate to the buyer under a penalty of £20.

The motion was eventually withdrawn on the understanding that the police would be instructed as suggested.

SANITARY ITEMS.

LIVERPOOL.—The City Council, on March 20, voted the following increases of salaries:—Mr. James Morgan, chief surveyor of roads, from £325 to £350 per annum; Mr. James Hill, road surveyor, east district, from £150 to £160 per annum; Mr. F. E. Cooper, superintendent sewerage department, from £220 to £230, increasing £10 per annum to £250; Mr. William Goldstraw, chief assistant building surveyor, from £320 to £350; Mr. James G. Baker, clerk and milk shop inspector, from £115 to £130 per annum; Mr. Thomas J. Luya, chief meat inspector, from £250 to £270 per annum, increasing in twelve months to £290 per annum, and in two years to £300 per annum; Mr. William N. Wycherley, assistant meat inspector, from £130 to £140 per annum; Mr. George I. Robinson, chief fish inspector, from £185 to £195 per annum; Mr. George H. Bayley, assistant fish inspector, from £130 to £140 per annum; Mr. John Roberts, assistant fish inspector, from £130 to £135; Mr. George Wheatcroft, inspector under the Diseases of Animals Act, 1894, from £120 to £125; Mr. Richard Davies, inspector under the Diseases of Animals Act, 1894, from £120 to £125.

Mr. JAMES HARRIS, a surveyor, of 14, Cambridge-road, Battersea, was summoned at the South-Western Police-court, on March 21, for opening the pavement surface in Foxmore-street without giving three days' notice to the vestry. Mr. Denman: Suppose it was a case of emergency? Mr. Young: He should have given twelve hours' notice of it after the event. Defendant contended that his wife and not he was the owner of the house, and therefore responsible for the act. On the day in question he was ill in bed, the main burst, and his wife sent for a plumber, who, in order to get at the stopcock, opened the ground to the extent of 9in. by 11in. Mr. Young pointed out that the defendant was clearly responsible, although he traded as "A. Harris." Mr. Denman thought the offence was proved, and inflicted a fine of £5 on the defendant. The latter gave notice of appeal.

SEDGELY DISTRICT COUNCIL.—Mr. Fithern has been re-appointed sanitary inspector at £70 per annum.

THE SANITARY INSTITUTE.—A sessional meeting of the Institute will be held at the Parkes Museum, on Wednesday, April 3rd, at 8 p.m., when a discussion will be opened on "Combined Drainage from the point of view of Health, Construction, Administration, and Law," by John F. J. Sykes, D.Sc., M.D., medical officer of health, St. Pancras, and Wm. Nisbet Blair, Assoc. M. Inst. C.E., borough engineer and surveyor, St. Pancras. The chair will be taken by Henry C. Stephens, Esq., M.P.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XXXIX.

(Continued from page 93.)

And the Central authority is needed, in your opinion, to reduce them to uniformity of practice?—That is so.—You think that margarine should be sold in its natural colour?—I do.—You do not wish to colour it in any way?—No, I do not. I think it would be invidious to ask the trade to colour margarine in an objectionable way. I am quite satisfied that it should be sold under its own colour.—And, as an amendment to the law, you would have power to prevent its being coloured so as to imitate a highly coloured butter?—I would.—Do not you think that if margarine came in of a cream colour, it might still be a competitor in the market against butter of a light colour?—Possibly it might, but I have no experience as to that. I could not help hearing the question upon that subject put to the last witness, but I have no experience in the matter. I should have said that margarine was not the colour of rich cream, but that it was almost the colour of that paper (holding up a piece of paper).—In the case of adulterated articles, have you anything to say about the warranty being used as a protection?—Yes: We find in the administration of the Sale of Food and Drugs Act in our county that the retail dealer very naturally falls back frequently upon the warranty, and the magistrates very naturally have an objection to fine a retail dealer heavily if that retail dealer has bought the article not knowing it to be adulterated. But we cannot get easily at the wholesale dealer; we do sometimes get at the wholesale dealer, and I may say that if we can, we do.—So you want to make the wholesale dealer more accessible?—Yes.—So that you can prosecute him when the retail dealer is unwittingly selling an adulterated article?—Yes. I may give you a case in point, which was decided in our own county, which will show the opinion of the stipendiary magistrate dealing with the two questions which you have just put to me. This is the stipendiary magistrate's opinion of margarine. At Wolverhampton this year, a retail dealer was prosecuted, and in the opinion of the stipendiary magistrate there was very little guilt brought home to the retail dealer, inasmuch this margarine was delivered to the retail dealer as butter. The stipendiary magistrate, in giving his judgment, said this: "in fact the whole concoction of margarine is a fraud from beginning to end. It was coloured so as to resemble the natural product butter, because if it was not so coloured, people could not be deceived into purchasing it as butter. It helped the dishonest dealer who wished to cheat his customers, and it acted very prejudicially against the tradesman who wished to act honestly, but who was led into committing a fraud by the fraud committed upon himself by the wholesale dealers with whom he did business. He hoped that such cases as these would induce the Legislature of this country to follow the example set by certain places on the Continent, and pass a law to compel manufacturers of margarine to colour the article in such a way that it should not be mistaken for real butter." Then he ordered the defendant Lester, the wholesale dealer, to pay a penalty of £5, but he allowed the case against the defendant Bagley to be withdrawn on payment of costs, Bagley being the small retailer.—Sir Mark Stewart: Did the County Council of Staffordshire support the suggestion of an international conference, as made by the Danish Government?—Yes, they did.—Could you inform the Committee what their suggestions were?—Their suggestions were that there should be an international conference. Perhaps I may explain that in consequence of a communication which I received from Mr. Harold Faber, the Commissioner of the Danish Government, he came down to see me on the eve of the meeting of the County Council of Staffordshire. I may say that, instead of the police taking over the management of the Sale of Food and Drugs Act, it is placed in the hands of the Sanitary Committee of the Council, and the chairman of the Sanitary Committee, in conjunction with Mr. Faber and myself, drew up a resolution in favour of an international conference.—The international conference being against all food adulterations, or only adulterated dairy produce?—The international conference was suggested in the House of Lords by the Duke of St. Albans, and in consequence of a representation made by the Danish Minister to Lord Rosebery.—On dairy products?—On the importation of dairy products.—It applied exclusively to dairy products, I presume?—It did.

(To be continued.)

BRISTOL AND THE FOOD AND DRUGS ACTS.—The Watch Committee have been further considering the subject of the administration of the Foods and Drugs Adulteration Act, and it has been found that the four inspectors have little time for the work, and in some cases very few samples have been taken because the police-inspectors were otherwise occupied with their duties. The committee consider it wise to appoint an inspector, whose sole duty it shall be to obtain samples under the Food and Drugs Act. This will entirely relieve the four inspectors of this work, and set them free for their ordinary duties.

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Food and Sanitation.

SATURDAY, APRIL 6TH, 1895.

CUT THE CACKLE AND COME TO THE 'OSSES.

WE have waited patiently to see if the Select Committee to inquire into the Adulteration Acts would get to work in earnest, but it is still engaged in the profitless task of "ploughing the sands." Witness succeeds witness with the same dreary tale, some, like Mr. Hickey, offering evidence of no value whatever, as they have no actual knowledge of the question, and others, like Mr. Harald Faber, seizing the occasion to puff Danish butter. Mr. James Hudson informed the committee that there is much adulteration of butter, and he in turn will be followed by others, who will at equal length declare that lard, ginger, coffee, &c., are adulterated. All this class of evidence is mere trifling, and a waste of the committee's time. Everyone knows that adulteration exists, and that it is widespread. We do not need experts to tell us that, and it was not for the obtaining of such evidence that the committee was appointed. Its *raison d'être* was to discover a means of more adequately enforcing the Food and Drugs and

Margarine Acts, and its inquiries should be directed to finding out why the Acts are practically a dead letter in so many parts of the kingdom. For this purpose the evidence of the Food and Drugs Act inspectors and the public analysts concerned with enforcing the Acts is what is really wanted, but no representatives of either of these bodies have as yet been examined. It would be a much more sensible proceeding if the committee would shut down the useless evidence it is being so deluged with, and enter upon its real work of examining witnesses who have practical information to give as to the causes why the Acts are in so large a measure not enforced, and suggestions to make for an amended Adulteration Act. The present class of dreary nonsense could go on for years if the patience of the committee lasted, and it is high time to "cut the cackle and come to the 'osses."

THE GOVERNMENT AND THE TUBERCULOSIS COMMISSION REPORT.

WHAT is the matter with the Government that it shuffles so much over this report? The Commissioners were appointed in 1890, being Lord Basing, Professor Brown, Dr. George Buchanan, Mr. Frank Payne, and Professor Burdon Sanderson. After waiting for nearly three years for the report, members of Parliament interested in the subject began to inquire when it might be expected. On the 2nd February, 1893, Lord Wolmer asked the President of the Board of Agriculture whether he was aware that much inconvenience had been caused by the delay in the publication of the report of the Departmental Committee which was appointed more than two years ago to inquire into the question of tuberculosis, and whether he could inform the House when that report might be expected. The President of the Local Government Board (Mr. H. H. Fowler) said: "The Royal Commission which was appointed in 1890 has not yet reported. I have communicated with the Commission, and the reply which I have received is that the Commission have not yet completed their inquiries, and that at present they are unable to state when their report will be made."

On the 14th February, 1893, Mr. Yerburch asked the President of the Board of Agriculture whether, in view of the recent Agricultural Conference having unanimously passed a resolution to the effect that tuberculosis

should be included in the Contagious Diseases (Animals) Acts, he had taken any steps to secure an early report from the Royal Commission upon Tuberculosis. Mr. Gardner said in reply—"We have frequently been in communication with the Royal Commission with regard to this matter, and every endeavour is being made by them to expedite the completion of their work so far as is compatible with complete scientific investigation of the questions committed to them."

On the 11th April, 1893, Mr. Field again asked the President of the Local Government Board whether the bovine tuberculosis report was ready, and if not, when it might be expected. Mr. H. H. Fowler replied: "The hon. member will probably recollect that on the 17th March I informed him that it was anticipated that the investigations of the Royal Commission might be completed by the end of June, and that the report would be presented as soon as possible afterwards."

The subject was again raised by Mr. Field on the 1st June, and Mr. W. Redmond asked the President of the Local Government Board to point out to the Commissioners the desirability of reporting as quickly as possible.

On the 24th November, 1893, in reply to Mr. Field, Mr. H. H. Fowler stated that it was confidently expected the report would be issued next month.

On the 8th December, 1893, Lord Wolmer asked the President of the Local Government Board whether it was expected that the departmental report on animal tuberculosis would be presented on an early date, and if not, whether, in view of the great pecuniary loss being suffered by butchers throughout the country, special representations would be made to the Committee to finish their enquiries (which had now extended over three years) and submit their report without further delay. In reply, the secretary of the Local Government Board still expressed the confident hope that the report would be issued that month.

Sir W. Foster, in replying to a question by Sir Mark Stewart on the 18th December, said the report "will" shortly be issued.

In reply to Mr. Field, on the 26th February, 1894, Mr. H. H. Fowler said—"The report will shortly be issued."

On the 15th March, 1894, in reply to Mr. Field, Mr. Shaw-Lefevre said—"I am informed that the work of the Royal Commission on Tuberculosis is being proceeded with with all possible speed, and that it is hoped the report will be issued shortly."

On the 10th May, 1894, Mr. Field again enquired about the report, and Mr. Shaw-Lefevre said—"I am informed by the Commissioners that satisfactory progress is being made with the report, which may shortly be expected." Mr. Field asked if a date could be fixed, "because," he added, "I have been asking questions upon this subject ever since I have been in the House." Mr. Shaw-Lefevre, however, could add nothing to the answer he had given.

Mr. Chaplin, on the 28th May, asked the reason for the continued non-appearance of the report, and Mr. Shaw-Lefevre said:—

"The Royal Commission on Tuberculosis was appointed on the 21st July, 1890. I am informed by the Commission that they have completed the taking of evidence, but have been engaged upon a long and elaborate experimental inquiry. Owing to the illness of one of the inquirers there has been a delay in the completion of one of the scientific reports, but this is now being revised in passing through the press. Immediately it is printed the Commissioners will meet, and their report may be shortly expected."

Then on the 29th June, 1894, Mr. Field asked about the report, and reminded the President of the Local Government Board that this was "about the sixteenth time I have asked it." Mr. Shaw-Lefevre said: "The Commissioners are now considering their report."

In reply to Mr. Hunter (the member for Aberdeen), Mr. Shaw-Lefevre said, on the 20th July, 1894, "The

report will shortly be issued;" and in answer to Mr. Donald Crawford, who on the 13th August, 1894, inquired about the delay, the same stereotyped answer was made by Mr. Lefevre, "The report will shortly be issued."

The report has not yet been issued.

These facts look very fishy, and it is surely time the Government ceased shilly-shallying over the question, seeing that it is of such great interest to the large body of cattle dealers and butchers, who now suffer heavy losses by condemned tuberculous meat.

SOME POINTS OF DIFFERENCE

BETWEEN

ENGLISH AND CONTINENTAL METHODS OF MUNICIPAL SANITARY ADMINISTRATION.

By T. M. LEGGE, M.D., Oxon. D.P.H.

(Continued from page 98)

A more flagrant case of the sewage pollution of a river probably could not be found than that of the Seine below Paris, where the condition of the river is so foul as simply to baffle description. The Senne, too, below Brussels is a most unlovely stream for the same reason. But considering how persistently the commandment—Thou shalt not pollute the rivers—is broken in this country, it is unfair for us, living in glass houses in this respect, to throw stones at continental cities for allowing the magnificent rivers which flow past their gates to cover the multitude of their sewage sins, however much we may deplore the fact. It is lamentable how often the most splendid drainage schemes which in the towns themselves command our highest admiration, at their destination only cause sensations of the extremest disgust. For it must be acknowledged that the sewers of both Paris and Brussels, which are modelled on the same plan, have certain advantages over those adopted in this country and in Berlin. Those of Paris are, as is wellknown, gigantic subways, carrying not only the sewage, but also the water-pipes, the telegraph and telephonic wires, and the tubes containing compressed air. On both sides in the larger sewers, or on one side only in the smaller, is a foot-path for the employés to walk along. The gas-pipes, owing to the consequences of a possible explosion, are not carried in them. This arrangement obviates the abominable nuisance of having to take the street up when some slight defect occurs in the water-pipes or drains. But many of the sewers are very old, some have hardly any fall, and Paris must have to face many difficulties in abolishing its cellpools and introducing a universal water-carriage system.

The condition of things in the Scandinavian capitals brings to light in the clearest manner possible that if a pail system is to be adopted, the arrangements for so doing, if it is not to be a miserable failure, must be organised by the city authorities themselves. This has been done with very fair success in Stockholm. In Christiania and Copenhagen the state of affairs is most deplorable, as the removal of the pails, etc., has been handed over to contractors, whose first thought is not to scavenge efficiently, but to guard themselves from any possible loss of money.

SCHOOL HYGIENE, ETC.

There is just one other point I should like to refer to, and that touches school hygiene. In Brussels all the communal schools are periodically visited by physicians, generally once every fortnight, who have to report on the sanitary conditions and interrogate the teachers on any point that they think requires attention. Short talks are given to the pupils on subjects related to hygiene, such as care of the teeth, the value of vaccination, etc. They have [the power of preventing the attendance at school of children from infected households, and should the teacher see fit he can send a child at any time to see

the physician at his house. The *Bureau d' Hygiene*, recognising how largely school teachers can assist the local authorities in the prevention of infectious diseases, circulates amongst them a small pamphlet giving instructions as to the symptoms of the commoner infectious ailments and others that are of interest from a school hygiene point of view. It provides, too, at every school a small box, containing a few medicaments and bandages, etc., for first aid to the wounded.

As is well-known, gymnastics play an important part in school-life abroad, and every school in the three Scandinavian capitals is provided with an excellent gymnasium. Of any town that I have seen Stockholm has by far the most handsome buildings for school purposes.

There are many other points I should like to have dwelt upon, but which time will not permit of, such as the housing of the working classes, a subject which I am glad to say receives far more attention in this country than in any other; the certification of births and deaths and of the insane by a medical man directly in touch with the Health Office, as at Brussels; the annual reports of medical officers of health abroad, etc. I shall conclude by just alluding to the recent Sanitary Congresses at Paris and Dresden, at the latter of which the views on quarantine that have proved so efficacious against the spread of cholera in this country and helped so much to advance sanitary progress were accepted, if not in their entirety, certainly to a much greater extent than similar proposals had ever been before, by the various Powers of Europe.

(To be Continued.)

ADULTERATION PROSECUTIONS.

COFFEE.—At Repton, on March 27, George White, shopkeeper, Melbourne, was summoned for selling adulterated coffee on Jan. 22. Captain Sandys, Inspector under the Foods and Drugs Act, said he found 55 per cent. of chicory in the coffee. Defendant was fined £1 and costs.—Thomas Tivey, grocer, Melbourne, was summoned for selling adulterated coffee at Melbourne on Feb. 7. Captain Sandys said that 90 per cent. of the coffee was chicory. He was fined 30s. and costs.

OATMEAL.—At Belper, on March 28, John Brooks, grocer, Milford, was charged with selling adulterated oatmeal to Captain Sandys, the Inspector under the Food and Drugs Act. The defendant pleaded guilty. Captain Sandys said he was told that the oatmeal had been bought of Messrs. Brown, of Derby. They gave no warranty, and he could not touch them. It was the fifth case in which he had prosecuted in which this firm was concerned. Whatever penalty or costs arose the amount could be recovered from the person who sold to him. A second case was heard in which H. Kent, of Duffield, grocer, was charged with a similar offence. The oatmeal was purchased from Messrs. Fletcher, of Milford, and they were seen by the Inspector, who was told the meal came from Messrs. Brown. No warranty was given. The Bench believed the defendants acted in a perfectly innocent manner, and were the aggrieved parties. There was no option, however, but to inflict a penalty of 2s. 6d. and the costs.

BUTTER.

At Marylebone, on March 26, Mr. Plowden gave his decision in a case of considerable importance to the butter trade, and involving a point of law in connection with the Margarine Act of 1887. The defendant was Alfred Edmonds, of 161, High-street, Camden Town, and he was summoned at the instance of the Butter Association for exposing for sale and selling margarine without having it so labelled or delivering it in a printed wrapper, as provided by the Margarine Act. The case was fully heard last week.—Mr. Plowden, in giving his decision, said the only question in dispute was whether the margarine, which was supplied from a block of the article on a slab on the counter, could be seen by the purchaser. Besides the block from which the sample was taken there was a shelf above the level of the counter on which there were three tubs of margarine with labels attached, and above the tubs a placard bearing the words, "All these are sold and guaranteed as pure margarine." It was denied by the prosecutor that there were any labels on the tubs at the time of the purchase. A conviction was asked for on the ground that although no sample of the article in the tubs was taken the margarine was exposed for sale. Two questions arose—whether the margarine, from which the sample was taken, was exposed for sale, and whether, assuming the tubs on the shelf not to have been labelled, the defendant could be convicted when, in point of fact, no purchase had been made and no sample taken for analysis. On the authority of the decision in

"*Lawrence v. Crane*"—which was on all fours with this case—he held that the margarine on the slab was not exposed for sale. The prosecution had established to his satisfaction that there were no labels attached to the tubs on the shelf, and he was equally clear that the material in the tubs was exposed for sale. Nevertheless, his decision must be in favour of the defendant. By section 10 of the Margarine Act any substance not marked margarine must be presumed to be butter. The case was slightly complicated by the fact that the placard declared the tubs to contain margarine. Had nothing further been required by the Act he should have convicted the defendant, but it was pressed upon him that no sample had been taken from the tubs for analysis, and that section 12, which required that all proceedings under the Act must be the same as those prescribed by sections 12 to 28 of the Food and Drugs Act, had not been complied with. In spite of the arguments of the prosecutor he was of opinion that the taking of the sample was a necessary precedent before the defendant could be convicted. As no such step was taken the summons must be dismissed. He declined to give the defendant costs, for it was plain that had the sample been taken from the tubs and not from the slab a conviction must have followed.

At the Chester County Police-court, on Mar. 30, Walter Thomas, the postmaster of Pulford, near Eaton, Cheshire, who is also a shopkeeper, was summoned for selling a pound of butter which was not of the nature and quality demanded. A county council inspector purchased at the defendant's shop, for 1s. 1d., a pound of butter which, on analysis, was found to be margarine. Defendant, whose advocate said the article was bought as ordinary tub butter, from Mr. Lightfoot, of Chester, was fined 20s. and costs.

ADULTERATED AMERICAN CHEESE.

At Liverpool on March 27, Alexander J. Barr, of Stanley-street, was summoned under the Food and Drugs Act for giving a wrong warranty respecting some cheese he sold to C. M. R. Dickson, provision dealer, Back Canning-street. Mr. Moss prosecuted and Mr. Urwin defended.—Inspector Baker deposed that on February 15 he purchased two samples of cheese from a shop in Wavertree-road belonging to Dickson, and on being analysed the samples were found to be adulterated. Mr. Dickson was summoned on March 13 for selling adulterated cheese. He thereupon produced a written warranty between himself and Barr, and the case was dismissed. A summons was afterwards issued against Barr for giving a wrong warranty.—Mr. Urwin admitted that a warranty had been given, and stated that Mr. Barr was a wholesale dealer. He had received a consignment of cheese from an American merchant, who, in his order, had been told not to send any but pure cheese, and upon the strength of that order the warranty was given.—The magistrate said he did not think it had been a case of wilful misrepresentation on the part of Mr. Barr, but in order to make people a little more cautious in future in giving their warranties he should inflict a penalty of 40s. and costs.

MARGARINE.

At Smethwick Police-court, John Proctor, grocer, of Beerwood-road, Smethwick, was summoned at the instance of Mr. Van Tromp, inspector under the Food and Drugs Act, for selling butter not of the nature, substance, and quality demanded, it being margarine and containing only 19 per cent. of real butter. The defendant was further summoned for exposing margarine for sale without having a proper label upon it. Harry Toy, an assistant in the employ of the inspector, deposed that on the 18th of February he visited the defendant's, and asked to be served with half-a-pound of butter. He was supplied with it by Mrs. Proctor, and paid 6½d. for it. There was no label on the article from which the butter was taken, and it was also wrapped in plain paper. On being subsequently analysed by the public analyst, the article was found to contain only 19 per cent. of real butter. Defendant said he purchased the article as pure butter, and had no intention of deceiving anyone. He paid 10s. 6d. a dozen for it, but received no guarantee with it. Mr. A. H. Hebbert (magistrates' clerk) remarked that defendant should protect himself by getting a guarantee. Defendant was fined 20s. costs in the second case, but nothing was done in the first. The total amount of fines and costs was £2 8s.

MILK.

At the Smethwick Police-court, Elizabeth Hattatt, grocer, &c., of Ballot-street, Smethwick, was summoned at the instance of Mr. Van Tromp, inspector under the Food and Drugs Act, for selling adulterated milk. On the 18th February, Samuel Toy, an assistant in the employ of the inspector, purchased two samples of milk from defendant, and these, upon being analysed, were found to contain 11 and 13 per cent. of added water respectively. A fine of 5s. and costs was imposed in the first case, and defendant was ordered to pay the costs in the other, amounting in the aggregate to £2 2s. 6d.—Henry Ward, of Moor-street, Quinton, was summoned for selling milk from which 28 per cent. of its original fat had been abstracted. Defendant said he bought the milk from various people, and sold it as it was delivered to him. Defendant had been fined previously for a similar offence, and was now ordered to pay 20s and costs; in all, £2 5s. 6d.—John Robinson, of Thomas-street, Smethwick, was also summoned for selling adulterated milk. Mr. Van Tromp said this was the worst case of the whole lot, as the sample of milk purchased from defendant's shop was found to

contain 22 per cent. of added water. Defendant said he purchased the milk from several wholesale men, and sold it in the same condition as he received it. The inspector's assistant stated that he took a sample of the milk from one of the wholesale men from whom defendant said he obtained his milk, and it was perfectly pure. Mr. Tangye said it was a most shameful case, and defendant would have to pay 40s. and costs, amounting in all to £3 3s. 6d.—George Harley, of Grantham-road, Smethwick, was also charged with a similar offence. In this case the sample of milk purchased from defendant was found to contain 17 per cent. of added water. Defendant pleaded that he had only one cow, and said nothing was done to the milk after it came from the cow. A fine of 10s. and costs was imposed, in all £1 13s. 6d.

At Wakefield Petty Sessions, Henry Bedmore, Horbury, was charged with selling adulterated milk.—Mr. Charles W. McDonald, inspector under the Food and Drugs Act for the West Riding County Council, proved that it contained 72 per cent. of milk and 28 per cent. of added water. The Bench inflicted a penalty of £2, and as the costs amounted to £1 19s. 6d. he would have £3 19s. 6d. to pay, or in default one month's imprisonment.

At Widnes, on March 28, George and John Percival, farmers, of Park-side Farm, Aston, Cheshire, and Harry Stanley, of Farnworth, their servant, were summoned under the Food and Drugs Act for selling milk not of the nature and quality demanded. Police-sergeant Bennett said that on the 16th he purchased from the defendant Stanley, who was selling milk from a shandry, a quart of "new milk," for which he paid 2d. When told that the milk had been bought for the purpose of analysis Stanley showed witness a board on which were painted the words, "Cheap new milk; guaranteed milk solids, 2d. per quart, 10 per cent." The public analyst certified that the milk had been deprived of upwards of half of its cream and contained 10.29 per cent. of solids. Mr. G. Allen, of Runcorn, who defended, contended that the purchasers were not deceived, as there were two boards on the sides of the shandry containing the words quoted above. The defendant George Percival admitted being fined at Runcorn for a similar offence. The defendant Stanley, who gave evidence, admitted in cross-examination that he shouted "New milk" from his cart, George Percival was fined 20s. and £1 1s. 8d. costs, and John Percival was mulcted in costs, and Stanley was fined 5s. and 12s. costs.

At Aston Police-court on March 29, before Dr. Griffiths and Mr. A. R. Dean, George Wilkins, shopkeeper, 345, Wheeler-street, was summoned for selling milk adulterated with 27 per cent. of added water.—Mr. B. Bott, inspector under the Food and Drugs Act, proved the case, and the defendant, who said he was indemnified, against any fine which might be inflicted, by the wholesale dealer, was ordered to pay 40s. and costs.

At Uxbridge Petty Sessions, Percy George Vnicombe, of Colne Farm Dairy, Uxbridge, was summoned by Robert Watts, inspector under the Food and Drugs Act for Central Middlesex, for having sold milk deficient in fat to the extent of 25 per cent.—Mr. Ricketts, jun., who defended, said Mr. Vnicombe purchased the milk as new milk of Mr. Foote, of Hillingdon Court Farm, and sold it in the same form in which he bought it. He called as a witness the defendant, who corroborated his statement.—A fine of £1, including costs, was imposed, the Chairman remarking that it appeared to have been the defendant's misfortune that he had been compelled to purchase the milk.

ADULTERATION IN DUNDEE.—Mr. G. D. Macdougald, the city analyst, examined 5 samples of butter, 19 samples of milk, 1 of lard, and 1 of cream of tartar during the quarter ended 15th February. All were found genuine, with the exception of a sample of milk, which was adulterated with 15 per cent. of skim milk, and the sample of cream of tartar, which contained 8½ per cent. plaster of Paris.

SPENT GINGER.

At Lancaster Castle, on March 30, another batch of five Morecambe grocers were convicted under the Food and Drugs Act for selling ground ginger adulterated with spent ginger, making eleven convictions against Morecambe grocers for this offence within the past month. James Edward Stephenson, whose sample contained upwards of 40 per cent. of spent ginger, was mulcted in a penalty of £5 and costs (one guinea); Alice and Emily Currey, whose sample contained upwards of 10 per cent. spent ginger, were fined 20s. and costs (19s. 6d.); Herbert Hill, sample containing upwards of 30 per cent. spent ginger, was fined 20s. and costs (19s.); Richard Hadwen, sample containing upwards of 25 per cent. spent ginger was fined 20s. and a guinea costs; Richard Baines Lee, sample containing 5 per cent. spent ginger, was fined 5s., and a guinea costs. These prosecutions have caused quite a feeling of uneasiness among grocers throughout the district, which will not be alleviated by the announcement of the Bench that they would have to inflict the fullest penalty of £20 and costs if these cases continued to be brought before them. The Bench advised that wholesale dealers should have their ground ginger analysed before retailing it. Their feeling is that it is all derived from one source primarily, and with a view to inducing the wholesalers to proceed against the manufacturer, they have, in cases where the identity of the wholesale agents was established, inflicted the heaviest penalties.

At the Police-court, Bridlington, H. A. Wittgreffe, grocer, Hilderthorpe, was summoned for having sold ground ginger which was adulterated with 50 per cent. of exhausted ginger.—Superintendent Harvey deposed to going to defendant's shop and asking for 2oz. of ground ginger, at the same time showing him the notice

that he wanted it for analysis. Defendant said that he had not quite 2oz. left in stock, but, emptying the canister, let the officer have all that was in, and charged 1d. for it. Witness offered to divide it into three parts, but defendant said he did not want any, and witness therefore divided it in two parts, wrapped it up and sealed it. One part was sent to the public analyst the following day. Mr. Brigham, who appeared for defendant, submitted that ground ginger was an article of small consumption, and this had been in stock four years. He also contended that the quantity purchased was not a sample, as required by the Act, but was all the defendant had; that there was an important omission in not having delivered one part to the defendant; and further, that it was not sufficient to give the notice, the Superintendent should have said that it was required for analysis by the public analyst. The Chairman said they would adjourn the case for a week to consider these points.

SPIRITS.

At Leicester, on March 26, Thomas Butler was summoned for selling adulterated whisky. He pleaded guilty.—The Town Clerk stated that the whisky was 4.54 degrees below the 25 degrees allowed under proof.—Fined 20s., or 14 days, the license not to be endorsed.—Charles Morrison, licensed victualler, Dover-street, was summoned for selling adulterated gin on the 28th ult.—The Town Clerk said the gin was 4.34 under the proof allowed.—Tom Bent, the inspector, stated that he purchased the gin through the window in the passage.—Mr. Fowler stated that there was a notice in both the rooms that the spirits were adulterated, but there was not one in the passage.—A fine of 20s., or 14 days, was imposed.

At Barnsley, on March 27th, Edwin Bray, landlord of the Windmill Inn, Skelmanthorpe, was charged under the Food and Drugs Act, at the instance of John Henry Bundy, inspector to the County Council, with selling adulterated whisky. Mr. Bundy said he went to defendant's house on the 26th ult. and purchased a pint of whisky, for which he paid 2s. 6d.; he divided it into three parts, and at defendant's request left one sample with him. He retained one, and sent the third to Mr. Allen, analyst, of Sheffield, who certified that the alcoholic strength was 37.7 under proof. It contained 17 parts of added water in excess. The defendant said they found out the mistake as soon as it was sold. A quart of whisky was fetched up in a hurry, and he added a little water. He was called away, and his wife added some more, not knowing that he had done it. A fine of 10s. and costs was imposed.

At Appleby, Mason Thompson, New Inn, Hoff, was charged with selling adulterated gin and whisky to Supt. Smith, Appleby, on February 28.—Supt. Smith said the certificates from Mr. Hellon showed that the whisky was 13.5 degrees, and the gin 17 degrees below the legal limit. He looked particularly to see whether there was any notice similar to that now put in by the defendant (to the effect that all spirits were diluted with water), and he was prepared to swear that there was not one in the bar, or elsewhere in the house as far as his observation went.—Sergt. Storey gave corroborative evidence.—Defendant and his wife both swore that a notice similar to the one produced had been nailed up over the door of the passage leading to the bar ever since they went to the house a year last Whitsuntide. Mrs. Thompson admitted that she did not call his attention to the notice, and added that she knew nothing about "taking down spirit."—The Chairman said as there was a conflict of evidence, the defendant would have the benefit of the doubt. There was no doubt the "stuff" was of inferior quality, and defendant had had a narrow escape.

At Halifax, on March 29, William Helliwell, innkeeper, of Luddenden, was charged, under the Food and Drugs Act, with selling adulterated whisky. He pleaded guilty.—Inspector W. H. S. Crabtree stated that on February 21 he purchased half a pint of whisky at the defendant's and told him that it was his intention to send the same for analysis. He left one part of the whisky with the defendant, and another portion he forwarded to the county analyst. The analysis showed that the alcoholic strength of the whisky was 37.3 under proof. It contained 16.5 excess of water.—In defence, defendant said he was just preparing the whisky when the inspector entered, and the sample which he took was not in a condition for sale. He told the inspector this, and asked him to have the whisky from another keg, but he would not do so.—Inspector Crabtree replied that defendant was looking out of the window when he went in. He simply asked for half a pint of whisky and defendant served him with this from a keg on a shelf. Then when witness said it was for analysis, he asserted that it was not in a condition for sale, and wanted him to have some out of another keg.—A penalty of £1 and £1 3s. costs was imposed. In any future cases, the chairman remarked that the penalty would be very much raised.

At Coventry, on April 1, Horace Bower was summoned for selling rum adulterated 9 per cent. beyond the 25 per cent. allowed by the Act. Defendant formerly kept the Board, Cross Cheaping. A fine of £1 and £1 5s. costs was imposed.—Eliza Adderton, Rose Inn, Well-street, for selling whisky adulterated 33 per cent. above the 25, had to pay 43s.

At Mold Petty Sessions, Isaac Davies, Railway Inn, was summoned for supplying rum which was under-proof. Mr. Superintendent Davies said that he received the certificate from the analyst, which was to the effect that the rum had been adulterated to the extent of 37½ per cent. with water. Fined 20s. and 23s. 6d. costs.

APPEALS. GROUND GINGER.

IRONS v. VAN TROMP.

THIS was a special case stated by justices for the county of Stafford, and tried in the High Court on March 28. The appellant was charged at a Court of petty sessions at Handsworth, under section 6 of the Sale of Food and Drugs Act, 1875, with selling to one Samuel Toy, to his prejudice, certain ground ginger which was not of the nature, substance, and quality of the article demanded by the purchaser, being adulterated with at least 90 per cent. of exhausted or spent ginger. The appellant was a retail grocer, carrying on his business at Great Barr, a populous place in South Staffordshire. Toy, who was an assistant-inspector under the Act, called at the appellant's shop and asked for two ounces of ground ginger for the purpose of analysis. The ginger was supplied to him, by his request, out of a tin canister labelled "Warranted Genuine Pure Ground Ginger." On analysis the ginger was certified to contain at least 90 per cent. of exhausted or spent ginger—that is, ginger from which the pungent and aromatic qualities have been abstracted by solvents probably for making or flavouring ginger-beer. Evidence was given by the appellant that he had purchased the ginger as genuine ginger, made up in four canisters of 2lb. each, from one of which the purchaser was served, and that he had no reason to believe, at the time when he sold it, that the article was otherwise than genuine ground ginger; that he sold it in the same state as when he purchased it, and that he received in connection with the purchase of it an invoice wherein the same was described as ground ginger, and that each of the canisters was labelled as mentioned above. It was contended on behalf of the appellant that the invoice and label constituted together a written warranty with respect to the contents of each canister within the meaning of section 25 of the Sale of Food and Drugs Act, 1875. The magistrates overruled the contention, and found that there was no warranty given to the appellant by his vendor, and convicted the appellant.

Mr. Montague Lush, for the appellant, contended that the decision of the justices was wrong. Their attention had not been called to the case of "Laidlaw v. Wilson" (L.R. (1894), 1 Q.B. 74), which was decisive of the present case in the appellant's favour. He also referred to "Farmers' Company v. Stevenson" (60 L.J. M.C., 70).

Mr. H. D. Greene, Q.C., for the respondent, was not called upon to argue.

Mr. Justice Cave said that the justices had convicted the appellant on the ground that there was no written warranty within the meaning of section 25 of the Act. Under that section a person charged was entitled to acquittal if he could prove that he had bought the article with a written warranty that it was the same in nature, substance and quality as that demanded by the prosecutor. In his lordship's opinion the justices had rightly held that there was no written warranty. The case of "Laidlaw v. Wilson" had been referred to as if it governed this case. So it did, but in a sense adverse to that contended for. In that case there was a distinct written warranty apart from the invoice. The justices were right in this case in refusing to hold that the invoice constituted a contract of warranty. In some cases the invoice might be looked at, as, for instance, in "Farmers' Company v. Stevenson," but only for the purpose of showing whether the goods in question were delivered under the written contract in question. But in a case such as this, where there was no written contract of warranty, the label did not import anything in the nature of a warranty. His lordship, therefore, held that the appellant had been rightly convicted, and dismissed the appeal. Mr. Justice Wright concurred.

CHEWING GUM.

SHORT v. SMITH

IN the Queen's Bench Division, on March 29, before Justices Cave and Wright, an appeal from the decision of certain Justices at Chesterfield, who had refused to convict the respondent of an offence under the Food and Drugs Act, 1875, was heard.

Mr. Etherington Smith, who supported the appeal, said the appellant purchased of the defendant three sticks of chewing-gum, and each was labelled, "cloves, for chewing only, and not to be eaten." A stick was submitted to the county analyst, who reported that it contained 35 per cent. of paraffin wax, that the wax was insoluble, and that if a portion of it was swallowed it would be injurious to health.—Mr. Justice Cave: What is the article used for?—Mr. Smith: I believe it was chewed by children to a great extent.—Mr. Justice Cave: What do you say it is—a food or a drug?—Mr. Smith said his case was that it was a food, and that the magistrates ought to have convicted.—The respondent did not appear, either by counsel or in person.—Mr. Justice Cave said he was of opinion that the appeal should be dismissed. The magistrates had found that the article in question was not an article of food, and he could not say they were wrong.

Mr. Justice Wright concurred.

ADULTERATION OF COMMERCIAL PEPTONES.—L. Hugouneq, in the examination of some samples of commercial peptone, found two which reduced Fehling's solution, and on further examination proved to contain about 33 per cent. of milk sugar. One of these samples bore the name of a firm of good repute, while the other emanated from a less known source. That the sugar present was lactose was confirmed by the examination of the ozonized prepared from it. The total nitrogen of one of the samples amounted to 8.34 per cent., while a good sample of unadulterated peptone yielded 12.72 per cent. (Jour. de Pharm., Pharm. Jr. and Trans.)

PUTRID FISH.

AT Barnstaple, on March 28, William Porter, hawker, was charged with selling two crabs which were unfit for human food.—Defendant pleaded guilty, and said he was only a poor man.—Mr. Bosson, town clerk, prosecuting, stated that on the 20th ult. Porter asked Mr. Mugford, spirit merchant, to buy the crabs, at two o'clock, remarking, "They were all alive at eleven o'clock to-day. They are just out of the crock."—Defendant interrupted that the crabs were watery on account of being over-boiled.—Dr. Mark Jackson, medical officer of health, said the crabs were in a state of advanced decomposition, part of the tissue having been eaten away by decomposition. The crabs must have been dead for days, and were totally unfit for food—simply stinking. The condition could not have been produced by over-boiling.—A fine of 40s. and costs, the latter including half a guinea each for counsel and the medical officer, was imposed, with the alternative of three weeks' imprisonment.

WHAT SHALL WE EAT?

W. O. ATWATER, Ph.D., professor of chemistry in Wesleyan University, in a pamphlet issued under the auspices of the United States Department of Agriculture, says:—

"A quart of milk, three-quarters of a pound of moderately fat beef—sirloin steak, for instance—and five ounces of wheat flour, all contain about the same amount of nutritive material; but we pay different prices for them, and they have different values for nutriment. The milk comes nearest to being a perfect food. It contains all the different kinds of nutritive materials that the body needs. Bread made from the wheat flour will support life. It contains all of the necessary ingredients for nourishment, but not in the proportions best adapted for ordinary use. A man might live on beef alone, but it would be a very one-sided and imperfect diet. But meat and bread together make the essentials of a healthful diet. Such are the facts of experience. The advancing science of later years explains them. This explanation takes into account, not simply quantities of meat and bread and milk and other materials which we eat, but also the nutritive ingredients, or 'nutrients,' which they contain."

The chief uses of food are two: To form the material of the body and repair its wastes; to yield heat to keep the body warm, and to provide muscular and other power for the work it has to do. Dr. Atwater has prepared two tables showing, first, the composition of food materials, the most important of which are the nutritive ingredients and their fuel value; second, the pecuniary economy of food, in which the amount of nutrients is stated in pounds. In the first table we find that butter has the greatest fuel value, fat pork coming second, and the balance of the foods mentioned being valued as fuel in the following order: Cheese, oatmeal, sugar, rice, beans, cornmeal, wheat flour, wheat bread, leg of mutton and beef sirloin, round of beef, mackerel, salmon. Codfish, oysters, cow's milk, and potatoes stand very low as fuel foods.

From the second table we learn that the greatest nutritive value in any kind of food of a specified value (Dr. Atwater takes 25 cents' worth of every kind of food considered) is found in cornmeal. In 10 pounds of cornmeal there are a trifle more than 8 pounds of actual nutriment. In 8½ pounds of wheat flour there are over 6½ pounds of nutriment; in 5 pounds of white sugar there are 4½ pounds of nutriment; in 5 pounds of beans there are 4 pounds of nutriment; in 20 pounds of potatoes there are 3½ pounds of nutriment; in 25 cents' worth of fat salt pork there are 3½ pounds of nutriment; in the same value of wheat bread there are 2½ pounds; in the neck of beef, 1½ pounds; in skim milk cheese, 1½ pounds; in whole milk cheese, a trifle more than 1½ pounds; in butter, 1½ pounds; and in smoked ham and leg of mutton about the same; in milk, a trifle over 1 pound; in mackerel, about 1 pound; in round of beef, ¾ of a pound; in salt codfish and beef sirloin, about ¾ a pound; in eggs at 25 cents a dozen, about 7 ounces; in fresh codfish, about 6 ounces; and in oysters at 35 cents a quart, about 3 ounces.

HORSE-MEAT SAUSAGES.

M. NOCARD has reported to the Paris sanitary authorities on the question of horse meat in sausages. M. Nocard had been empowered by the Prefect of Police to examine into a complaint put forward by a syndicate of the pork butchers of Paris, in which it was suggested that the vendors of sausages made from horse meat should be obliged to attach a special label to the sausages, indicating their nature. At that time, says the writer, there were no means by which horse meat could be distinguished from that of other animals, and M. Nocard, thinking that it was useless to lay down any measure that would receive no practical support, simply advised the Prefect of Police to redouble his care in the supervision of the abattoirs and of the enclosures where horses were slaughtered. Now, however, a simple and practical method has been discovered by M. Edelman and M. Brautigam, by which this meat may be distinguished from that of other animals, even when it is mixed in very small quantities with the other meat.

This question, says M. Rochard, in an article in the *Union Médicale* for February 16, is an important one, for the consumption of horse meat is gradually increasing. In 1892, 16,483 horses, 206 donkeys, and 43 mules were slaughtered. All this meat is not sold in the 120 butcher shops which actually exist in Paris for the sale of horse meat alone, but the choice parts are sold, and the rest is cut up into sausage meat. This new

industry is not attended with any danger in Paris, because the abattoirs, the shops, and the factories are under the constant supervision of competent veterinary surgeons; but in the suburbs and provinces such supervision exists in name only.

On the other hand, says M. Rochard, if sausages made from horse meat alone may be eaten in Paris without any danger arising from their consumption, the manufacturers who sell them without indicating their true nature deceive the public and carry on a dishonest competition with the pork butchers. For this reason, says the writer, it is fortunate that such a practical and sure method has been discovered whereby this deception may be revealed.

This method consists in treating a bouillon which is obtained from the suspected product with iodized water. If it contains horse meat, no matter how small the quantity, a peculiar violaceous reddish-brown colour will appear. The experiments made by M. Edelmann and M. Brantigam have been tested and verified in M. Nocard's laboratory and under his personal supervision. The procedure is easy, and does not call for a complicated outfit, the description of which may be found in M. Nocard's report to the Board of Health, which appeared in the *Compte-rendu des séances du Conseil* for February, 1895. This report ends with the statement that the Board of Health voted, without discussion, that the manufacturers of sausages made from horse meat should attach a special label to the sausages indicating their true nature.

ADULTERATED CLOVER SEED.

LAST year, about this time, I advised farmers when buying grass and clover seed to be very careful as to the purity and germinating properties of their purchase. Such a warning is even more necessary this year than it was last, and especially as regards clover, which is scarce and dear. A sample of foreign seed is thus reported on by the analyst to whom it was forwarded for examination:—"I have examined the sample, and find only 40 good seeds out of 623. The great bulk of the sample consists of dark brown shrivelled seeds, whose age I should not like to calculate, and I have regarded these as impurities. Even the 40 good seeds are but indifferent, and I question if there is much vitality in them. The analysis which I send speaks for itself."

Samples of German white clover.

White clover seeds	.. .. .	..	..	40
	(Poor at the best.)			
Ripe rib grass ..	.. .. .	..	..	31
Withered rib grass	.. .. .	..	..	24
Sorrel ..	.. .. .	..	..	70
Seeds of Timothy grass ..	.. .. .	..	..	3
Old, discoloured, and shrunken seeds of white clover	.. .. .	..	..	359
Other seeds of weeds, bits of straw, &c. ..	.. .. .	..	..	96
Fine quartz sand	.. .. .	..	..	—
	Total ..	..	..	623

Purity of sample, 6.4 per cent.

C. G. FREER THONGER, in *Farm and Home*.

FOOD FISH OF ALASKAN WATERS.

A CAREFUL study of the many varieties of food fish of Alaska has recently been made by one of the Government ichthyologists in the interests of the Smithsonian Institution, and the observations made are very valuable and interesting. In Alaska, every native is a fisherman, and the fish of these waters are so abundant and of such variety that the entire native population is able to support itself by this means. The report, it is to be hoped, will lead to some arrangement by which these quantities of food fish may be brought to the markets of the United States. The great wealth of Alaskan waters lies in their abundance of salmon. The natives catch the salmon by the aid of spears, nets and traps, and dry them at present for their own use exclusively. The large variety known as king salmon often weigh from sixty to ninety pounds apiece, and these are very abundant. The waters also swarm with codfish

equal, it is reported, to those of New England. In the northern rivers, several varieties of whitefish take the place of salmon. They grow to a weight of about thirty pounds, and have a delicious flavour. The rapid streams are well supplied with grayling; and Dolly Varden trout are very plentiful, and frequently exceed fifteen pounds in weight. Quantities of pike, dogfish, and redfish also abound. Probably the most abundant of all fish, however, are the common herring. These are very fat, and of an excellent flavour. It is said that vessels often sail for hours at a time through shoals of these herrings.

ANSWERS TO CORRESPONDENTS.

W. R. PARKER, M.D.—The price for back numbers is 3d. per copy, and many are out of print, hence the higher price for the volumes. The price for future volumes will be reduced.

THE SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XL.

(Continued from page 101.)

Have you anything further to say about the conference?—Yes; in consequence of that consultation between Mr. Faber and myself and the chairman of the Sanitary Committee, my council adopted unanimously this resolution: "That inasmuch as the Danish Government have suggested to the Government of this country the desirability of calling together an international conference to take steps against the international trade in adulterated butter, this Committee expresses its opinion that such conference is desirable, inasmuch as examination with international action would be an effective means of preventing the sale of adulterated butter."—When did that take place; what is the date of it?—This resolution was passed on the 25th July, 1893.—And has it been acted upon in any way?—No. I may quote what took place in the House of Lords in connection with this point. The Duke of St. Albans having made this application to the Government, in accordance with that proposition, Lord Rosebery said that "his part in the matter was a very simple one, namely, to explain that a proposal of the kind referred to was made by the Danish Government, but owing to the doubts expressed by the Board of Agriculture, the Board of Trade, and the Local Government Board" (all three of which unfortunately have to do with these things) "Her Majesty's Government did not agree to it. Inasmuch as negotiations on the subject were still proceeding, it would not be right for him to lay the papers on the table. His noble friend Lord Ribblesdale would answer the question, as it affected the Board of Agriculture." I may state that nothing has occurred since.—What was the date of that reply of Lord Rosebery's?—July 4th, 1893.—And nothing has occurred since?—Nothing has gone forward since.—What is your opinion now upon this proposed international conference: Do you think that it would be a good thing?—It would be a good thing; but I do not see why this country should not take action itself, by inspection at the ports,

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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYCINET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

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Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

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and do its own business without reference to what other countries do.—Has there been any complaint by the inspectors for North and South Staffordshire of the inactivity of neighbouring local authorities?—There has; we have inspectors both for North and South Staffordshire, that is to say, we divide the county into two districts which are worked by two separate inspectors, and both of those inspectors have repeatedly complained of the difficulty that they have in following up prosecutions where retail traders are convicted, in order to get at the wholesale dealers, because they live in the areas of other local authorities who will not exercise their powers under the Sale of Food and Drugs Act.—Do those inspectors act under the chief constable's authority?—No, under the authority of the Sanitary Committee of the Council.—Mr. Jeffreys: That is unusual, is it not?—It is unusual.—Sir Mark Stewart: Have you any opinion to express upon the advisability of their being under the County Council?—Although our inspectors are exceedingly active, I must say that I am somewhat disappointed with respect to the progress that we are making in putting down adulteration; for this reason, that the inspectors and their assistants are so well known that it is most difficult for the inspectors to get samples. One of our inspectors regularly employs a woman to go into shops, and buy for the purpose of analysis, because he knows quite well, that if either he or his assistant goes into a shop, he will not be served in the same way as the purchasing public would be served. So I must say that I think we must revise our practice in the County Council of Staffordshire, and extend our officials whom we empower to take samples.—Then, is the inference from your answer to my question that it would be better to employ the chief constable of the police instead of the Sanitary Committee?—I am not quite prepared to go so far as that. We might use the police to a certain extent.—How many samples do the inspectors take, do you suppose, in a year?—I have here a quarterly report of my County Council, if I may refer to the report of our county analyst, and to that of the inspectors. Under the article of "butter" the County Analyst reports that he had 47 samples submitted to him for analysis, seven of which proved to be margarine.—During the past 12 months?—This is the quarterly report.—In the last quarter?—Yes; "Out of 47 samples analysed, seven proved to be margarine, containing from a trace up to 40 per cent. of real butter." Then he offers an opinion: "There seems to be a tendency to increase the percentage of butter fat in margarine, probably with a view of its more likely passing as the genuine article." Then, with respect to milk, the chief analyst reports that he has had 61 samples of milk, and I think he states that he had seven samples which induced him to institute a prosecution; and he says "One sample had been diluted to the extent of one.

third, whilst another sample, besides having been watered to the amount of 22 per cent., had also been deprived of at least 40 per cent. of its cream."

(To be continued.)

THE INFLUENCE OF ALUM ON DIGESTION.—It is generally believed that aluminium compounds, which have been used extensively in the adulteration of flour and in baking powders, both impede digestion and have an injurious effect on the digestive organs. In a recent series of experiments by Bigelow and Hamilton (Jour. of the Amer. Chem. Soc.) the influence of these compounds was studied, not only upon the digestive action of pepsin and hydrochloric acid, but also upon artificial digestion in the pancreatic juice. Alum interfered materially with the action of the gastric juice, but the pancreatic juice effected the digestion of the remaining portion of food, which should have been digested by the pepsin. The same was true of the digestion of matters containing aluminium hydroxide. The action of aluminium phosphate was quite different, however, for, notwithstanding the supposed insolubility of this compound, 10 or 12 per cent. of the albuminoids which were digestible in the presence of alum or aluminium hydroxide, appeared to be insoluble in the presence of an equivalent amount of the phosphate.

CURIOS POINT UNDER THE FOOD AND DRUGS ACT.—Alfred Honman, chemist, Upper-street, Islington, was summoned by Sanitary Inspector Ward, of the Islington Vestry, at Clerkenwell, on March 29, for selling diluted acetic acid, not of the nature and substance demanded by the purchaser. This was stated to be the first case of the kind. The mixture contained 11.7 per cent. of acid, which was 2.74 times the correct amount, and therefore too strong according to the Pharmacopœia. Dr. Harris, Medical Officer of Health, explained that it was essential that drugs should be of the exact strength laid down in the Pharmacopœia. Mr. Horace Smith said he felt in a difficulty. The intention of the Food and Drugs Act, in his opinion, was to prevent fraud, such as the dilution of milk or beer, but here the defendant was defrauding himself by selling something stronger than it need be. Dr. Harris said if drugs were sold over-strong it might do harm to a person, or even cause death. Mr. Smith said that would lead to a charge of manslaughter. He hardly thought, with regard to the Food and Drugs Act, that the Legislature had in mind cases of this kind. There seemed some need for a special provision. The defendant did not appear to have committed an offence under the Act. He would take time to consider the point and give judgment, which might lead to the point being decided by a higher Court.

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—Times.

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Food and Sanitation.

SATURDAY, APRIL 13TH, 1895.

THE SELECT COMMITTEE ON ADULTERATION.

THIS committee may now be said to have realised that it is powerless, not by its own fault or the absence of will on the part of its members, but on account of the unhappy terms of reference drawn up by Mr. Shaw-Lefevre, which have strangled its powers for real work. It spent last session over milk, and the portion of this already gone has been given to butter, and still the drivel goes on. The committee is tied to receive evidence to prove that which required no proof, and having admitted exhaustive statements about milk and butter it apparently cannot draw the line there, but must go through the wearisome process of receiving evidence about lard, ginger, pepper, oatmeal, drugs, etc., etc., a task which would employ it uselessly for as many years as any member of the unfortunate committee is likely to live. The procedure is the height of absurdity, and the committee would do well to seek for some means to disentangle itself from the maze into which Mr. Shaw Lefevre's incapacity has drawn it. An interim report that the committee is satis-

fied that adulteration largely exists, and desires no further evidence on that point would be a way out of the difficulty. It could then get to its real work of hearing the various suggestions for amending and strengthening the Acts, and receiving the evidence of the many representative bodies, city and town councils, etc., who have drafted amended Food and Drug Acts, or made recommendations based upon their practical experience of the defects of the Acts as they now exist. It will be a great pity if something of this kind is not done, and the committee be enabled to shortly make a report recommending alterations in the law and in the manner of enforcing the Acts.

MR. HORACE SMITH ON DRUGS.

THE decision we report in another column of Mr. Horace Smith is a curious illustration of the common attitude of magistrates towards drug adulteration. It is in his view, technically, no offence to compound medicines improperly if the compounder gives something stronger than is asked for. A more absurd view it would be hard to imagine, and it is a very dangerous one to encourage. Supposing Mr. Horace Smith's physician prescribed for him liquor arsenicalis or liquor strychnine, and the good-natured chemist compounded it improperly, as was done in the case in question, the magistrate would, if he survived the error, hold a very different opinion. He would realise that the object of the Act is to secure that each article sold shall be of exactly the nature, quality, and composition demanded by the purchaser. Under the Pharmacy Act, the vendor could be prosecuted for compounding a drug contrary to the formula of the British Pharmacopœia. Views, such as those of Mr. Horace Smith, about drug adulteration have nothing to recommend them, and tend to encourage a looseness in dispensing that is distinctly dangerous to the public.

MR. JAMES HUDSON'S BRIBERY ALLEGATIONS.

THE sanitary inspectors, many of whom have also to do duty in enforcing the Food and Drugs Acts, have lost no time in issuing a flat denial to the statements of Mr. James Hudson, of Hudson Brothers. The Liverpool Sanitary Inspectors' Association, at a meeting on Saturday last, adopted the following resolution:— "That the evidence was at variance with fact, and the

council trusted that the Select Committee would require the names and other evidence to be given in support of the statement." We shall not be at all surprised if Mr. James Hudson and the Butter Association, despite their "prave worts," shirk supplying the Select Committee with proof of their allegations, because, to speak plainly, we do not believe there is an atom of truth in the alleged bribery, or a tittle of justification for the serious charges so lightly made.

THE ONE HOUSE ONE DRAIN QUESTION.

THE following is a tabulated statement of the replies received from the borough engineer of sixteen representative towns in England and one in Wales to questions addressed to them by the conveners of the recent meeting of architects and others at Cardiff:—

Question 1. In the drainage of blocks of small houses having only outside w.c., do you insist on one house one drain?

Answer Yes: Carlisle, Manchester, Bristol, Taunton, Exeter (as far as possible), Scarborough, Llandudno, Plymouth, Bournemouth (except where it is necessary to pass under buildings).

Answer No: Lincoln, Nottingham, Derby, Portsmouth.

Not answered: Hastings.

Special Answers: Dover says, "Drains are, as a rule, connected, with a 9in. main drain at the backs of houses, and this connected with the sewer."

Norwich says, "No; we refuse to allow joint drains except under public places."

Exeter says a combined drain is allowed for a block of w.c.'s.

Question 2. If not (one house one drain), how many houses do you allow to be connected to the sewer, (a) by a 6in. pipe, (b) by a 9in. pipe?

(It will be seen that if Question 1 is answered "Yes," it is not necessary to answer this one.)

Not answered: Hastings.

Special answers: Lincoln says, "I prefer to restrict number, if possible, to about six (to a 6in. pipe); only use 9in. pipes for main sewers."

Nottingham says, "Bye-laws contain no restrictions."

Derby says, "Eight or nine to a 6in. pipe. If more than nine, then a 9in. pipe."

Exeter says, "That depends on the fall. There is no reason why a 6in. drain should not do for 300 houses. The greatest number on a 6in. sewer here is 44."

Portsmouth says, "Six houses to a 6in. pipe, twelve to a 9in. pipe (gradient considered)."

Bournemouth says, "No regulation."

Dover says, "Two cottages on a 6in. pipe, or a block of houses may be drained by a 9in. pipe, as shown in sketch, and the outfall drain being under a house and embedded in concrete. (It is impossible to re-produce the sketch to-day, but an inspection chamber is insisted upon at the bend in the drain, so that in case of stoppage the drain can be cleared without taking up the drain under house)."

Norwich says, "No particular rule. I have had no trouble in other towns where 40 houses drained through a 6in. pipe for the sewage and a 6in. pipe for the surface water."

Question 3. Do you insist on a disconnecting trap to each house drain near the connection to sewer, in addition to the syphon under w.c.?

Answer Yes: Carlisle (always insisted on), Manchester disconnecting traps, of course, provided), Nottingham, Derby, Bristol, Exeter, Portsmouth (with fresh air inlet), Bournemouth, Hastings, Scarborough, Llandudno (except in special instances), Norwich, Plymouth.

Answer No: Taunton.

Dover says, "No; but recommend them."

Lincoln says it is in the by-laws, but not enforced.

Special Answer: Exeter says, "An inspection chamber is insisted on in the most convenient position, and the outlet from that chamber is by the drain trap, which is in addition to the trap under the closet."

Question 4. Do you insist on all house drains being ventilated, whether there is an outside w.c. or not?

Answer Yes: Carlisle, Manchester, Lincoln, Derby, Bristol, Exeter, Portsmouth, Bournemouth, Hastings, Dover, Llandudno (to all new houses), Norwich, Plymouth.

Answer No: Nottingham, Taunton.

Special answers: Scarborough says, "Not at present, only where there is a w.c., but are asking for such power by

new by-laws not yet confirmed." (Probably "only where there is a w.c." means an inside w.c.)

Exeter says, "It is insisted that fresh air shall have free access to every drain."

The above answers relate to sixteen towns. In addition, the borough engineer of Birmingham, instead of filling up the form, very kindly sent a copy of the by-laws of that town, which contain most stringent regulations as to trapping and ventilating every drain, and for the provision of disconnecting chambers, as well as traps. It also provided that no drain shall pass under a building except where any mode of construction is impossible, and where any drain must pass under a building it must be covered with solid concrete all round.

It is apparent from the answers to Question 1 that the majority of the towns go in for one house one drain, but it has not, unfortunately, been ascertained whether they drain to the back under the yard or to the front under the house. From the Bournemouth answer to that question—"Yes, except where it is necessary to pass under buildings—" it would appear in that town, where possible, the drains are all carried to the back. Note that every town which has answered "Yes" to the first question has answered "Yes" to Questions 3 and 4 as to disconnection and ventilation, and, although one house one drain is highly desirable if the drain be properly trapped and ventilated, it will be a questionable improvement to the present Cardiff system if both traps and ventilation continue to be omitted from the workmen's house drains. We fail to see why the traps and ventilation are omitted in the case of outside and insisted upon in the case of inside w.c.'s.

AMMONIUM PERSULPHATE AS A DISINFECTANT.—This salt, which has the formula $(\text{NH}_4)_2\text{S}_2\text{O}_8$, in a 2 per cent. solution has been found by L. Wacker (Chem. Cent.) a powerful disinfectant, killing cholera germs in a few minutes. Like the potassium salt, it is made by electrolysis a solution of ammonium sulphate acidulated with dilute hydrochloric acid, and purifying the salt by cooling in ice a saturated solution. The salt has no appreciable effect upon the higher animals, and may, it is believed, be used as a preservative for meat and fish, and it can also find employment as a deodorant.

ADULTERATION PROSECUTIONS.

MILK.

A £10 MILK FINE.—At Clerkenwell, on April 2, Wm. Rennocks, farmer, of Shepshed, Leicestershire, was fined £10 with 2s. cost of summons, by Mr. Bros. for consigning milk adulterated to the extent of 8 per cent. of added water.—On the 4th of March an inspector of the St. Pancras Vestry took a sample from a churn sent by the defendant to the "Callow Park Milk Company," London, at the Midland Railway terminus.—Previous convictions were proved. The defendant said the cows were fed on frozen turnips.—Mr. Bros. remarked that frozen turnips were not proper food for milk cows.

CHEAP MILK.—At the South Western Police-court on April 3, Arthur Gardiner, a dairyman, carrying on business at Glenburnie-road, Tooting, was summoned by the Wandsworth District Board of Works for selling milk from which 70 per cent. of the natural cream had been abstracted.—Samuel Hallen Smith, the inspector, said that he asked for a pennyworth of new milk, and received what proved to be skimmed milk.—Mr. Hanne, who represented the defendant, said that the inspector asked for milk without mentioning "new," and before he paid for it he was told that it was cheap milk. He (Mr. Hanne) contended that if the purchaser was informed of the nature of the article he was about to purchase, the vendor could not be convicted.—Mrs. Gardiner, the wife of the defendant, was called, and stated that she reminded the inspector that he was purchasing cheap milk.—Mr. Denman dismissed the summons, observing that it was for the complainant to make out his case.

SPIRITS.

At Grantham, William Northing, innkeeper, of Welby, was summoned for selling gin which was not of the nature, substance

and quality demanded, on the 5th ult. Police-constable Poole spoke to purchasing a pint of gin from the defendant's wife at the Waggon and Horses Inn, and Superintendent Taylor produced the certificate from the public analyst, which showed that the spirit was adulterated to the extent of 41.62 per cent., being 6.62 per cent. below the standard. The magistrates imposed a fine of 40s. and costs, but did not endorse the license.

At Leicester, William Lowe, Belgrave-gate, was charged with selling rum diluted 9.5 degrees below the legal limit of 25 degrees under proof, on February 21. Mr. James Bell, Town Clerk, prosecuted. Mr. Williams represented defendant, who pleaded guilty. The Town Clerk stated that Inspector Bent purchased a pint of rum from a barmaid at defendant's house, and an analysis by Dr. Priestley gave the result mentioned in the charge. The sum of 2s. was paid for the rum. Mr. Williams stated that although the defendant pleaded guilty there were certain reasons why no penalty should be inflicted. During the 27 years which defendant had been in his present house there was no complaint against him. For the purpose of ascertaining the strength of the spirits defendant used a hydrometer, according to which the rum from which the sample was taken for the inspector was shown to be several degrees above the statutory standard. So positive was defendant as to the reliability of his hydrometer, that he invited an Inland Revenue officer to test it. This was done, and it was found that the instrument was defective. Taking into account the facts of the case the Bench inflicted a fine of 20s.

At Thornaby, Edward Davies, landlord of the Erimus Hotel, was charged with an infraction of the Food and Drugs Act by selling adulterated whisky. Mr. W. J. Watson, Town Clerk, prosecuted on behalf of the Corporation. Matthew Scott, inspector under the Act, said he called at the hotel on the 23rd February and was supplied by Mrs. Davies with a pint of brandy, a pint of gin, and a pint of whisky. On being sent for analysis, the brandy and gin were found to be genuine, but the whisky was certified to be 3.25 below the strength permitted by law. Defendant was fined 10s. and costs.

At Coventry, on April 1, Horace Bower, late landlord of the Board, Crosscheaping, but now living at Byker, Newcastle-on-Tyne, was summoned for selling adulterated rum. The Town Clerk prosecuted, and Mr. Masser was for the defendant, who did not appear.—Inspector Clark proved purchasing the spirit from the defendant and that the analyst's certificate showed dilution 9 per cent. above that allowed by law.—Mr. Masser said he could not resist a conviction. The defendant was in the house but a few months and took over a lot of spirits from the previous tenant. He found these were not satisfactory, and had generally sold from his own fresh stock, but as he was leaving the house he cleared out the old lot. The case, he submitted, was not a serious one.—The Bench imposed a fine of £2 and 25s. costs.—Eliza Adderton, Rose Inn, Well-street, was summoned for selling adulterated whisky.—The Town Clerk stated that this was a similar case, but the adulteration was 33 per cent. beyond that allowable.—Defendant pleaded that she had been ill and out of business for five weeks, and though she had been in a public-house for 20 years she had never before had complaint.—Mr. Beard said the whisky was served by the niece, Miss Kay.—The fine here was also £2, and the expenses 23s.

BUTTER.

BEFORE the Potteries Stipendiary (Mr. Harold Wright) at Longton, on April 3rd, John Boswell Leeke, of the Canton Tea Stores, Stafford-street, was charged under the Food and Drugs Act with selling as butter an article which was not of the nature, substance, and quality demanded. He was further charged under the Margarine Act with retailing a quantity of margarine without wrapping it in a paper labelled "margarine," and with exposing for sale a quantity of margarine which was not labelled in accordance with the requirements of the Act. Arthur Hacksley, manager to Mr. Leeke, was charged with similar offences.—Mr. E. W. H. Knight, inspector under the Acts named, prosecuted; and Mr. Boddam (instructed by Mr. E. A. Paine) appeared for Leeke, and Mr. Ramsdale for Hacksley.—For the prosecution it was stated that on the 9th March a man named Thomas Bagnall went to Mr. Leeke's shop and asked for half a pound of 101. butter. Thomas Ridge, an assistant in the shop, weighed the article and made it up in a package, which was served to Bagnall by the defendant Hacksley. The article thus supplied was submitted to the county analyst, who certified that it was margarine, containing only 18 per cent. of pure butter. The bulk from which the article was supplied to Bagnall was not labelled "margarine" as required by the Act, and it was not wrapped in paper bearing the word "margarine" as it ought to have been.—For the defence it was stated that Mr. Leeke had taken all the precautions he could to ensure the requirements of these Acts being carried out. The margarine had been supplied in consequence of a mistake arising from the carelessness of Hacksley and the assistant. On behalf of Hacksley Mr. Ramsdale urged that he had acted without any guilty knowledge.—The defendant Leeke, it was stated, had been previously convicted under the Weights and Measures Act, the Food and Drugs Act, and the Margarine Act.—The Stipendiary said he had no doubt that a gross fraud had been perpetrated on the public. He fined Leeke £20 and £1 6s. 6d. costs, and Hacksley £5 and £1 6s. 6d. costs.

DISEASED MEAT.

At Derby, on April 2, George Spencer, farmer, Kirk Langley, was summoned for taking a diseased calf into the Derby Cattle Market on the 26th of March. Mr. Clifford defended, pleading not guilty. For the prosecution it was stated that on the date named the defendant placed a bull calf in Messrs. Cumberland's pens for sale, but the auctioneers refused to sell it. Mr. Walker, market superintendent, said that the animal was lying down and appeared to be dying. It was blind in both eyes and unable to stand. Mr. Wilkinson, sanitary inspector, and his assistant, Mr. Turner, removed it. Mr. Clifford, for the defence, said, that when the animal left defendant's farm it was all right, but was afterwards taken suddenly ill, being attacked with inflammation. Evidence in support of his statement was given by several farmers. A fine of £2 and costs was imposed, the Bench considering the case a very bad one. Defendant had been three times previously convicted for exposing bad meat for sale.

At Southampton, on April 5, James Stainer, butcher, of Canal-walk, was summoned in respect of a quantity of beef, which it was alleged was deposited in his slaughter-house in Union-street on the 22nd day of March, for the purpose of sale, and intended for the food of man.—The Town Clerk (Mr. G. B. Nalder), appeared for the prosecution, and Mr. Lamport defended.—Mr. Nalder said the defendant was a respectable butcher, who purchased cattle in various parts of the country, and killed and dressed them for retail dealers. On Friday, the 22nd ult., Inspector Fowle, in the course of his duty, visited defendant's slaughter house, where he discovered three large pieces of rib beef. He examined them and found that putrefaction had set in. The meat was green and livid, and smelled offensively. Mr. Stainer was sent for, as well as Dr. Harris, and the meat was seized. Inspector Fowle gave supplementary evidence, and other witnesses, including Dr. Harris, having been called, Mr. Lamport, for the defence, contended that the meat was not unfit for the food of man. It might have been "gamey," but was by no means unfit to eat. His client complained that he had been allowed no time to gain an independent opinion on the matter. Dr. Welch was called to prove that he had examined a piece of meat taken from the same carcass. The meat brought to him and which was produced in Court, was fit for food. The slaughterman and other witnesses were called, who stated that the meat was wholesome. One witness had eaten some of the same carcass the day before the seizure, and also on the day that it was destroyed.—The evidence being concluded, the magistrates considered the case proved, and imposed a penalty of £2 on each of the three pieces seized, together with the costs.

THE OVER-STRONG DRUG CASE.

At Clerkeawell, on April 5, Mr. Alfred Honman, chemist, of Upper-street, Islington, appeared in answer to the adjourned summons taken out by Sanitary-Inspector Ward, of the Islington Vestry, for selling diluted acetic acid not of the nature and substance demanded by the purchaser. The facts have been reported. It will be remembered that the drug was too strong according to the Pharmacopœia, and that the magistrate took time to consider the point of law involved, the defendant not appearing to the magistrate at the time to have committed an offence under the Food and Drugs Act, he not having defrauded anyone. Mr. Horace Smith said this was a summons under Section 7 of the Food and Drugs Act. The purchaser had demanded a compound drug called "diluted acetic acid." He obtained acetic acid which was partially diluted, but not so diluted as to be "diluted acetic acid," as described in the Pharmacopœia. This compound drug was, therefore, "not composed of ingredients in accordance with the demand of the purchaser." He received a stronger and more expensive dilution than he demanded. If I did not think myself bound by authority, I should say that the Food and Drugs Act was directed against adulteration, and not against such a mistake as the present. But in a case under Section 6 (Knight v. Bowers, 14 Q. B. D., 845), it was held that the section applied to sales of unadulterated articles, which, although pure, were wholly different from the article demanded by the purchaser. In that case saffron was sold instead of saffron. It is not stated whether saffron is cheaper or dearer than saffron, so that it would appear that it is immaterial whether the article sold is better or worse, cheaper or dearer, than that demanded. It was said in the judgment of Mr. Justice Mathew that it was a "wholly different article." I am not sure whether the word "wholly" is intended to be material. In the present case, at all events, the article is different from that demanded. It is worth noting that of the two judges Mr. Justice Smith was very doubtful upon the point. Although these two learned judges were dealing with a case under Section 6, I think their judgment applies equally to this case under Sec. 7, and I am bound to convict the defendant. There is no suggestion in this case either of fraud or even gross carelessness; and, so far as I can see, it would be well if tradesmen were to emulate the defendant's conduct, and give their customers, if possible, a better article than is demanded or paid for. I therefore inflict the nominal fine of 1s. and 2s. costs.

CINNAMON.

At Spalding, Thomas Wright Lane, of Holbeach, was summoned for selling two ounces of ground cinnamon not of the nature, quality, and substance required, and to the prejudice of purchasers

at Holbeach on February 28.—Defendant denied the charge.—Superintendent Osborn stated that on February 28 he visited defendant's shop at Holbeach and asked him for two ounces of ground cinnamon. He was served by an assistant. Having paid 8d. for it he served a notice on defendant to the effect that the cinnamon would be subjected to analysis; he divided the stuff into three portions, one of which he sent to Mr. C. H. Southwell, county analyst, at Boston. The analysis stated that the substance was not cinnamon at all, but powdered cassia. Cinnamon was worth at least twice as much as cassia, which was not so fine a spice, nor so valuable as a medicine.—Defendant placed before the Bench an analysis he had received from one of the analysts of the Royal Agricultural Society, which expressed a contrary opinion to that of the county analyst.—Mr. Lane said that his analyst was one of the highest authorities in England.—Ald. Mills (who was in the chair during the hearing of the case) remarked that the other opinion was from the county analyst, of whom the county had a high opinion.—Ultimately a fine of 1s. and costs was imposed.

SPENT GINGER.

At Ormskirk, on April 5. Henry Sherrington, grocer, Burscough-bridge, pleaded guilty to selling to Police-sergeant Carson a 4oz canister of ground ginger, which on analysis was found to contain 10 per cent. of spent ginger. Superintendent Jervis, in opening for the prosecution, said there was no imputation against the defendant that he knew, or could have known, of the adulteration. Mr. S. Brighthouse, addressing the bench in mitigation of penalty, said he was glad Mr Jervis had opened the case so fairly. Defendant bought the ginger sealed in the canisters from a Preston firm, which had since dissolved partnership, and who guaranteed the purity of all the goods they sold. The firm in question also obtained the ginger made up in canisters and ready labelled, "pure ginger," from a London firm of high repute. This was the first case of the kind in the district, and there was no standard of commercial ginger, as would be shown when some firm was summoned which could afford to fight out a case. The Bench said they took into consideration the circumstances in imposing a mitigated penalty of 10s. and costs.

WILLIAM WARDE, grocer, Market-place, Pontefract, was charged on March 30 with selling adulterated ginger.—Mr. Burton, Wakefield, represented the County Council, and Mr. Kaberry appeared for defendant.—The case had been adjourned twice in order that Mr. Warde could secure evidence in defence.—Mr. Bruton, in opening the case, said that a sample had been sent by defendant to Somerset House, and the certificate from there was to the same effect as that of Mr. Allen, the County Analyst.—Mr. W. H. Wilson, the Inspector, said that on the 10th January he visited defendant's premises, and was supplied with four ounces of ground ginger, which was divided into three parts. The analyst's certificate showed that it contained 40 per cent. of exhausted ginger. On that certificate he had taken proceedings.—By Mr. Kaberry: "Guaranteed pure" was on the canister which he was supplied from, but he would not consider that sufficient warranty.—In defence, Mr. Kaberry said that he need hardly remind the Bench that Mr. Warde was a well-known, respected man, and had followed an equally respected tradesman—Mr. Hartley—and that in their combined experience this was the first time they had been summoned. He did not think this came under the section, as there had been no adulteration, but, owing to the canister standing so long, the ginger had become exhausted. The purchaser got the article he asked for, although there had been no natural exhaustion. It was not a case of abstraction or adding to, but the ginger was not of the nature and quality asked for on account of its having been in the shop so long. He submitted, also, that defendant had sufficient warranty in the label on the canister, which said "Guaranteed Pure Ground Ginger Warranted."—Mr. Bentley (Carter, Bentley, and Atkinson) said that he appeared on behalf of the firm who supplied the ginger, and he should object to the warranty, as they had supplied no written warranty.—Mr. Kaberry objected to Mr. Bentley, as he had no *locus standi* in the case, and the Bench upheld the objection.—Continuing, Mr. Kaberry said that the ginger had been purchased from Messrs. W. and C. Pantin, Upper Thames-street, London, a well-known firm. He considered that the case was but trivial, and ought never to have been brought before the Court. The Inspector obtained what he asked for, as he did not request any particular quality.—The Bench, on their return into Court, said that an offence had been committed, but the defendant was ignorant that he was not supplying pure goods, and, therefore, the ends of justice would be met by his paying costs.

WHAT IS A WARRANTY?

In the Glasgow Sheriff Court, on April 4, before Sheriff Balfour, William Wyper, 246, Calder-street, Govanhill, was charged with having on 13th March sold a pennyworth of sweet milk which was deficient to the extent of 28 per cent. of its natural fat.

Mr Joseph Shaughnessy appeared for defendant and tendered a plea of not guilty, and produced a document from the farmer who supplied the milk, which was to the effect:—"I guarantee to supply William Wyper with pure milk." He contended that the production of this warranty ought to satisfy Mr. Lindsay, who prosecuted, and trusted that he would now withdraw the case.

Mr. Lindsay remarked he had taken the opinion of the Public Health Committee, and they had agreed that the case ought to come before the Court?

The Sheriff said that he was of the opinion that the guarantee was bad. It was not specific enough, and was not good enough for the authorities to go on if they decided to summon the farmer.

Mr. Shaughnessy said that if that was his lordship's opinion his client would plead guilty, for he now saw that he had been relying on a broken reed. He had been four and a-half years in business, and had a high reputation as a milk dealer, and intended taking proceedings against the farmer.

The Sheriff said he could quite understand that the purveyor of the milk might have thought the guarantee to be valid. Though not exculpating him legally, it showed the *bona-fides* of the man, and he would make the penalty the nominal one of 20s.

At the same Court, George Dawson, 64A, Soho-street, pleaded guilty to having sold a pennyworth of sweet milk on 13th March which was deficient in natural fat to the extent of 13 per cent. It was explained that the milk was supplied by the farmer Mr. Wyper got his milk from, and that it had been sold just as it had been received. He was fined 20s.

WILLIAM RODEN, 31 David-street, was fined 20s. for having on the same date sold a pennyworth of sweet milk deficient in natural fat to the extent of 19 per cent. The milk was said to have been served out just as it was received.

BEESWAX.

At Skipton Petty Sessions, Benjamin Marshall, drug dealer, Sutton, was summoned by Mr. A. Randerson, Inspector of Foods and Drugs, for selling adulterated beeswax.—The sample examined by the analyst was certified to contain 25 per cent. of paraffin wax.—Mr. Randerson and Dr. Whitelegg corroborated.—In reply to Mr. Robinson, witness said the medicinal quality of beeswax was that it gave consistency to other drugs with which it was used.—For the defence Mr. Robinson contended that the wax was not mixed with paraffin wax for the purpose of swindling anybody. When mixed with paraffin wax it was sold not as a drug but for laundry and other similar purposes, and for making wax flowers. He contended that beeswax was not a drug, and quoted a recent decision of the magistrates at Pontefract. The only property beeswax possessed was that of stiffening other drugs.—Defendant was also summoned for selling yellow wax certified to contain 40 per cent. of paraffin wax.—The Bench decided to fine him 10s. and costs in each case.—In reply to Mr. Robinson, the Chairman said he considered the wax a drug.

ADULTERATION IN WALES.

MR. HOWELL EVANS, the chief constable of Aberystwyth, was thanked by the Mayor and magistrates, on April 3, for the vigilance displayed in suppressing adulteration. He prosecuted D. Jenkins, Aberllolyn, Llanychainn, milk-seller, charged with having sold milk adulterated with water.—The Chief Constable stated that on Sunday, March 10, he bought a pint of milk from the defendant, informing him at the time it was for analysis. Having divided the milk into three parts he sent one of the samples to Dr. Snape, the public analyst. On the 18th of March he received a certificate showing that the milk was adulterated with 19 per cent. of added water.—The defendant said he had bought the milk from another person, and that he had stated as much to the Chief Constable on the day in question.—Rowland Rowland, Cambrian-place, Aberystwyth, milk-seller, was charged with a similar offence.—The Chief Constable deposed to having bought a pint of milk from the defendant on Sunday, March 10, and having divided it into parts in the usual manner, forwarded a sample to the Public Analyst. On the 17th March he received a certificate (produced) showing that the milk was adulterated with 17 per cent. of added water.—The defendant said that on the day in question he did not receive as much milk as was customary, owing to something being the matter with one of the cows. He never put water into the milk himself, and if he had, he certainly would not have sold it to the "Chief." (Laughter.)—The Chairman, in giving the decision, said that each of the defendants would be fined £1 and costs, and would have to pay the analyst's fee, which, he believed, would make the fine about £2 each. They should consider themselves lucky in getting off so lightly. In his mind, the nature of an offence of that description was little less than highway robbery.—At Talybont petty sessions, on the 4th inst., before T. T. Morgan, Esq., and Griffith Rowland, Esq., Elizabeth Benjamin, of Bow-street, was charged by Chief Constable Howell Evans, Aberystwyth, with selling milk adulterated with 5 per cent. of added water.—Fined 1s., including costs.

METHOD OF PRODUCING CONDENSED MILK.

H. E. HANSEN, St. Paul, has secured a patent on a process for the condensation of milk. The milk is deprived of its cream by a separator, and the cream is kept cold. The skimmed milk is heated to 60°, and the casein is coagulated by addition of acid. The whey is removed by opening a hole in the vessel. After rising the curd with cold water, it is pressed gently in a cheese-press and passed through a sieve of galvanized iron wire. It is then put back into the cheese vessel and mixed with a weak solution of potash. After the lapse of about 12 hours it is gently heated, with constant stirring, until it has turned to a thick fluid, to which is then gradually added the cream. The mixture forms the condensed milk, which is then cooled and put into tins. After hermetically closing, the tins are placed in an iron basket, which is placed in an iron vessel or iron boiler, provided with double wells and con-

taking a little water, whereupon the whole is closed with a tight iron lid provided with a thermometer and a tap. The tins are now heated to a temperature of 118°-124° for about an hour, when they are at once cooled. The claims of the inventor are: 1. The preparation of condensed milk without addition of sugar. 2. The thorough sterilization of the same by the employment of a high temperature, without deterioration.

"THE GLOBE" ON SPENT GINGER.

"In some cases of food adulteration, the presumption is so strong against the manufacturer as to almost efface the retailer's responsibility. The law, however, visits its anger on the latter, and he can only obtain redress by the costly expedient of suing the manufacturer or wholesale dealer from whom he obtained the adulterated article. Down at Morecambe there have been eleven successive convictions of local grocers quite recently for selling ground ginger largely mixed with "spent ginger." That is the term applied in the trade to ginger from which all pungency and aromatic quality have been extracted, leaving the residuum nothing better than flavourless pulp. As the proportion of this stuff in the mixture sometimes runs to 40, and even 50 per cent., the manufacturer must make a very tidy profit. Practically, he obtains the extract, a valuable commodity, for the mere cost of extraction. Clearly, therefore, in this instance, punishment should fall upon the real authors of the fraud. The retailers could not make the extract without purchasing the necessary plant, nor would it pay unless carried out systematically on a large scale. Presumably, therefore, these unfortunate traders have clean hands, and they must feel it very hard to be publicly stigmatised as cheats. Hard, too, is it on honest manufacturers to be undersold by the manipulators of 'spent ginger.' It is believed at Morecambe that the whole of the incriminated samples came originally from one source of supply. If that be the case, it should not be difficult for the trade to run this fox to earth; no doubt the 11 victims would be ready enough to sue for damages if the honest manufacturers gave them financial backing."

SELECT COMMITTEE ON ADULTERATION. CONTINUATION OF MR. SMITH'S EVIDENCE.

XLI.

(Continued from page 108.)

Then he gives an opinion on the question of separated milk: "Creaming or mixing with 'skim' milk is the more frequent direction that tampering with this article now takes, and seeing that analysts have to take a very low standard for this consideration, I have little doubt we pass over a very large number of somewhat skimmed samples."—What is the standard there?—I have a letter from the chief analyst from which I gather that we really have no standard, that each analyst is a law unto himself, but our analyst lays down the general idea that 3 per cent. of butter fat is the least that we can ask for.—And what of solids?—He does not say.—You have nothing more to say on that point then?—I have, with respect to my own practice of milk, but not on the practice of the County Council.—You have already spoken about margarine; is there unanimity of opinion between the county analyst and the inspectors as to colouring margarine, so as to imitate butter?—Perfect unanimity.—Do they ask that it may be made illegal to mix butter with margarine?—They do; that it should not be coloured to imitate butter.—Can you speak as to retail traders being frequently deceived by the wholesale dealers and manufacturers in regard to purchases made of margarine for butter?—We have had several prosecutions, like the one I have already quoted, before the stipendiary magistrate at Wolverhampton, pretty much on the same lines, and we have been successful in several cases in getting at the wholesale dealer.—And what sort of penalties have been imposed?—The magistrates in my county are increasing the penalties. If they can get hold of the wholesale dealer they impose a very heavy penalty.—What do you call a heavy penalty?—£20.—That has been imposed, has it?—Yes.—Do you think that the effect of such a fine is sufficiently deterrent, without going further?—No, because the profits on the manufacture of margarine are so great that £20 is a small penalty to a large wholesale manufacturer.—What would you put the fine at in order to have a deterrent effect?—It is very hard to say; it depends upon the business of the man who is fined.—Would you imprison him?—I would after a second conviction. I do not think I would after a first conviction.—Can you give any illustration of prosecutions for selling as butter a mixture containing between 80 and 90 per cent. of foreign fat?—Yes, I can; in the neighbouring county of Leicestershire, not in my own district with respect to what I am now saying; but I can in my own district also. In the neighbouring county of Leicestershire a certain shopkeeper was summoned for selling a mixture as pure butter, and he fell back upon the warranty, because he had a written contract with a certain person living in the county for so many pounds of butter per week. The analyst's certificate gave from 80 to 90 per cent. of foreign fat, and the local magistrates fined, but fined quite nominally, in as much as the retail dealer convinced them that he had bought this so-called butter un-

wittingly, and he gave the name of the person from whom he had bought it. On inquiry it was found that the person who had made the contract to supply the shopkeeper with so much butter did not keep a cow at all.—What was the result; was the shopkeeper fined?—The shopkeeper was fined nominally, but the man who supplied him went away, and they could not get at him.—Mr. Yerburgh: Why could they not get at the original offender?—He was gone, he neither kept cows nor had he a manufactory; he had handled the material with which he had dealt.—He was a middle man, was he?—He was an adventurer, who had bought his stuff from nobody knows where, and mixed it up and gone away.—Sir Mark Stewart: Containing 80 or 90 per cent. of foreign fat?—Yes. I can give you another case at Leek, which has been dealt with in my own county under the prosecution of our own inspector, Mr. Knight. A certain farmer in the neighbourhood of Leek kept three cows; he and his daughter attended the local markets at Leek and in the neighbourhood, with their baskets, and sold butter in the public markets to a very considerable extent. Suspicion was aroused, and a sample was taken in the ordinary market, not in the shop, and it was found on analysis that there was a very large proportion of foreign fat in this butter sold out of the baskets. On prosecuting the inquiry it was found that this farmer bought a hundredweight of margarine per week, took it home, and mixed it up without the help of any apparatus.—And sold the butter as home made butter?—Sold it all as home made butter.—What was the result of that prosecution?—The result of that prosecution was fines to the extent of £38.—On the farmer?—The farmer and his daughter were fined to the extent of £38.—Was that a substantial fine for people in their position?—Yes; I think that stamped it out; locally, I mean.—Sir Mark Stewart: Is it your opinion, then, that no amount of inspection can do much good so long as a colourable imitation of butter is permitted as a butter substitute?—That is my opinion. That was a case in point.—Mr. Whiteley: Was the margarine that the farmer bought coloured or not?—That I do not know, but I should say that it was, or else it could not have been sold as butter.—Supposing you were to mix colourless margarine with higher coloured butter, the average would be practically the colour of ordinary butter, would it not?—That might be so.—So that really your prohibition of the colouring of margarine would be non-effective in that case?—I take it that it would not be so. In this case there was from 80 to 90 per cent. of foreign fat. If the man had been dealing with cream of Channel Island cows, he would have had a very highly coloured butter, but quite insufficient to have coloured the whole mass of uncoloured margarine, with 80 per cent. of foreign fat.—Sir Mark Stewart: Could the farmer have blended the two mixtures of pure butter and coloured margarine without machinery?—He did it; I do not know how he did it.—Do you consider that there should be any fixed standard for milk?—I do.—What standard would you propose?—I would put in evidence my own contract with the London firm here, which is the same as that of the last witness, and I would say also that although I have been not furnished with the analysis of the milk by the firm who buy my milk, my own analysis taken at my own expense shows that I have no difficulty in supplying milk up to the standard which I contract to do. My contract with the London firm here is that "milk yielding less than 3½ per cent. of fat and 8½ per cent. of solids not fat, is to be regarded as not complying with the term "perfectly pure." That is 3.25 per cent. of fat and 8.75 per cent. of solids, not fat?—Yes, I agree to supply it perfectly pure.—Would you propose to make the standard as high as 3.25 per cent. as the fixed standard for the whole country?—No; I dare not. I am not prepared to go further than 3 per cent., with an appeal to the cows, to the whole herd of cows, not to a single cow. I may say that I regret that I have not applied to this firm for the analysis of my milk during the last year, because I took great interest in the influence of food on milk. They told me personally that they could not do it, that it was not their practice; but I gathered that the last witness had prevailed upon his firm to give him the analysis of his milk when it went in. But there has never been any complaint of my milk, and I have no doubt that my milk all through has been always above the minimum of my contract. The whole quantity of milk is put together, and, for my own satisfaction, I have a sample taken from the whole bulk of one milking—always the morning's milking—with respect to the analysis that I am going to give.—That is not the milk of the night previous, but the milk that is milked in the morning. What do you call the morning milk?—The analyses that I am just going to put in were taken from samples of the mornings' yield, that is to say, of the whole produce of 50 cows, after being milked at one morning's milking. On the 30th of April last I brought up a sample with me to London (entirely for my own satisfaction), and I left it with an analyst in Chancery-lane. You will remember the first flush of grass in May; and I agree with the last witness, that that is when we get the lowest quality of fat in milk. The analyst gives me here 3.4 per cent. of fat and 10.1 per cent. of solids. I was feeding my cows very richly at that time.—Mr. Channing: Is that 10.1 per cent. of total solids?—No, solids, not fat; making a total of 13.5 per cent. Six weeks afterwards I was coming up to the Farmers' Club to hear a paper by Dr. Voelcker on feeding experiments in Woburn, and, for the purpose of the Farmers' Club discussion, I thought I would get the evidence of my own milk as yielded that particular morning, the 5th of June last. I may explain that some days previously to

that date I had purposely ceased giving my cows any cake, and was only giving them bran and maize meal, and rice meal—foods not very rich in fat. I brought it to the same analyst, and on June the 5th he gives me instead of 13·5 per cent. of total solids 13·35 per cent., that is to say, 13½, as near as may be, instead of 13¾; and of solids, not fat, he gives me 10·05 per cent., and of fat 3·30 per cent., making a total very nearly approaching the analysis of six weeks before, but instead of showing 3·40 per cent. of fat, I get 3·30 per cent. of fat.—Sir Mark Stewart: What were you feeding your cows on at the time?—I entirely attribute it to the difference in the food that was given for the time being. Whereas at the end of April I was using both linseed cake and decorticated cotton cake, in addition to maize meal and rice meal, on the 5th of June I was only using meals without the cake.—Mr. Channing: Can you give the quantities per cow of cake used in April?—Only approximately; I could not give it better. In April, I would say, that I was using 2 lbs. of the two cakes, and about 3 lbs. of cake and middlings, what you call white middlings.—Sir Mark Stewart: What cows are yours?—Dairy shorthorns; not pedigreed.—Have you anything further to say on that point?—Excepting that although I agree to furnish milk giving, as I put it here, 3·25 per cent. of fat, and 8·75 per cent. of solids, not fat, I think it would be dangerous to ask for a standard as high as that.—Have you any suggestion to make on the question of skimmed milk; do you think that skimmed milk ought to be labelled or marked in any particular way?—I do. I may say that I have formed a very strong opinion in consequence of a decision of, I think, the late Lord Chief Justice, who held that a small label on a tin in which condensed milk was sold, with the words “skimmed” so small that the buyer did not notice it until after he had got away, was a sufficient protection to the seller; that is to say, that the epithet “skimmed” was so placed upon the condensed milk tin that it was overlooked, while the word “milk” was read easily. I would ask for the word “skimmed” to be larger than the word “milk” in all cases.—Where ought the onus of proof that the purchaser was fully informed of what he was buying before payment to be: on whose shoulders ought it to be placed?—It should be put upon the defendant.—That is to say, that the onus of proof that the purchaser was fully informed of what he was buying before payment should be thrown upon the defendant?—That is to say, supposing that a person is prosecuted for selling an article under false pretences, he must prove that any label that he had was pointed out to the purchaser before payment was made for the article purchased; the onus of proof must be put upon him.—Mr. Whiteley: But if the label has distinctly stated upon it the quality of the article, would you still put the onus of proof upon the vendor?—In the case to which I alluded, the defendant did not prove that the small word “skimmed” was pointed out to the purchaser before payment.—That was the case before the late Lord Chief Justice?—Yes.—Sir Mark Stewart: What was the case called?—The Condensed Milk case.—Mr. Whiteley: This (*producing a label*) is the identical label. I venture to say that you can almost see from where you sit that it has “skimmed milk” upon it!—Is that the identical label in the case?—So I am informed.—May I see it for one moment. (*The label was handed to the Witness*). My recollection of the case was that the purchaser swore that the word “skimmed” was not noticed by him when he paid for the tin of condensed milk.—But supposing that it was noticeable and sufficiently large, then the onus of proof would not fall upon the vendor, would it?—No, I think that would be sufficient proof if the buyer could not buy the article without seeing it.

THE late Lord Chief Justice said “I do not follow the finding of the magistrate, because, here, as plain as a pikestaff, is written “skimmed milk.” That is the ruling?—That is so.—Mr. Channing: But it is the fact that the letters of the word “skimmed” are exceedingly small and thin, is it not?—Very thin. I was a long while before I found it.—Mr. Whiteley: Yet, in the opinion of the late Lord Chief Justice, it was as plain as a pikestaff?—*De mortuis nil nisi bonum*. I should say that it is not so.—Sir Mark Stewart: Would you alter the position of the word “skimmed” on that label to where the calf is?—Neither of those words are prominent to the purchaser. The thing that is prominent is the milk on which the calf is fed; that is quite sufficient, I think, to deceive a customer.—Does the county analyst of Staffordshire make a strong point that there ought to be a fixed standard for milk?—The county analyst writes to me to the effect that he is very strongly in favour of a fixed standard, and he goes on to express the view that he thinks all analysts are of that opinion, which I did not know. He is of the same opinion as myself, that no honest supplier of milk could take any harm if the standard was fixed at 3 per cent.—Would you be inclined to favour the adoption of greater publicity by publishing the particulars of the analyses in the papers?—I would. It appears to me that the practice now in the police-courts is not to give sufficient prominence to the standard upon which the particular analyst goes, because each analyst may choose his own standard. In my judgment, seeing that there is so much adulteration, I ask for each analyst who is called in the prosecution to give the standard upon which he himself works; I ask also that he shall give the result of the analysis of the incriminated milk.—And you ask that they should be published, so that the public should know what they are?—Yes. I went so far as to write to the Home Secretary and the President of the Local Government Board about it, but they did not see the necessity for doing it.—Do you consider that there ought to be a

fixed standard for water in butter?—I have not a very strong opinion about that; but I wish to call attention to the fact that a prosecution in the neighbouring county to my own, the other day, was successful. The defendant pleaded that in Manchester the magistrates did not convict; but in this case at Ilkeston the magistrates did not accept the Manchester decision as effective, and they convicted, because there was 21 per cent. of water in the butter.—What percentage do you consider that there ought to be?—I have not sufficient knowledge to say; I really do not know. I may say that both with respect to fixing a standard for milk, and with respect to fixing a standard for butter, I do not think that at present we have arrived at anything further than the desirability of such a standard being fixed, and that at present we must be satisfied with further inquiry with respect to fixing what those particular standards may be.—But still you have a clear idea of what you think it ought to be for milk; not below 3 per cent.?—Yes; but I must say that a great quantity of evidence has come to me to tell me that 3 per cent. is a very low standard.—Your own milk being 3·25 per cent.?—It has never been so low as that; my contract being never to supply under that standard; my milk has never been so low as that by a good deal, so far as I know.—Just one more question in regard to what you have already said about the prevention of fraud. Your principal contention is that by inspection all bad food ought to be stopped at the port of delivery?—Yes; I might add to that that it is a common conception that the Margarine Act provides for inspection at the ports of entry. I find, according to my own reading of the Act, that it only provides for the inspection of margarine; it does not provide at all for the inspection of butter.—No, it does not?—So that it is absolutely useless, so long as the consignment is made under the name of butter, and practically it is not obligatory with respect to margarine.—So that in any remodelling of that Act it ought to be more comprehensive, so as to include butter, and in fact all substances that could come under food adulteration?—That is so.—Mr. Channing: You say that a minimum of 3 per cent. is what you would suggest as the standard of fat?—Yes.—Do you suggest also a standard of solids not fat?—I have not sufficient knowledge of the subject to be able to give an opinion worth anything in chemistry, but I am struck with the fact that my own solids are very much higher than those which I have contracted to supply.—Is it the case that some very rich milks, where the fat is rather in excess of 3 or 4, or perhaps even 5 per cent., will have non-fatty solids below a standard, say, of 8·5 per cent., supposing that to be taken as has been represented to us by other witnesses?—I may allude to a case of prosecution which took place at Clerkenwell here last year during the drought. This knowledge came to me both by reports in the newspapers, and by information furnished to me afterwards by the analysts. A certain farmer was prosecuted for having added water to his milk. He denied that he had done so, and appealed to the cow, and had a chemist employed to make another analysis. The analysis of the friendly chemist agreed with the analysis of the prosecuting chemist, which said that water was added. The farmer said that he never adulterated the milk, and asked the friendly analyst to go down and see all his cows milked, and all the milk mixed together, and then to take a sample himself from the mixed milk of the cows. That analysis still gave the same result, the result being very low indeed in non-fatty solids. The information came to me; I got to know this from the analysts, that there was a very large proportion of fat in that incriminated milk, very much higher than I am now speaking of here, nearer 4 per cent. than 3 per cent., although it was particularly low in solids. I never could understand why the man was prosecuted. There arises my point, that the result of the analysis of the incriminated milk should always be given in open court, as well as the standard upon which the prosecuting analyst goes.—In your opinion that case would rather go to show that it is inadvisable to attempt to fix a standard of non-fatty solids?—Yes, it would, because I hold, as our language expresses it, that the cream gives you the value of the milk itself.—You think that the fatty solids are the measure of the value of the milk?—Yes, the cream of the whole thing.—

(To be continued.)

THE MANAGEMENT OF MAIN ROADS. COUNTY COUNCILS' OPINIONS.

THE County Councils' Association have published a digest of answers to a series of questions put by them on the above subject, and which is well worth the study of all interested in it. It appears that at a meeting of the Association, held on June 20th last, it was directed that a series of questions relating to the management of main roads and highways, which had been drafted under the supervision of the Parliamentary Committee of the Association, should be sent to the clerks of the sixty-two County Councils in England and Wales. A few of the number have not sent replies, one of which is Devonshire, the Highway Committee of which is, perhaps, too modest, or may be much at sea, or possibly too much disgusted with the subject to have anything whatever to say about roads and kindred matters. In the majority of cases, so far as can be ascertained, the answers have been

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prepared or approved by the Highway Committees of the respective County Councils. The replies received from both divisions of Cornwall, from Lancashire, and from Norfolk, are those of the county surveyors; in Notts and Somerset the chairman, and in East Sussex the chairman and the late chairman of the Roads Committee are responsible for the answers to the questions of opinion.

The average annual cost per mile over the 15,068 miles maintained by the 39 Councils which have given full answers to the questions works out at about £56·85. The highest mileage rates are in Surrey, £160·75; Kent, £125·72, and Lancashire, £125·65. The lowest mileage rates are in Radnor £18, and Carnarvon £23·15. Thirty-five counties maintain the footpaths by the side of main roads, with certain reservations, one of which seems universally adopted, namely, that in regard to new work, a moiety of the cost is contributed by the local authority. Staffordshire disputes their liability and nothing has been paid since 1880 to 1891, when they paid something under protest.

In 23 counties the main roads are administered directly by the County Council. In nine counties they are administered indirectly, *i.e.*, by contract with the local authorities, and in seven counties both forms of administration exist, presumably experimentally. Eighteen counties have with slight reservations adopted and kept to the system of Highway Boards, but ten have continued, either altogether or in part, the old system of parish management. Ten, after adopting Highway Boards, have wholly, or to a considerable extent, reverted to the parish system; and in one the roads are managed partly by Highway Boards and partly by the parishes.

In respect to Part 2, "Questions of Opinion," five counties have not finished replies.

One of the questions was, "Is it desirable to alter the existing law with regard to the maintenance and management of the roads—(a) By giving the County Council exclusive power to manage all the important roads within the county. (b) By depriving the County Council of the management of all roads, and vesting such management in the District Councils. (c) By giving the County Councils power to grade all roads, so that the important roads should be maintained by the county and the minor roads by the parishes without the intervention of District Councils. (d) By constituting the County Council the sole highway authority for all roads in the county?" Eight counties reply that they do not wish for any alteration of the law in the direction suggested in "a." In no case does a county wish for an alteration indicated in "b." Six counties would make the County Council the sole Highway Authority, with the addition of three, which would except urban roads. And the remaining counties consider that principal roads should be managed by County Councils, and minor roads by District and Parish Councils, but there is much diversity of opinion as regards the way in which urban roads should be treated.

Question 3 was—"Is it desirable to give the control of the roads partly to the County and partly to the District Councils, and so create two staffs for the management of roads?" Ten counties answer in the negative, and 18 in the affirmative, while five do not answer. Twenty-four counties approve of the area constituted under the Act of 1894 for District Boards, while three do not, and three give a qualified approval.

Nineteen counties would not make use of District Councils for maintenance by contract of main roads, six would make use, four "will probably make use," and in one "the matter is under consideration." The feeling seems almost universal in favour of separate surveyors, the only councils which advocate the same surveyor being appointed by arrangement between the two authorities being Rutland and Suffolk East, which last answers "in some cases." One or two answers have been quoted in order to show the grounds on which they have been given. That from Cornwall West is "The style of the management for the two classes of roads being different, the money required being raised by two distinct precepts; to prevent the suspicion of county material, etc., being used on parish roads; to have a voice in the selection of surveyors, contractors, etc.; to have effective control of their respective districts, there should be separate surveyors." Northumberland says, "Each county should appoint its own officers. There are many considerations which influence District Councils in the appointment of officers from which County Councils are fortunately free, and it would be found impracticable for the two bodies to arrange to appoint the same surveyor." Carnarvon says, "It is always best an official should be responsible to one authority only."

Eighteen counties approve of the suggestion to bring traction engine traffic by legal enactment within the terms "extraordinary traffic" or "excessive weight." Five negative the question, six do not answer the question with either a direct affirmative or a direct negative, and four do not return an answer.

That County Councils should have the same power to make by-laws in regard to vehicles drawn by steam as they have now in respect of vehicles drawn by animals, every county answers in the affirmative. Finally there is an expression of opinion from eight counties that the relations between the County Council and urban authorities managing their own roads stand in need of revision, and that the liability of the former should be more clearly defined.

LOCAL BOARDS AND COMBINED DRAINAGE.

LOCAL sanitary authorities have been somewhat exercised of late by the question of combined drainage, and as to the proper apportionment of the cost of sewage and drainage between owners and the authorities. Several opinions have been expressed on the subject, and a conference was recently held by the Islington Vestry for the purpose of arranging a concerted action on behalf of the metropolitan authorities, in order that the legal opinion of the House of Lords could be obtained on the subject, which is of immense financial importance to the ratepayers. At Tuesday's meeting of the Poplar District Board of Works, the clerk, Mr. W. H. Farnfield, threw some useful light on the subject. He pointed out that the law was quite clear, and that it was only the local authorities themselves which were at fault. Where a Board has preserved all the plans and resolutions affecting the drainage of property within its district according to the Act of Parliament, all question as to liability for reconstruction or repair can be settled at once, because the position is self-evident. Where, however, the plans have not been so preserved, the owners get the advantage over the Authority. In the case of Islington, which has not preserved the plans, the ratepayers have been mulcted in about £2,000 costs in one year, and therefore the Vestry wants an alteration of the law. But in the case of the Poplar District Board of Works all the plans have been preserved, and can be referred to, with the result that that Board has not cost the ratepayers more than a few shillings in regard to this matter during the whole of its existence. This is the difference between official work done properly and improperly. Mr. Farnfield's explanation comes at an opportune time.—*East London Press.*

THE HEALTH OF PORTSMOUTH IN 1894.

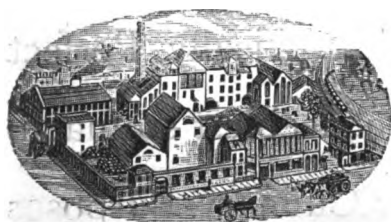
DR. B. H. MUMBY says:—The following figures relating to the vital statistics of the borough of Portsmouth will no doubt be interesting to some of your readers.

The number of deaths registered during the 52 weeks ending on Saturday, December 29th, was 2,593, and of births, 4,709, so that the birth-rate for the year 1894 per 1,000 living was 27·3, and the death-rate 15·2 for the same number; both these rates are lower than for any previous year of which I can find a record, indeed a death-rate of 15 was formerly considered almost an impossibility to attain. The age and sex distribution of the population of Portsmouth is slightly more favourable to health than it is in England taken as a whole, but when the recorded death-rate is corrected for this difference it is only 15·55.

The births and deaths of the sub-districts are given below:—

Portsmouth Town...	Births 123	equal to	17·7
	Deaths 79	"	11·4
Portsea Town.....	Births 323	"	21·2
	Deaths 169	"	11·1
Kingston	Births 2,087	"	32·7
	Deaths 1,251	"	19·7
Landport	Births 1,935	"	28·2
	Deaths 949	"	13·7
Southsea (New)	Births 211	"	13·3
	Deaths 145	"	9·7
Whole Borough.....	Births 4,709	"	27·3
	Deaths 2,593	"	15·2

These are the exact numbers registered, and need some correction before they are taken as standards of health; thus the Union and two hospitals are situated in Kingston, and unduly increase the numbers of deaths in that district. These numbers will be corrected in my annual report.



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Food and Sanitation.

SATURDAY, APRIL 20TH, 1895.

"THE TIMES" AND CHICAGO MEATS.

THE British Embassy at Washington has, according to our able contemporary *The National Provisioner*, of Chicago, investigated the farrago of filthy concoctions, *re* diseased meats, which the *Times* published on March 4 last. "Mr. Gough, Secretary of the Embassy, started out to do a little investigating of his own. A thorough investigation convinced the British official that there is no ground for the statements printed by the *Times*. Mr. Gough had a conference with Dr. Salmon, chief of the Bureau of Animal Industry, with regard to the matter. Dr. Salmon explained the regulations of the department which required the destruction of the entire carcase of any animal condemned, thus precluding the possibility of any part being used. He informed Mr. Gough that last year his office had inspected 12,000,000 head of cattle, and this year the inspections would aggregate 18,000,000. It is gratifying to note that the Embassy is alive to the importance of immediately procuring evidence wherewith to set the

English public right in a grossly misleading statement accepted and published by their leading daily paper, and originally emanating from a discharged employee, and written for the purpose of injuring his former employers. We should have thought that the *Times* had learned ere now of the folly of dealing with Piggotts.

"With the data which will be submitted to the English House of Commons through the efforts of Mr. Gough, it will be interesting to watch if our contemporary will have the grace and decency to retract and apologise."

The National Provisioner says the *Times'* lies emanated from a discharged employee of a Chicago firm. This was very likely the person who tried to secure the insertion of the concoction in FOOD AND SANITATION last year.

THE COLOSSUS OF MEDICINE.

IN the face of the action of Mr. Ernest Hart towards the British Institute of Public Health Congress last year, the selection of this gentleman as the president of the public medicine section of the next annual meeting of the British Medical Association is naturally causing considerable dissatisfaction among medical officers of health, especially in the London district. It is felt, says the *Medical Times*, by many "that the selection of a person outside the ranks of those who have made this subject a speciality is a slight upon them. With men like Thorne Thorne, Shirley Murphy, T. Orme Dudfield, and others, who would have worthily occupied the position, it is thought to be strange that the practice of former years has been departed from on this occasion. It is understood that more than one body, representing the interests of public health workers, are taking steps in the hope of securing a specialist as a President."

The *Medical Times*, like a great many members of the profession, is apparently beginning to find Mr. Ernest Hart's self-advertisement methods very wearisome. They lead the public at home and abroad to believe that he is the God of Medicine in this country. As sanitary science has many hundreds of men capable of teaching Mr. Hart practical sanitation, we do not wonder that considerable annoyance should be felt at his selection for the post in question.

THE GLASGOW HEALTH COMMITTEE'S PROPOSALS TO AMEND THE ADULTERATION ACTS.

THE following has been sent to the Select Committee on the Adulteration of Food Products:—

The petitioners are the Local Authority of the City of Glasgow, whose population at the census of 1891 was 656,185, and, as such Local Authority, are charged with the execution of, *inter alia*, the Food and Drugs Acts within the boundaries of the City.

They respectfully submit this statement, showing what amendments on these Acts they would, in the light of their experience in carrying out these, suggest should be considered by the Committee on Food Products Adulteration, with a view to effect being given by Parliament to these suggested amendments.

1875 ACT.

Section 2.—The word "food" should be broadened in its definition, with the view of including all condiments, flavourings, colourings, preservatives, or other substances introduced to, or used along with, human food—that is to say, to every article used for admixture with food or drink of man.

Section 3.—That this Section should be amended by deleting the words therein "so as to render the article injurious to health," and substituting, in lieu thereof, the following or similar words, namely, "which is of a poisonous nature, or which may render the article dangerous or injurious to the health of any person using the same, or which is known to be dangerous or injurious to health."

It is also suggested that the onus of proving that the added substance is not dangerous or injurious to health should rest upon the defendant—that is to say, on the person who is proved to have introduced it to the article of food or drug, or to have sold it so introduced.

It is further suggested for the consideration of the Committee the advisability of distinctly specifying certain ingredients of an admittedly poisonous or dangerous or injurious nature as absolutely forbidden, and, in that case, the analyst's certificate of the presence of such ingredients, or any of them, would be sufficient to establish the charge of adulteration. As an example of this, reference may be made to a law of the German Empire, passed 5th July, 1887, to this effect:—"Colours detrimental to health are not allowed to be used in the preparing of food, and of other articles for domestic use intended for sale. Colours injurious to health, within the meaning of this Section, are these coloured substances and coloured preparations which contain antimony, arsenic, barytes, lead, cadmium, chromium, copper, mercury, uranium, zinc, tin, gamboge, coralline, picric acid."

It is suggested, too, that the best way to determine what ingredients should be included in such a specific enactment would be by the French method of nominating a commission of acknowledged experts to report upon the same. This could be done, as in France, from time to time—the Food and Drugs Act providing for the addition to the list of proscribed ingredients of these new chemicals which might be found present in human food without warning.

At present such questions are in this country fought at enormous expense, and, as regards the interests of the consumer, with great disadvantage. Whatever the result, it settles nothing, excepting possibly in the particular locality and before the same magistrate. In other parts of the country exactly the same question may be raised with an entirely different result, whereas, by the method of commission now suggested, a purely scientific enquiry would be held, at which the interests of the consumer would receive fair consideration, and there would be no possibility of injustice to any individual, shopkeeper, or manufacturer, because the result would apply equally over the whole country.

Section 4.—It is submitted that an addition should be made to this Section forbidding the sale of drugs which, not being made from the natural source, contain ingredients which are injurious or prejudicial to patients to whom the drugs might be administered, and it is further urged that the British Pharmacopœia should be legalised as the standard for all drugs. At present there is no standard for drugs, and, therefore, it is well nigh impossible to say, far less prove, that drugs supplied are not of the nature, substance, and quality demanded, as few, if any, know what they are legally entitled to get.

Section 6.—That Sub-section 1 of this Section should be amended on the lines suggested in the amendment submitted as regards Section 3, and be made to read somewhat as follows—"where any matter or ingredient, which is not of a poisonous nature, and not known, or not likely to be dangerous or injurious to health, has been added to the food or drug," &c., &c.

That Sub-section 2 be deleted, because it seems surely to be wrong to provide, as at present, that, while licensed and qualified dispensers of medicines are subject to the provisions of the Act, unqualified and irresponsible compounders are exempted. In the view of the Petitioners, it would be only right that proprietary medicines should require to have a label on each packet distinctly and clearly stating their composition. A provision should further be made prohibiting the addition of any inert, insoluble, or indigestible substance, or ingredient, to any article of food, unless the vendor in these cases also labels the article in such a manner as to clearly reveal to the purchaser the preparation and character of the inert, insoluble, or indigestible ingredient; and where the adulterant exceeds 50 per cent. of the total quantity of the article, such as it often does in coffee mixed with chicory, it should be made illegal to sell the compound by the name of the article adulterated. This is provided for in America in the case of cheese adulterated with oleo-margarine, put in to take the place of the

natural fat. The sale of such cheese is prohibited except under the name of "Imitation cheese."

Under this Section very many prosecutions take place regarding the sale of milk, which, so far as the supply of a city is concerned, is most probably and generally mixed or average milk. The fat of average sweet milk never falls under 3 per cent. of natural fat, yet, because it has been known that some half-starved cow has been found to produce milk as low in fat as 1.98 per cent., charges of adulteration, where the sample showed a percentage of fat considerably below the standard (2.75 per cent.) of Somerset House, have been dismissed. Thus, for want of a legalised standard, farmers and dairymen may, under these decisions, take away 33 per cent. of the natural fat of average milk, and sell with impunity what remains as sweet milk.

In the humble opinion of the Petitioners, some method ought certainly to be adopted of getting rid of the absurd contention that, because some cow, in some condition or other of health, or of feeding, or otherwise, has been known to produce some white fluid, which is called milk, therefore that milk must be taken as the standard of sweet milk in all cases throughout the country.

In view, therefore, of this, and of the fact that very large quantities of milk are thus impoverished, it is suggested that the Legislature should at once standardise sweet milk, and provide a clause specially dealing with this all-important food, especially in the cases of infants and of invalids. A standard should also be fixed in the case of cream, and the sale thereof, when under that standard, should not be allowed as "Cream."

On these points, as on that of possible injury to health under Section 3, the question of a standard is eminently one to be considered by a commission of experts, but, in any case, the purveyor of such an abnormal article ought to be compelled to prove that it is the production of a single cow, to be produced for independent investigation, as the quality and purity of the supply of towns very closely affect the health of the infant population, and the mortality of infants in towns is always greatest in the industrial quarters, and it is there that the adulterated milk is purveyed.

The Petitioners would point out that in the City of Berlin, by Municipal Ordinance of 6th of July, 1887, the sale of milk is prohibited which "contains any foreign matter, especially any so-called preservative of whatever kind."

Since the date of the passing of the Food and Drugs Acts, the use of so-called food preservatives has been so much extended as to create a new phase of adulteration, which renders some amendment extremely necessary. The article of food often does receive repeated doses of objectionable ingredients, as preservatives, when passing through different hands. Thus milk may receive a dose of boracic acid, intended as a preservative, from the farmer; a second dose may be added by the dairy-keeper; and a third by the nurse or mother to the child; and thus the infant receives a triple dose. It is also well established that the use of boracic acid, salicylic acid, and other objectionable ingredients, is extremely common, and is becoming more so. Out of 24 samples recently taken at random by one of the public analysts in this city, ten contained objectionable substances. These samples, relating to aerated waters, lager beer, coffee extracts, all had salicylic acid; aerated waters had lead; fish, milk, and butter had boracic acid.

Section 7.—It is suggested that compound foods, such as invalids' and babies' foods, meat extract, and so-called egg powders, should also have legibly marked on their coverings their composition, as otherwise this Section is of little service to the public, who purchase in ignorance of the contents of these parcels of compound foods, being mainly induced to do so through advertisements.

At present, unless these foods contain injurious admixtures, the vendors may sell what they choose under the names adopted, and for the same reason, as already stated, patent or proprietary medicines should be placed in the same category, in order to prevent fraud.

In asking for some particular soothing syrup, or for certain pills, the public get what they demand, but at present they demand in complete ignorance of what they ought to get.

Section 8.—This Section deals with harmless adulteration of simple or natural food, but there has been some dubiety as to the meaning of the words "a label distinctly and legibly written or printed."

It is urged that the Section should be amended to the effect of specifying the size of the letters which must be used in all such intimations, as is done in the case of the sale of margarine, under Section 6 of the Margarine Act of 1887. It is also suggested that words like the following should be added to the end of that section, "the said writing or print to show the nature and proportional quantity of the matter or ingredient added, and the letters on label intimating the same to be each not less than one-eighth of an inch square."

Section 9.—It should be provided that it shall be no good defence to aver or prove in a case where extraction of cream is averred that the cream is likely to have been given to earlier purchasers, otherwise there may be prejudice or fraud on late purchasers.

Section 13.—This section should be amended to the effect of making clear that female sanitary inspectors should be regarded as deputies of the officers appointed under this Section, in respect that the male inspectors become known, and some milk vendors habitually pour some cream into the sample of milk before handing it to them, and others keep what is known as "the Inspector's can."

Section 22.—This Section should be amended to the effect of giving power to Stipendiary Magistrates in Scotland to try cases under the Acts, as in Glasgow at least the Sheriff's hands are

often so full that occasionally a long time elapses before a trial diet can be secured.

Section 25.—This Section deals with the question of warranty, and it is suggested that it should be amended to the effect of clearing up the disputed point as to what really constitutes a written warranty under the Act.

It is suggested that a schedule should be attached to the Act giving the precise form of the warranty required, which form might be published in the local newspapers by the various Local Authorities, in order to fully intimate the same to wholesale and retail dealers.

The procuring of samples of food and drugs from retailers, which may have been adulterated by the wholesale dealer or manufacturer before they reached such retailers, is the principal grievance which Sir Charles Cameron sought to meet in his recent Bill. The petitioners are of opinion that, to give effect to that proposal would utterly destroy the whole intention and usefulness of this Act. It may, in certain cases, be true that retailers receive adulterated articles from a wholesale house or manufacturer, and by taking no precautions to obtain a warranty with these, or discover for themselves the constituents of the articles, are punished for selling them. In this respect they are in the same position as the retailer of milk who receives this commodity from the farmer by railway, and in whose interest Section 3 of the amending Act of 1879 was passed. This Section works well where the honesty and vigilance of the milk purveyor are exercised in conveying the necessary information to the Inspector, and, in the view of the Petitioners, a wholesome check would be put upon agents, wholesale houses, and manufacturers, if the provisions of this Section of the amending Act were extended to all articles of food and drugs; and sufficient protection would be afforded to a retailer who had any cause to suspect the purity of goods invoiced to him, were the Inspectors empowered to procure samples from goods in course of delivery, and to this extent assistance might be given to the retailer; but it would be destructive of the Act to take all responsibility off his shoulders in the manner proposed in the recent Bill introduced by Sir Charles Cameron, and which the Petitioners understand, was, *inter alia*, remitted to the Committee for consideration.

Section 27.—This Section would, in any case, require to be amended, so as to define and specify the procedure competent to secure the conviction and punishment of a wholesale firm, or manufacturer, having his *locus* in a distant part of any of the three kingdoms—in other words, should provide how an English or an Irish firm is to be made amenable to the Scotch courts, and *vice versa*.

ACT OF 1879.

The only observation the Petitioners have to submit on this Act is that before stated, as to the extension of the provisions of Section 3, presently applicable only to milk dealers and farmers, to all wholesale merchants and manufacturers sending food or drugs to retailers.

MARGARINE ACT, 1887.

Section 6.—This Section should be amended to the effect of providing that the paper wrapper in which the margarine is to be delivered shall have printed thereon, as therein required, the word "margarine" alone.

It has been held by the High Court of Justiciary that if the word "margarine" was printed, as required by that Section, on the wrapper, there was nothing to prevent the retailer printing the names of a dozen other articles of food on the same wrapper, although the intention of the Act was that by printing the word "margarine" it was to be an intimation to the purchaser that what he was receiving was margarine. Thus, in the case in question, it might have been any one of the dozen enumerated articles, and one of the Judges (Lord Young), who dissented from, or at least demurred to, the decision, said that it might mean that the dealer would have conformed to the Act if, by having regard to the size of the print of the word "margarine," he made the intimation read "This is not margarine."

It is also suggested, as regards this Section, that a clause should be inserted dispensing with the necessity of analysis where the contravention is simply neglecting to label the kit or parcel of margarine, when it is admitted by the seller at the time that the article is margarine. It is provided in Clause 9 of Section 33 of the Sale of Food and Drugs Act, 1875, which regulates the procedure under this Act, that "every penalty may be recovered at the instance of the . . . person who caused the analysis to be made." Thus an analysis is necessary to found a prosecution, and hence, in the great majority of cases under the Margarine Act, unnecessary expenses are incurred by analysis, which have to be paid by the defenders, and this has been the subject of comment on several occasions by Sheriffs in the City.

The petitioners, therefore, in the public interest, submit the foregoing suggestions as suitable for the consideration of the Committee, and desire to be heard in evidence in support thereof.

The following are the witnesses, or some of them, whom the petitioners are prepared to adduce in support of their views, and who will be ready to give other and fuller reasons for the adoption of the foregoing suggestions:—

Robert Crawford, Esq., Chairman of the Health Committee of the City of Glasgow.

John M'Farlane, Esq., Member of that Committee.

William Maclay, Esq., Member of said Health Committee, and Chairman of the Sub-Committee on Milk and Food Supply.

Dr. John Garey, Member of said Committee and Sub-Committee.

Mr. J. B. Russell, M.D., LL.D., Medical Officer of Health of the City of Glasgow.

Mr. Archibald K Chalmers, M.D., D.P.H. (Camb.), Medical Officer of Health of the City of Glasgow.

Mr. Peter Fyfe, F.R.S.E., Chief Sanitary Inspector of the City of Glasgow.

Mr. R. R. Tatlock, F.R.S.E., Public Analyst of the City of Glasgow.

Mr. John Lindsay, Writer, Assistant Clerk to the petitioners.

ADULTERATION PROSECUTIONS.

MEAL.

At Perth, on April 10, before Sheriff Brown, Alexander Hall, miller, King-street-road, was convicted of having sold 7 lb. of meal which contained foreign matter to the extent of 7 per cent. He explained that on the occasion libelled, before grinding oatmeal, he was grinding barleymeal, and some of the grain had gathered round the stones. A fine of £3 was imposed, with the option of 14 days' imprisonment.

LARD.

HENRY MORRIS, shopkeeper, 79, St. George's-road, Bristol, was summoned on April 10, for selling one pound of lard containing 80 per cent. of beef fat and cotton seed oil. Defendant said he sold the article, but not as lard. Inspector Parfitt said he went to the shop and asked for a pound of lard, pointing to some, and was served. He said who he was, and the assistant said it was not pure lard, but was lardine. P.-C. Moss corroborated, and said they were not told it was not pure lard until after the purchase. Two lady assistants of the defendant said they told the inspector it was not pure lard before it was taken from the scales, and they always told customers it was not pure lard. A fine of 10s. was imposed, and the Bench advised the defendant to mark the article so that people might see it was not pure lard.

MILK.

In Glasgow Sheriff Court, on April 10, Francis Smith, 80, M'Alpine-street, was fined 30s. for having, on Wednesday, March 13, sold one pennyworth of sweet milk which was 40 per cent. deficient in fat. Smith said he sold the milk as he got it.—Marion Currie, 50, Clyde-street, was fined £2, with the alternative of 10 days' imprisonment, for having, on March 13, sold one pennyworth of sweet milk deficient in fat to the extent of 23 per cent. Respondent was proceeded against in absence.

THE FROST AND THE MILK SUPPLY.—John D. Jones, a dairyman, of Lorrmoore-road, Walworth, was summoned before Mr. Sheil, on April 10, by the Newington Vestry, for selling milk containing added water to the extent of 9 per cent. Mr. Ricketts defended. The sale of the milk was admitted, but for the defence it was contended that, owing to the severity of the weather at the time the sample was taken (January 31), the milk was frozen, and it was impossible to get a fair specimen of the bulk. At the request of the defendant, Dr. Muter, the public analyst, was called, and, in answer to Mr. Ricketts, stated that if milk was partly frozen and the ice was taken out and melted separately, that portion would have more water in it than the other part. If the sample submitted to him consisted of the frozen portion of the milk, that might account for the result of the analysis. Evidence having been called to show the milk was not tampered with in any way, Mr. Sheil dismissed the summons.

ADULTERATION IN BERMONDSEY.—Wm. Driver, milkman, of 42, Silwood-street, Rotherhithe New-road, was summoned on April 10 at the instance of Mr. Henry Thomas, inspector under the Food and Drugs Act for the Bermondsey Vestry, for having sold milk with 10 per cent. of added water. Defendant, who said he sold the milk as he received it, was fined £5 and 12s. 6d. costs.—Edward Rayment, 65, Abbey-street, Bermondsey, appeared to a similar summons taken out by Mr. Thomas for a deficiency of butter fats to the extent of 20 per cent. Mr. Armsrong, solicitor, who appeared for the defence, submitted that the summons must fail, as the sample was purchased by an assistant inspector, who was not an officer under the Act. Mr. Fenwick held that the assistant who purchased the milk came under the category of a constable, inspector, or officer, and fined defendant £20 and 12s. 6d. costs.—Wm. Lithivy, of 36, East-lane, was fined 40s. and 12s. 6d. costs for a contravention of the Margarine Act.

SPIERS AND POND'S MILK.—Messrs. Spiers and Pond, refreshment contractors, was summoned at Southwark, on April 10, at the instance of Mr. T. Wigg, Inspector under the Food and Drugs Act for the Vestry of Lambeth, for having sold milk which, upon analysis, was found to be deficient of butter fats to the extent of 30 per cent. Mr. J. P. Grain appeared for the defence, and Mr. Oscar Walker, solicitor, watched the case on behalf of an interested person. Evidence was given by the Inspector, who purchased two glasses of milk at Waterloo Railway Station on March 23, whereupon Mr. Grain said he admitted the evidence of the inspector, and the result of the analysis, but Messrs. Spiers and Pond were supplied with the milk under a warranty. He would call evidence to prove that the milk was sold in exactly the same state as it was received. A number of young women, barmaids in the employ of the defendants, were called, and stated that, from the time the milk was delivered until it was sold, it was in no way tampered with. Mr. Fenwick said, after reading the warranty, that he should require evidence that the milk which was the subject of the present

investigation was that supplied under the warranty. Mr. Ellis, secretary to the defendant company, said there was in existence a written contract with regard to delivery and price, and Mr. Fenwick adjourned the case for the production of that document. He found as a fact, however, that the milk was sold in exactly the same condition as it was delivered to defendants.

COFFEE.

At Kidderminster on April 4 George Lloyd, shopkeeper, Sutton Common, was summoned for selling adulterated coffee on the 6th March.—A youth named Edward Edwards, of Foley Park, proved being sent by the police to buy a quarter of a pound of coffee from the defendant's shop and to handing it over to Sergeant Pitt.—The last-named said it was in consequence of instructions issued by Colonel Garmichael, Chief Constable of the county, to obtain samples under the Food and Drugs Act, that he sent Edwards into defendant's shop to purchase the coffee. Placing himself in a position to learn when the transaction was completed, witness then entered the shop, and enquired of Edwards what it was he had purchased. He said, "A quarter of a pound of coffee," and handed the parcel to witness, saying he had paid threepence for it. Witness told defendant he had bought the coffee to be analysed, and asked to be served with another quarter of a pound sample of the same article, which defendant supplied him with, enclosed in a similar bag.—Defendant said he bought the article as coffee and sold it as coffee, for the same as he got for it.—The certificate of the county analyst (Dr. Swete) was put in, certifying that the coffee was adulterated with chicory to the extent of 75 per cent. When the summons was served upon him, defendant admitted the mixture was not coffee. He said he neither bought nor sold it as coffee.—A fine of 10s. and 11s. costs was imposed.

DRUGS.

MR. WILLIAM FELTON, chemist, Balls Pond-road, was summoned to the North London Police Court, on April 10, for selling a drug (liquid iodine) which was not of the nature and substance demanded by the purchaser, and as laid down by the British Pharmacopœia. Mr. Hoare prosecuted for the Vestry of Islington, who had taken out the summons under the Food and Drugs Act; and Mr. C. V. Young defended. The evidence showed that Dr. Harris (Medical Officer of Health for Islington), being anxious to test the drugs sold in the parish, sent out an inspector with a prescription for 6 oz. of liquid iodine. This was purchased from the defendant, and 2s. paid for it; but when it was analysed it was found to be deficient in strength in both the iodine and the potassium iodide, of which it was composed. The defendant pleaded guilty, and added that the spirit was of such a volatile character that it easily accounted for the deficiency. The gain to himself by the transaction was about one-eighth of a penny. It was a drug very seldom called for, though it was in the British Pharmacopœia, it having been substituted by a liniment for sprains and the like. It was a very strong application. The iodide of potassium was simply the solvent, and deteriorated with the iodine. The fact was he (defendant) had but 4½ oz. of the iodine left in the stock bottle, and as the inspector could not wait for a couple of hours, he made up the 6 oz. from an equally efficacious liniment. He was thunder-struck when he saw the analysis. He had been eight years in business, and longer than that a qualified chemist. Mr. Marsham agreed that it was a very volatile spirit, but it was the business of the chemist to see that it maintained the strength laid down by the British Pharmacopœia. Fined 20s. and 12s. 6d. costs.

MEAT.

At the Derby Borough Police-court, on April 10, before Ald. Newbold and other magistrates, Joseph Ashmole, carter and dealer, of 2, Exeter-street, Derby, was summoned for having upon his premises for the purpose of sale the carcass of a sheep intended for the food of man which was unsound and unfit for human food, on March 19.—The Town Clerk prosecuted, and Mr. B. W. Moore defended.—Mr. Gadsby stated that when the inspector found the carcass it was carefully and properly dressed, and was evidently intended for human food. The defendant was not in the room when the inspector saw the sheep, and when he came in he said, "Oh, I'm going to give that to my dog."—Mr. Wilkinson, the inspector, said he had never seen a carcass more carefully dressed. It was stitched up in a clean sheet. The flesh was soft and flabby, and the opinion he formed was that the sheep had died in the usual way, and had not been properly bled.—In reply to Mr. Moore, the witness stated that the defendant had one very large dog and several other dogs on the premises. He told witness that the sheep had been given to him in the Cattle Market.—The Bench decided to convict, and imposed a penalty of £5 and costs, or a month's imprisonment. Mr. Moore gave notice of appeal.

HENRY CAWSEY, Dean Hill Farm, Salsbury, was summoned before Alderman Green, at the Guildhall, London, on April 10, for sending to the Central Meat Market the carcasses of a calf, a duck, and a fowl, the same being diseased, and unfit for human food.—Mr. Vickery prosecuted on behalf of the Commissioners of Sewers.—Dr. W. Sedgwick Saunders (Medical Officer for the City) stated that the calf had suffered from some disease. The fowl and duck were simply putrid. The eating of such meat would be excessively dangerous.—Defendant said this was a case of guileless blundering; he took the veterinary's word, and believed the meat was good for food. So far as the duck and fowl were concerned, he knew nothing about them; these were put in the hamper by his sister.—Defendant called Miss Milley Cawsey, who said she placed the

duck and fowl in the hamper. She knew they were rather high. The calf, she believed, was good.—The Alderman observed that there was not the shadow of a doubt in this case, for the defendant himself had told the officer of the Wilts constabulary that the calf had been ill for some days before it was killed. It was the duty of the magistrates to protect the people of London from being poisoned. He should impose a fine of £40 and £3 3s. costs, or, in default, a month's imprisonment.—On hearing the decision, the defendant's sister fainted, and had to be taken out of court.—Cawsey said he should give notice of appeal.

ADULTERATION IN YORKSHIRE.

DURING 1894 there were 1,595 samples of food, drugs and drink submitted for analysis to Mr. A. H. Allen, public analyst for the West Riding of Yorkshire. They comprised over eighty different substances, which is gratifying, and speaks well for the zeal and intelligence of the West Riding Inspectors, who have not confined their attention to butter and milk, as too many officials do. Mr. Allen says:—

"The figures show a percentage of 10·8 adulterated samples, in addition to 6·5 per cent. which were doubtful, inferior, or adulterated to an insignificant extent, and 82·7 per cent. which were genuine.

"For 1893, the seriously adulterated samples amounted to 12·2 per cent. of the total, and the doubtful or inferior samples to an additional 6·9 per cent., whilst 80·9 per cent. were genuine."

The statistics show an increase of 19 on the total number of samples received in 1893, but the Local Sanitary Authorities have only submitted 17 samples during 1894 against 117 samples during the previous year.

It will be observed that only a single sample has been received during the year from a private purchaser.

Of the more important articles it is interesting to observe that coffee is frequently adulterated, in almost every instance the admixture being an addition of chicory. Of course, chicory is often added as a matter of taste by purchasers, but not to the extent to which it has been occasionally found in the adulterated samples, some instances occurring in which the adulteration exceeded 90 per cent. As chicory is destitute of the active principle and volatile oil which give coffee its most valued properties, its unacknowledged addition to coffee is objectionable. A case which deserves special mention is that of a sample sold in a canister bearing the following label:—"This coffee is a blend of the finest growths imported, mixed with chicory, and prepared as in France. After being roasted and ground it is immediately packed into tins, so that the fine aroma and delicate flavour are fully retained." On analysis, it proved to consist of a mixture of one part of coffee to three parts of chicory.

Of the condiments examined the adulteration of pepper was almost nil, but the recognition of foreign vegetable additions to ground pepper is very difficult, and it is possible that some cases of admixture escape detection.

SOMERSET HOUSE INCOMPETENCE AGAIN.

Mr. Allen says:—"The practice of mixing with ground ginger a certain percentage of ginger-root which has already been exhausted of its active principle by the manufacturers of ginger beer, appears from the number of cases in which such an adulteration has been detected to be widely prevalent. In one instance a sample of ginger submitted to me was found to contain 10 per cent. of hydrated sulphate of lime. This had been added in the form of fibrous gypsum, the characteristic structure of which was distinctly recognisable under the microscope. In my opinion, this addition must have been intentional. I recently collated the results of analysis of 104 specimens of ground ginger, 70 of which were analysed in my own laboratory, and as a result of those analyses obtained an unprecedented amount of information respecting the composition of ginger. This enabled me to condemn a sample for containing 5 per cent. of sand and extraneous mineral matter, but my certificate being disputed the sample was sent to Somerset House. The referees confirmed the presence of sand, but said that the proportion found was not in excess of that which was sometimes met with in ginger-root ground as imported and not previously washed. As a matter of fact the other results of my analysis showed the sample in question had been washed, but the referees do not appear to have studied this point, and as a result the case was dismissed. As a consequence of the position taken by the referees it will be possible in future to add 5 per cent. of warehouse sweepings or other rubbish to all ground ginger.

The adulteration of milk is still practised extensively, but it is a noteworthy fact that while only 22 samples were positively condemned for being skimmed or watered, in no less than 47 other cases was the character of the milk highly suspicious. I have no moral doubt that in the majority of those cases the milk had been tampered with, but in the face of the position taken with respect to milk analysis by the Somerset House chemists, it was impossible to give such certificates as the results of the analysis in my opinion justified. It is a deplorable fact that the referees at Somerset House for years assumed that the change in milk by keeping progressed with perfect regularity, and was independent of temperature, time of year, presence of added water from pure or impure source, and other conditions which it is a matter of common knowledge affect the rate of putrefaction. During the last few years the referees have themselves abandoned their constant time-allowance, and have adopted in its place a method which has not been submitted to chemists for their criticisms or published in detail, and which, from the description of it given by Mr. Richard Bannister

in his evidence before the Select Committee on Food Products Adulteration during last session, is not based on scientific principles or adapted to effect its purpose. In his evidence, Mr. Bannister gave certain figures which he stated were the limits of composition adopted by Somerset House as indicative of genuine milk, but it appeared from his certificate in a case which is known as the Woodgreen case, that these limits are not adhered to by the referees in actual practice. Formal application to Dr. Thorpe, the new chief of the Somerset House laboratory, and informal application to his deputy, Mr. Richard Bannister, failed to elicit for the benefit of myself and other public analysts, any explanation of their attitude. Although Mr. Bannister stated in his evidence that the referees were always ready to communicate any information in their power to public analysts who applied for it, both he and Dr. Thorpe categorically refused to supply information which was well within their power to give. In common with my brother analysts, I look forward to the opportunity of explaining the position to the Select Committee on its reappointment during the ensuing session.

Thirty samples of condensed milk have been received, representing most of the principal brands in the market. It is evident that in the case of tinned articles of this kind the retail vendor is only technically responsible, the real fault for any breach of the Act lying with the manufacturers. Condensed milks are prepared by evaporating milk, usually deprived of more or less of its fat, to about one-third of its bulk, and adding in most cases a large quantity of cane sugar as a preservative. Condensed milk appears never to be concentrated to more than one-third of the bulk of the original milk, yet in nearly every instance the label directs the addition of a much larger proportion of water than this, in one instance recommending dilution with 12 to 14 parts of water when the milk is to be used for infants. It is sometimes asserted also that the milk contains all its original fat, when this is far from being the case. The extensive employment of these inaccurately described condensed milks is deplorable, and probably accountable for many instances of infantile emaciation and disease. Unfortunately, it is doubtful whether successful proceedings under the Sale of Food and Drugs Act could be taken against the manufacturers for inaccuracies on the labels of the articles they vend.

A large number of samples of lard have also been received, with the result that in no case was the addition of beef-fat positively detected. This fact is curious in the face of the positive evidence given in connection with some samples of lard purchased towards the end of 1893, where the manufacturers stated in evidence that the addition of beef-fat to American lard was absolutely necessary under certain circumstances. The successful prosecution of the vendors of such adulterated lard at Wakefield in March, 1894, appears to have had the salutary effect of arresting the practice in question.

In the case of yeast, two samples contained a small admixture of starch. It is sometimes asserted that the addition of starch to pressed yeast is necessary for its preservation, but in view of the fact that the majority of the samples examined contained no starch, this contention appears to be untenable. Yeast is one of the subjects on which I asked the advice of Somerset House as to how they would deal with a sample containing starch, if submitted to them under the Act, and was refused any information as to their opinion or probable attitude.

A large number of drugs and remedies of various kinds have been submitted to me. Some of these were of such a character as to make it impossible to give definite certificates on them. In the first place, galenic preparations purchased under the name of articles described in the British Pharmacopœia are usually wanting in such definiteness of character as is necessary to enable a public analyst to certify to their adulteration. As an instance, Friar's Balsam is a useful domestic preparation which is represented in the British Pharmacopœia by the Compound Tincture of Benzoin; but I know no authority which would compel the vendor of an article sold under the name of "Friar's Balsam" to comply with the requirements of the British Pharmacopœia as to the composition and quality of Compound Tincture of Benzoin. To complicate the question further, the British Pharmacopœia simply prescribes the method of preparing compound Tincture of Benzoin, but gives no test or character by which its general nature can be recognised. Another instance of a typically indefinite character was a sample of Lemon Table Jelly. It appears to me that so long as the article is a jelly, palatable, and flavoured with lemon, it complies with the description under which it was purchased.

As a further illustration of the difficulties under which public analysts work, I may say that the British Pharmacopœia, while defining the ingredients of Tincture of Rhubarb and the strength of spirit to be used in its preparation, gives no test by which a preparation properly made can be recognised. Further, on applying to the official referees under the Sale of Food and Drugs Act they professed their utter inability to give me the least assistance in laying down standards or limits of composition for tincture of rhubarb, or any information respecting the practice in the Somerset House laboratory. In order to adequately examine the samples of tincture of rhubarb submitted to me, it has been necessary for me to prepare and purchase a number of such preparations, and devise a method for their examination and analysis with a view of comparing authentic tinctures with those submitted to me by the inspectors. I have thus acquired considerable information on the subject, but am, of course, liable to have my certificates contradicted at any moment by appeal to the chemists at Somerset House, who may base their opinion upon wholly different data.

Of ten samples of seidlitz powders examined, five exhibited very

material departures from the composition of the seidlitz powders prescribed in the British Pharmacopœia, and usually this departure was in the direction of the diminishing the amount of the ingredients in each powder, thus reducing their activity. In my opinion, it is of high importance that a drug sold under a definite name should be, as far as is practicable, of constant quality and composition. This is not always attainable in the case of natural drugs, but there is no excuse in the case of preparations compounded of definite chemicals, as are seidlitz powders. It is, therefore, to be deplored that the chairman of a bench of magistrates, before whom a case of the kind was brought, should have expressed the opinion that the inspector could be better employed than going about buying seidlitz powders. In another instance with reference to butter adulteration a magistrate made the remark from the Bench that he should do everything in his power to prevent the enforcement of such an iniquitous law as the Sale of Food and Drugs Act.

CHEESE—IMPORTANT DECISION.

At Leeds, on April 8, the Stipendiary gave judgment in the following case, heard by him on April 4, and in which he had reserved judgment. John Henry Collett, provision dealer, trading as D. Monroe and Co., was charged under the Food and Drugs Act with selling two samples of cheese, the fat of which was certified by the city analyst to contain 70 per cent. of fat other than milk fat. Mr. A. W. Bairstow prosecuted on behalf of the Corporation, and Mr. E. O. Simpson defended. The cheese in respect to which the proceedings were taken was labelled, "Valleyfield Cheese:—Finest Oleine," and according to the evidence of Mr. W. B. Walker, inspector under the Corporation, the defendant's manager admitted to him, when the sample of cheese was purchased, that he did not know what "Valleyfield" meant, he having been told when he bought the cheese that if he stuck the label on it he would be "all right." Mr. Simpson: What idea did the word "Valleyfield" convey to your mind? Mr. Walker: It conveyed the idea of fine cattle and rich pastures. (Laughter.) The Stipendiary: Where is Valleyfield—in America? Mr. Simpson: No, it is in Scotland. Mr. Walker: I should think there is no such place in the world. (Laughter.) Mr. Simpson: When you got to oleine what did you think? Witness: I had an opinion about oleine. (Laughter.) What was your opinion? I thought it referred to a fat which comes from the inside of a cow or bullock, known to butchers as the tallow cake. Mr. Thomas Fairley, city analyst, gave evidence to the effect that of the fat found in the cheese 70 per cent. was not milk fat. He explained that the fats which cheese ought to contain were the fats present in pure milk, and not any fat not so present. In reply to Mr. Simpson, witness said that the chief meaning which the word "oleine" would convey to the mind of anybody in the West Riding was cloth oil, or oil used in the woollen mills. (Laughter.) The Stipendiary: That is not a very attractive description of a cheese. (Laughter.) In the course of further cross-examination Mr. Fairley was asked if he knew that port wine was put into Stilton cheese. The Stipendiary: Before or after it is sold? (Laughter.) Mr. Simpson: By the manufacturer. Mr. Fairley: I have heard so, but the wine would have evaporated before the cheese was sold. (Laughter.) The Stipendiary: I am not sure whether that would not be an offence under this Act. (Laughter.) In reply to Mr. Bairstow, witness said the material sold to the inspector could not be truthfully described as cheese. For the defence, Mr. Simpson pointed out that there were many varieties of cheese, and urged that the question to be decided was whether under the denomination of "cheese" the purchaser had got what he would expect to get at the particular price (6d. per lb. in this case) which he paid. If, he argued, the vendor gave an accurate description of the commodity he sold he was not bound to suffer from the want of intelligence of other people. He contended that the term "oleine cheese" conveyed a determined and definite idea, and that in describing the cheese in that way the defendant had, sufficiently for the purposes of this Act, declared that the cheese was not pure cheese, but cheese with another constituent, viz., something described by oleine. Mr. Graham, the Manchester agent for Messrs. Andrew Coleman and Son, of Glasgow, said the cheese in question was manufactured at Valleyfield, in Scotland, and was made from skimmed milk with "oleo" added. He explained that "oleo," which came principally from Chicago, but was also made at Birkenhead and other places in England and Scotland, was pressed from beef fat, and was the best part of the fat, without the stearine. Witness added that Gorgonzola cheese contained a certain proportion of this oleine, or beef fat, and a great proportion of the cheese imported into England from America was also made in a similar way. Valleyfield oleine cheese had been sold in this country since 1892. Cross-examined by Mr. Bairstow, witness said the difference between tallow and "oleo" was that the former contained the stearine, whilst the stearine had been extracted from the latter. Mr. Davis, analytical chemist, Liverpool, and Mr. Bingham, provision dealer, Sheffield, also gave evidence for the defendant. In giving judgment the Stipendiary said the cheese in question, which was described as "Valleyfield Finest Oleine Cheese," was admitted to contain 24 per cent. of fat, of which fat 30 per cent. was butter fat and 70 per cent. (or 17 or 18 per cent. of the whole) beef fat. The questions that arose were, first, whether the substance was cheese as it was ordinarily known in commerce, and secondly, whether the label was sufficient notification under Section 8 of the Act that the substance was not cheese simply, but cheese mixed with some other substance. He thought the sub-

stance was not cheese in the sense to which he had referred, and as to the second point he did not think the ordinary purchaser knew what "oleine" was, or that he would consequently be afforded protection by the label which was displayed with the cheese. The Stipendiary concluded by imposing a fine of 20s. upon the defendant, and ordering him to pay the costs, which amounted to between £4 and £5. Mr. Simpson, who appeared for the defendant, asked for leave to appeal, and the Stipendiary expressed his willingness to state a case, remarking that he should be sorry to think that the defendant had not the opportunity of proving him to be wrong, if he were wrong.

DR. TEED ON THE METROPOLITAN DAIRYMEN'S PROPOSED AMENDMENTS TO THE FOOD AND DRUGS ACTS.

TO THE MEMBERS OF THE PUBLIC HEALTH COMMITTEE,
VESTRY OF ST. MARY, ISLINGTON.

I HAVE carefully considered the alterations in the Sale of Food and Drugs Act proposed by the Metropolitan Dairymen's Society, and will give my views as briefly as possible.

1. "That the sample should be divided into four parts instead of three." This would give the vendor the chance of two analyses instead of one, and he would naturally use the one most favourable to his purpose. I do not see any utility in this suggestion, and it might sometimes be used to evade the course of justice.

2. "That the person purchasing should not be allowed to retain possession of sample." This would be, in my opinion, a very inadvisable change in the law. It is desirable that samples on which legal proceedings may arise should pass through as few hands as possible, so as to diminish the chance of tampering (which has never, to my knowledge, been seriously alleged against an inspector) or accidental substitution which might arise in case two inspectors were using the same number or mark, and the two samples were placed in the hands of a third person.

3. "That the certificate should give percentage of solids and fat." A most inadvisable change. It would invite defendants to start scientific discussions in police courts with a magistrate as judge, who might be a good lawyer though an indifferent chemist; the present plan of a reference to Somerset House is much preferable as to the scientific questions, leaving the magistrate his proper function of deciding points of law and questions of fact other than scientific points. As a matter of fact the defendant can now, in all cases, call the analyst and elicit the percentage of solids, &c., by cross-examination.

4. "Division of sample into four parts at railway station." The same objection applies to this as to the division into four parts in an ordinary purchase, and it would be further complicated by the fact that it would throw an additional and irksome duty on railway porters, who, in my opinion, are not as a class the best holders of samples on which legal proceedings might arise. The railway companies would probably have something to say against this curious suggestion.

5. "That the bottles be permanently stamped with reference number." I can see no objection to this other than the increased expenditure it would throw on the Local Authorities. I do not, at the same time, see how the possibility of a mistake is in any way diminished. An inspector is quite as liable to mix two bottles with permanent marks as two bottles with temporary marks.

6. "That in the case of adulteration the vendor be immediately notified." It would, I think, be quite time to notify the vendor when a summons is decided on. The time during which proceedings may be taken might be slightly diminished, say to 21 days, and the time given to the defendant, at present 7 days between summons and hearing, might be increased, but no cases occur to me in which any hardship has occurred to the defendant through not being notified at the time suggested.

"That a standard for pure milk be fixed as 12 per cent. solids containing 3 per cent. fat." I should be sorry for dairymen if such a standard were fixed, as the majority of genuine milks contain less than 9 per cent. of solids other than fat. I cannot understand such a suggestion being here at all. It displays great ignorance as to the normal composition of genuine whole milk.

The Metropolitan Dairymen's Society object to certain of the recommendations agreed to by the Conference of Vestries and District Boards last June.

The Conference proposed the abolition of the warranty. The warranty, if cleverly worked, may render the Acts a dead letter. The dairymen wish to maintain the warranty. These three statements sum up the situation.

The Conference suggested imprisonment of offenders under certain circumstances. The dairymen prefer the present arrangement.

The dairymen also prefer that Somerset House should fix the standard of milk rather than the Local Government Board. This recommendation is rather strange, as in this document they have already proposed to fix it themselves.

In another series of recommendations emanating from the same source, which have been handed to me for comment, although they have no direct connection with my department, I think I may sum up the four suggestions as a desire on the part of dairymen to be taxed a small sum per annum, and to obtain in exchange the monopoly of the retail milk trade. If their suggestions become law, it would be impossible for a small general shop to sell milk,

as the tax, small to a large trader, would be very large to a small one.

To sum up, I should strongly recommend that none of the suggestions of the Metropolitan Dairymen's Society be supported, and have, as above, endeavoured to give my reasons for this course.

FRANK L. TEED, Public Analyst.

BUTTER AND MARGARINE.

SIR,—The "curious occurrence" reported by Professor James Long in his last notes in the *Manchester Guardian* requires some comment. He says: "At the show of the State Dairy Society, held at Pennsylvania, three lots of margarine sent to the exhibition obtained two prizes in the butter class." These were sent by a Chicago firm which "makes margarine closely resembling butter." All margarine makers do. Margarine is a substitute for butter, and is made in imitation thereof, as flannelette is made and sold as a substitute for flannel, closely imitating it in every way. "One of the judges was a public official and a scientific expert, and he not only decided upon the evidence of his senses that the margarine exhibited was entitled to the prizes over twenty samples of dairy butter, but after three weeks' consideration and analysis he deliberately reaffirms his decision, and affirms that the verdict was a right one. Now, if language has meaning and logic force, the natural conclusion of an ordinary intelligent reader would be that this statement and those facts, taken by themselves, would go to prove that margarine mixtures are more palatable, more slightly, and in every way better than butter. That is not, however, what Professor Long would wish to teach by his recital. He immediately asks that the mixing of margarine and butter should be made illegal. He asks that if the present members of Parliament do not do all in their power to alter the present law they should be dismissed and replaced by more earnest men. For what reason? In order that it may be "all the better for British farming." That is quite candid and straightforward, and I do not know that anyone should grumble at such frankness. We see, however, the cloven foot. It is that the producer may be helped along, protected at the cost of the consumer. Trade interests, party interests triumphant! A faint echo of the old cry of Protection. Where shall we end if we begin to listen to one trade after another crying out for special terms in the Commonwealth? All of the Irish butter witnesses before the Select Committee of the House of Commons during the past fortnight—with the exception of the representatives of the Cork Butter Market—ask that Irish salt firkin butter shall be allowed to contain 25 per cent. of salt and water; and all with equal unanimity denounce margarine for being coloured to imitate butter, though butter itself, for many markets, has to be coloured artificially for a great part of the year. If they were equally as candid as Professor James Long the would say, "Let us squelch margarine altogether; it interferes with our trade, lowers our prices, and diminishes our sale, especially of medium and low-class qualities." This, however, would be too glaring an argument for John Bull to swallow. He would scent trade rivalry. So the Irish and British agricultural dairy interests unite, and say: "Oh, no; we want only fair play, and our object is to stop the fraudulent sale of margarine." To that no honest man will object, least of all the margarine manufacturers. They produce an excellent article, which, as the foregoing will show, can stand well on its own merits. The honest sale of the produce will extend its use. The average weight of butter imported, speaking roughly, is valued at about £12,000,000, being something over 2,000,000 cwt. Margarine imports average over 1,000,000 cwt, valued at about £3,000,000. Thus it will be seen that for every two pounds of butter imported into Great Britain there is one pound of margarine. The calumny that has been heaped upon it for the past twenty years is astonishing. The first pronouncement was that it was made from "Thames mud and rancid grease from the knacker's yard." The latest is from a sapient butter witness domiciled in France—"that it is largely composed of the fat of cats and rats from the sewers." As a scientific matter of fact, margarine and butter both come from the cow. Butter is simply the churned fat of the milk, and margarine is the oil expressed from the fat of the cow, churned with milk and butter added. If much butter is added it is called commercially, "mixtures"; but legally anything not pure butter, and made and sold in imitation thereof, must be labelled "margarine." The best brands of oleomargarine, from which commercial margarine is made, are as sweet and wholesome as the fat on the roast beef put before the best gentleman in England for his Sunday's dinner.—Yours, etc.,
EVOLUTIONARY PROGRESS.

SALE OF FOOD AND DRUGS ACT.—The West Riding Sanitary Committee have issued a circular letter to each Urban and Rural Sanitary Authority within the Riding, calling attention to the powers vested in them under the Sale of Food and Drugs Act, and urging the authority to pay special attention to the taking of samples of milk.

It is stated that Dr. Barrett, of Willesden, who was appointed medical officer of the Ilfracombe district at the last meeting of the Barnstaple Board of Guardians, has declined to accept the post, having probably heard that the late officer resigned on account of insufficient remuneration, and that no local man will accept the post.

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THE SPREAD OF DISEASE BY OYSTERS AND MUSSELS.

DR. THORNE THORNE, in a report issued April 11, discusses the question in the following terms:—

"In a number of cholera attacks the antecedent history of the sick involved either the consumption, or the reception at their homes, of oysters or other shell-fish which had been procured at or derived from Cleethorpes and Grimsby; and under these circumstances Dr. Reece was instructed to include in his report some account of the trade in oysters, mussels, and cockles, as carried out in those places. This account shows, not only that the oyster beds at Cleethorpes are almost necessarily bathed each tide with the effluent from the Grimsby and Cleethorpes sewers, but that oysters are so stored inside the Grimsby docks as once again to expose them to contamination by sewage. The mussel trade is worked under nearly identical conditions, but the mussels are more exposed to sewage than even the oysters. The cockles are mostly used for consumption in the district, but one large bed of them is stated to be 'exceptionally exposed to the influence of Grimsby and Cleethorpes sewage.' Some of these shell-fish are not often eaten raw; others again, notably oysters, are largely consumed without cooking, and when so eaten the removal from the shell of the liquid in which the oysters lie is a thing that is generally somewhat carefully avoided. The state and sources of the 'waters' in which the oysters are grown or kept come, therefore, to acquire importance in so far as the public are concerned; and having regard to the significant indications afforded by some of the cholera histories of recent years, I cannot avoid the conviction that shell fish from Cleethorpes and Grimsby must, in some cases, remain under suspicion as having contributed to the diffusion of the disease.

"In opposition to this view, it has been alleged that, having regard to the enormous operations of the Cleethorpes oyster trade, the effects, if any, could hardly have been so limited as appears to have been the case last autumn. But this argument has not much weight when it is remembered that, with regard to oysters, for example, as a channel for conveying the infection of cholera, it would be necessary that the shell or body of the mollusc should retain some portion of the sewage, which on this coast is stated to be enormously diluted with sea water; that such sewage should happen to comprise some of the cholera infection which last autumn was passing from the sewer outfalls; and, further, that this poison should be received from some susceptible person without prior destruction by a process of cooking. The concurrence of conditions such as these in regard of persons not otherwise exposed to cholera infection is by no means likely to have been habitual; and it is the conviction that their co-existence must have been comparatively rare that prevents me from speaking in more positive terms as to the precise relation of the shell-fish trade in these Humber towns to cholera in England in 1893.

"But one thing is certain. Oysters and shell fish, both at the mouth of the Humber and at other points along the English coast line, are at times so grown and stored that they must of necessity be periodically bathed in sewage more or less dilute; oysters have more than once appeared to serve as the medium for communicating disease, such as enteric fever, to man; and so long as conditions exist such as those with which the oyster trade of Cleethorpes and Grimsby is shown to be associated, conditions which may at any time involve risk of the fouling of such shell fish with the excreta of persons suffering from diseases of the type of cholera and enteric fever, so long will it be impossible to assert that their use as an article of diet is not concerned in the production of diseases of the class in question."

BATTERSEA AND ITS ANALYST.—The Sanitary Committee reported that they had had under consideration the remuneration to be paid to C. E. Cassal, F.I.C., the public analyst, having regard to the order of the vestry that the number of samples of food and drugs to be analysed is to be increased from 100 to 300. The committee recommended that an extra £100 per annum be paid to Mr. Cassal, making his remuneration up to £200 per annum. Mr. Hall moved, as an amendment to the recommendation of the committee that Mr. Cassal be asked to send in his resignation. He argued that Mr. Cassal had already appointments at Kensington and St. George's, Hanover-square, and that the vestry would do well to employ another analyst, to give all his time to Battersea. Mr. Matthews seconded. He believed in the better distribution of wealth, and did not want to see one man do all the work, while others got none. A lively discussion followed, in which Dr. M'Manus spoke warmly in praise of Dr. Cassal, and Mr. Hall and others said they would do well to retain Dr. Cassal, whose ability was indisputable and whose authority was recognised in all the courts. Mr. Ryan strongly opposed the vestry setting up a laboratory. It would lead to a great increase in the rates. Mr. Raynor: Mr. Verdon spoke strongly in favour of an analyst for Battersea. This was a district where the food of the poor should be continually analysed. Mr. Morris pointed out that if they had constant supervision of the food they would obtain enough money in fines to pay an analyst's salary. After further discussion, the recommendation of the committee was carried by a large majority.

A CHEAP AND EFFICIENT DISINFECTANT FOR THE SICK-ROOM consists, according to Melliére (Paris correspondence *Lancet*, No. 3728, p. 277), of zinc sulphate, 1,000 g.; sulphuric acid from 5 to 10 c.c.; and essence of mirbane, 2 c.c., colouring matter (e.g., indigo blue) 15 c.g. About 5 g. of this mixture are placed in the bed-pan before its use. On contact with urine or liquid stools deodorization occurs, and the liquid excreta are at once sterilized.

SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XLII.

(Continued from page 114.)

About this test of appealing to the cow, does not that involve very careful sampling?—In case a man was convicted of having adulterated his milk, and asked for an appeal to his herd, which I think ought to be given, then upon him would rest the onus of taking the sample from the whole of one milking's produce of his cows; but the farmer by whom the consignment was made, if his appeal to the herd showed that he had supplied milk as it was given by the cows, would have branded his own produce as being of very small value in the market, and he would have advertised himself as the seller of a very low article, although he would have escaped a fine for fraud.—Do you think that would be practicable to employ that test in the case of a whole herd, say, of fifty cows like your own?—Yes, there is no difficulty about it, just as the farmer did here. It is only in the case of an appeal.—But how would you manage such testing; would you strip the cow and take the whole milk, or take a sample of the milking of each cow?—The whole mixed milk of the whole of the cows cleanly mixed. I can give a case in point which again occurred at Leek, and of which I have the shorthand reporter's note here. A fortnight ago a farmer was summoned for selling milk from which cream had been abstracted according to the analysis. It came out in the defence that this milk was the real produce of the cow, but got in this way; that the farmer half milked his cows, that half being sold, and the other retained at home for the purpose of butter. The magistrate's clerk advised the magistrates that there was not abstraction. Our inspector, Mr. Knight, who is himself a lawyer, held that it was, and his opinion made the magistrates reserve their decision for a fortnight; and they gave their judgment at the end of the fortnight, in which they held that the half milking of a cow was in their view abstraction of the cream; and they convicted.—That illustrates another point; it is hardly the point that I wanted to ask you. Supposing that in one milking of the cow you take the quart that first comes from the cow, that will give you a less percentage of fat than the last quart, will it not?—There would scarcely be any fat at all in the first quart.—That is the ground of the question I asked you as to this appeal to the cow, whether it would be possible to have an appeal to the cow unless you had very strict rules of sampling, and milking under the eye of the inspector?—Not necessarily. Why not get a witness, as we do under other legislation, who will depose that he has seen the whole of the cows milked, and that a fair sample has been taken of the whole produce, and send it under seal to the analyst. Now about feeding; are those the only experiments of feeding, and the results of feeding that you have made which you have quoted just now?—They are, so far as analysis is concerned; but my own practice tells me, as plainly as anything can tell me, that the influence of food upon cows has a very great effect, not only upon the quantity, which is great, but also upon the quality of milk.—Do you think that the choice of food has any power in determining the chemical composition of milk, that is to say, that if you give more fatty foods you get more fat in the milk?

(To be continued)

ANALYSES OF FOOD AND DRUGS IN LEEDS.—Mr. Fairley reports that, for the quarter ending March 31, 1895, the samples received have been: Milk, 45; butter, 4; butterine, 1; cheese, 2; lard, 1; treacle, 1; ground ginger, 1; whisky, 2; green peas, 1—total, 59. Two of the samples of milk were adulterated with 10 and 8 per cent. of water respectively, as compared with the lowest quality of genuine milk, and 12 were reported to be of low quality. Both samples of cheese were adulterated, the fat containing at least 70 per cent. of fat which was not butter fat. The sample of green peas was adulterated with copper, containing that metal in the proportion of rather over half a grain of copper sulphate per pound. The other samples were reported as genuine.

DR. PARKES ON MILK.—In his report on the analysis of foods and drugs during the quarter, Dr. Parkes said that samples of milk had been examined to discover whether the bacillus of tuberculi could be isolated and identified in any of the samples. In no case was this bacillus, which is regarded as the cause of phthisis and other tubercular diseases, discovered. Numerous other fermentative and putrefactive organisms were found, and in some instances in large numbers, but none of the microbes could be definitely identified as being those known to produce specific disease in man. The presence, however, of so many organisms liable to set up fermentative changes in the milk, both inside and outside the body—and this at the very coldest season of the year—should serve to impress upon milk consumers the desirability of boiling all milk before consumption.

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—*Times.*

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Food and Sanitation.

SATURDAY, APRIL 27TH, 1895.

THE OYSTER SCARES.

It is really too bad of Dr. Wynter Blyth. For a few months past we have revelled in the luxury of luscious natives at what we considered distinctly popular prices. Pre-oyster scare days saw the Sweetings and Pimm's, with eyes flashing and chests protruding, vending natives at diamond prices. If every Whitstableite were not a millionaire or a member of the House of Peers, he had enough swagger for both. But typhoid by oysters knocked the stuffing out of him, and the magnates who supplied his high-priced bivalves to Londoners, and anyone courageous enough to tackle the "Native," could have it at job-lot prices. We need not say we did not believe in the scare a jot, but we have a sincere belief in the benefits it conferred upon those who had sense enough to seize the opportunity to eat oysters costing something like their real value, for it is notorious that the high prices previously obtained for natives were a fraud upon the consumer, worked by an oyster "corner." The gang merited its punishment well, but

here comes Dr. Wynter Blyth to dissipate the scare, revive public confidence in the oyster, and unintentionally, no doubt, cause it to once more reach diamond prices. He says: "He made an attempt to discover whether any of sixty-three examined cases of typhoid fever in the parish of Marylebone last year were attributable to oysters or watercress, but, though he is of opinion that some of the illness may have been due to indulgence in these articles of food, he confesses that the figures are not sufficiently striking to justify any very safe deductions. These sixty-three patients were asked a series of questions respecting what they had eaten and drank during what is known as the period of incubation; and from their answers Dr. Blyth has arrived at the following statistics:—Drank lots of unboiled water, 13; never ate either oysters or watercress, 25; never ate oysters, 3; ate both oysters and watercress, 10; ate watercress, but not oysters, 8; ate oysters, but not watercress, 4.

We suppose it is right that truth should prevail, but we feel a little sorrow that it should in this case, for we confess we liked cheap natives, and the terror-stricken looks of friends at our temerity in eating the typhoid distributors.

POINTS FOR THE SELECT COMMITTEE ON ADULTERATION.

GENERAL BARTON and Captain Stroude Low had before them at Stonehouse, on April 19, a striking illustration of the loopholes for fraud afforded by the present Adulteration Acts.—Thomas Square, dairyman, of Plymouth, was summoned at the instance of Superintendent Roberts, inspector under the Adulteration Acts, for alleged adulteration of milk.—Mr. P. T. Pearce, solicitor, appeared for the defendant, and took preliminary objection that the certificate of the inspector was bad. In a recent case decided in the Supreme Courts, *Bakewell v. Davis*, it had been held that in the certificate the whole of the details of the analysis must be set out. They were not in this case, and the certificate, therefore, he argued, was bad.—Superintendent Roberts said the milk was adulterated to the extent of 7 per cent. of water, and that was set forth in the document.—The Magistrates' Clerk (Mr. Rundle) supported Mr. Pearce's contention that the

certificate was bad by reason of the analysis not being inserted.—The summons was dismissed.

In the above case it does not appear from the report, which we take from *The Western Mercury*, that the adulteration was denied, but the prosecution nevertheless fails because the analyst did not put upon his certificate a number of chemical terms and figures which could not be understood properly as proving adulteration, or disproving it, by perhaps one magistrate or solicitor in the United Kingdom unless he were an analyst. But Justices Charles and Wright, by their judgment in *Bakewell v. Davis*, used words that give opportunity for objecting to a certificate unless this be done, viz., "The certificate need not set out the constituent parts of the sample unless in cases of adulteration." In the case of *Bakewell v. Davis*, the analyst stated the sample contained "22 per cent. of fat less than natural." The High Court held that this certificate complied with the Act, because, as Mr. Justice Charles said, "the charge is not adulteration but is for selling weak milk," thus implying that abstraction of fat is not adulteration. The spirit of the Act was not in favour of word-splitting of this kind, but such is the case, and such preposterous nonsense as this judgment of *Bakewell v. Davis* should be a lesson to those concerned with securing better legislation to suppress adulteration.

THE SOUTHWARK SANITARY SCANDAL.

SIR FORREST FULTON is a Common Sergeant, and Londoners have during the past week had two cases showing his qualifications for that office. In the first, although warned of the consequences, he allowed two American swindlers, who had netted many thousands of pounds by the "Cash for Brains" fraud, out on bail, with the natural result that they availed themselves of his kindness and fled the country. In the second, the St. Saviour's Board of Works not long ago, at heavy expense and enormous trouble, secured the conviction of one of its vestrymen, named Winsford, for what was a grave sanitary scandal. He was ordered to pay two fines of £20 each and costs. He appealed to the accommodating Sir Forrest Fulton, who reduced the penalty to 1s. At the last meeting of the Board, Dr. Herron reported the result of Mr. Winsford's appeal.

The Chairman: It is a tremendous miscarriage of justice. After a deal of trouble and enormous expense we prosecuted this man for failing to comply with the Public Health Act, and he was fined £20 for each offence; but the judge on appeal said that if he did the work now he would inflict no penalty. We ought to consider whether an appeal ought not to be immediately lodged against such an absurd decision.

On the motion of Mr. Newton, the matter was referred to the Sanitary Committee, with power to act.

Such decisions and conduct as this are very palpable proofs that whatever else Sir Forrest Fulton may be fitted for the dispensing of justice is not his strong point.

BUTTER V. MARGARINE.

BACTERIOLOGY has now metaphorically seized butter by the throat. If milk, the Bacteriologists say, is a great vehicle of disease, why should not butter? The reasoning is fair, and there is no answer to the query. Both in Switzerland and in North Italy the scientific examination of butter has begun. The experimenters, working at widely different geographical centres, were in search of the bacilli of tuberculosis, and found them. One of the Bacteriologists, perhaps both, inoculated guinea pigs with the bacilli and caused the development of tuberculosis. Twenty samples of Swiss butter, purchased in 20 different markets, were examined, and with two exceptions only were found to contain the bacilli in question. In the case of the Italian butters, 80 per cent. of the samples contained the germ. Mr.

Van Den Bergh stated the other day that butter was inferior to margarine. We wonder if he had in his mind these bacteriological results as well as chemical ones.

ADULTERATION PROSECUTIONS.

SPIRITS.

AT Perth Sheriff Court on April 20—Hon. Sheriff-Substitute Kinloch on the bench—George Robertson, hotel-keeper, Commercial Hotel, Alyth, was charged with having, on February 20, sold to James Murray, police sergeant, a pint of whisky which was adulterated and mixed with water, being 25·8 degrees under proof. Mr. John A Stewart, solicitor, appeared for accused, who pleaded guilty. Mr. Stewart pointed out that the amount under proof was extremely small, and gave as an explanation that the bottles had been washed and had not been sufficiently dried. The certificate of the Somerset House analyst was 25·8 under proof, or eight-tenths of a degree below the legal standard. His lordship would see it was a case of carelessness in washing the bottles. The Sheriff asked how much water would be required to reduce the standard by eight-tenths? Mr. Boyes, the procurator-fiscal, said that was a question for an analyst. Mr. Stewart thought the amount would be less than half a spoonful. Seeing that it was such a trivial case, and arose in such an innocent manner, he would ask his Lordship to assize the complaint. Mr. Boyes said the whisky was bought by Sergeant Murray, and the bottle was taken from a shelf on which other bottles of the same kind were placed. The bottle was handed to Sergeant Murray without a word of explanation, and analysed by Mr. Macdougald, Dundee, and at Somerset House, the former analysis being 26 degrees under proof, which was practically confirmed by the decision come to in Somerset House—namely, 25·8 degrees. The difference was so infinitesimal as scarcely to be appreciated. He thought the explanation given by Mr. Stewart was very watery—(laughter)—and was an excuse that wouldn't hold water. (Laughter.) They must take the case as a deliberate attempt to commit fraud. The money paid was 1s. 6d. They had nothing to do with the moral aspect of the question. If a man went and bought whisky he was surely entitled to get it, and not water. It was the first time he had heard the excuse put forward by Mr. Stewart. Mr. Stewart, in reply, said if Mr. Boyes thought the difference between Mr. Macdougald's analysis and Somerset House analysis was infinitesimal, surely the difference for which his client was guilty was infinitesimal too. To ask the Court to treat the matter as a piece of fraud was truly preposterous. It was so ridiculous magnifying such a small matter that Mr. Boyes' arguments were not worthy of or requiring an answer. Mr. Boyes asked for such a sentence as would include the cost of the prosecution. The Sheriff, in passing sentence, said he could not take Mr. Stewart's explanation. It was certainly an ingenious one, but he did not think the rinsing out of a bottle would make such a difference. The sentence was £4 of a fine.

AT Derby, Harry Worthington, of the Bridge Inn, City-road, was summoned for selling a quarter of a pint of rum not of the nature and quality demanded by the purchaser, on March 13.—Mr. Gadsby (Town Clerk) prosecuted, and the case was proved by Mr. Wilkinson, Inspector under the Food and Drugs Act, who produced the analysis to show that the rum contained 19 parts of added water.—Defendant was fined 10s. and costs, £1 8s. in all.—George Thomas Bolt, of the City Arms, New Chester, was summoned for selling whisky adulterated with 8·5 of added water, on March 13.—Mr. Wilkinson proved the case, and the defendant was fined 5s. and costs, £1 3s. in all.

MEAT.

AT Manchester, on April 20, Thomas Coates, butcher, carrying on business in City-road, Hulme, was fined £12 and costs for having in his possession 324lb. of unsound meat.

AT South-West London, on April 17, Benjamin Antell, a butcher, carrying on business at 8, Grosvenor-terrace, Garrett-lane, Wandsworth, was summoned by the Board of Works for exposing for sale meat which was decomposed and unfit for the food of man.—The meat was seized by Stephen Crane, the sanitary inspector, and Mr. Denman, the magistrate, ordered it to be condemned.—Mr. Hoskins addressed the magistrate in mitigation.—Mr. W. W. Young, who supported the summons, mentioned that the shop was situated in a very poor neighbourhood.—Mr. Rose said it was essential that meat should not be sold in a diseased state, as it was likely to spread disease in poor neighbourhoods. He imposed a penalty of 40s. with costs.

AT Glasgow, on April 18, Police-Judge Morrin presiding, Richard Balloch, flesher and dealer, Cistern-lane, Falkirk, was charged at the instance of the City Sanitary Authorities with having consigned the carcasses of seven calves which were diseased, unsound, and unfit for human consumption. He pleaded not guilty. According to the evidence, the calves were consigned to a flesher who refused to take delivery of them, and while the lorry was taking the carcasses back to the railway station by way of Stirling-road Inspector Warnock, of the Sanitary Department, smelled the bad odour and seized the carcasses. One of the calves, a large one, apparently about three months old, was very much emaciated, having been suffering from severe lung disease, and was skinned and dressed in the usual trade way for disposal as fed veal. Procurator-Fiscal Neilson said it was one of the worst cases that had come under his notice. The Magistrate found the charge proved, in-

posed a fine of £10, with the alternative of 30 days' imprisonment, and granted warrant to destroy the carcasses.

At Marlborough-street, on April 14, William H. Greenslade, 26, a butcher, living in Margaret-street, Clerkenwell, was charged, on a warrant, with having exposed for sale a quantity of beef and pork which was unfit for human consumption. The prisoner formerly kept a shop in Berwick-street, Oxford-street, where he manufactured sausages and saveloys. On September 23, 1892, Mr. J. T. Folland, sanitary inspector to the parish of St. James's, Westminster, visited the premises the defendant used to keep in Berwick-street, and found underneath a bed in one of the rooms two bushel baskets filled with putrid meat. Downstairs he found another basket full of bad meat. On a dish in the shop he discovered some more putrid meat. The whole of the meat was seized and conveyed to the Marlborough-mews Police-station, where it was seen by Mr. Lushington, the magistrate, who condemned it as being unfit for human consumption, and ordered it to be destroyed. A summons was served upon the defendant, who failed to attend court when it came on for hearing, the consequence of which was that a warrant for his arrest was issued. Warrant-officer Woskett, 87 C, deposed to taking the prisoner into custody in Exmouth-street, Clerkenwell. In defence the prisoner said he never intended to sell the meat that was seized. Mr. Newton imposed a fine of 20s., with 4s. costs.

GINGER.

At Dartford Petty Sessions, Mr. William Young, grocer, of Dartford, was summoned for selling ginger which was not of the nature, substance, and quality demanded.—P.O. Crouch proved buying ½ lb. of ginger at defendant's shop, and then called in Supt. Webster, who said it was purchased for analysis, and divided the sample in three parts, in the usual way, leaving a third with the defendant's man, who supplied the article.—Supt. Webster said that he had forwarded a sample purchased to the county analyst (Dr. M. A. Adams, of Maidstone), whose certificate stated that the article consisted of 66 parts of ground ginger, and 34 parts exhausted ginger.—Mr. Ridley, who appeared for the defence, said that his client relied upon the section of Parliament which protected the seller who purchased under a guarantee. He put in the invoice of the goods, on the top of which appeared the words, "All peppers and spices guaranteed absolutely genuine."—Defendant said that he purchased the goods of Messrs. Watson and Co., of Deptford, under the guarantee as stated. He sold them in the same condition as they came to him.—By Supt. Webster: He did not buy spent ginger, and he had not seen it advertised.—The case was dismissed.

OATMEAL.

At Matlock, Isaac Buxton, grocer, Matlock Bank, was summoned for selling half a pound of oatmeal containing three per cent. of maize.—Captain Sandys prosecuted, and said he bought the oatmeal from the wife of the defendant. He saw the defendant later, and he then stated that he bought the oatmeal from Mr. Radford, the miller, of Bull Bridge, near Ambergate, and Mr. Radford afterwards stated that he acquired it from Messrs. Brown, the Derby millers. This was the seventh prosecution he had taken against retailers in which the oatmeal had been traced to have been supplied by Messrs. Brown.—Mr. Radford said he bought the oatmeal from Messrs. W and G. Brown, and he understood he was getting the pure material.—The clerk informed the defendant that all fines and costs he could recover from Radford, and Radford from Messrs. Brown.—The Bench imposed a penalty of £1 and the costs, £1 1s., and Mr. Radford paid the whole of it.

COFFEE.

At the Bradford West Kiding Court, on April 22, Christopher R. Hill, grocer, Briggate, Shipley, was summoned for having sold coffee that was not of the nature demanded. It seemed from the evidence of Messrs. Quinlan and Randerson, inspectors under the West Riding County Council, that on March 15 a pound of coffee was bought at the defendant's shop for 1s. 8d. When the coffee had been paid for the defendant's wife, who had sold it to Inspector Randerson, was told that it was wanted for analysis, whereupon she said that if she had known this she would have given him pure coffee. Upon being analysed it was found that the coffee contained 50 per cent. of chicory.—The defendant did not deny that the mixture was sold as stated, but said there was practically no demand for coffee at the shop, and that he still had some left of a very small quantity that he took over at a valuation when he bought the business in November last. He urged that the offence had been committed by his wife in complete ignorance. The defendant was fined 10s. and costs, with the option of ten days' imprisonment.

MILK.

At Gloucester, on April 19, John Searle, farmer, Barnwood, and William Cole, farmer, Tuffley, summoned at the instance of the Corporation, under the Food and Drugs Act, were fined £3 7s. 6d., including costs, each. In the first case the defendant sold milk from which 35 per cent. of fat had been extracted: in the second 9 per cent. of water had been added.

At South-West London, on April 17, Robert Day, a grocer, of 18 Hildreth-road, Balham, was summoned before Mr. Rose, at the instance of the Wandsworth District Board of Works, for selling milk adulterated with 12 per cent. of added water, and butter containing 44 per cent. of margarine.—Mr. W. W. Young supported the summonses.—The defendant was represented by Mr. Hanne, who raised a technical objection to the summonses. He contended that the Act was not complied with, as the inspector failed to inform the vendor that the butter was purchased for the purpose of analysis.—The inspector, however, stated that he explained the purposes for which he had made the purchase.—Mr. Rose overruled the objection and fined the defendant £6, with 25s. costs.—James Emerton, of Creswick Dairy, Earlsfield-road, Wandsworth, was also summoned for selling adulterated milk, the amount of the adulteration being 6 per cent.—The defendant said he was short of milk, and had to buy more.—Mr. Rose imposed a penalty of 10s., with 12s. 6d. costs.

SPIERS AND POND'S MILK.—Messrs. Spiers and Pond, contractors, appeared in the person of their Secretary, Mr. Ellis, at Southwark on April 22, to an adjourned summons charging them with a contravention of the Food and Drugs Act—viz., that certain milk sold to Mr. Treherne Wiggs, Inspector under the Act, of the Lambeth Vestry, was not of the quality and substance demanded by the purchaser.—Mr. Smith and Mr. Clarke appeared to support the summons on behalf of the Vestry; and Mr. J. P. Grain defended. At the last hearing evidence was given that the milk purchased by the Inspector at Waterloo Station was supplied to Messrs. Spiers and Pond under a contract. After a great deal of evidence, the case was adjourned for the production of the contract and warranty. The original contract and warranty were now put in, but Mr. Smith argued that, under the case of "Laidlaw v. Wilson," decided by Mr. Justice Charles, it had been held that a general warranty was not sufficient, and that a special warranty must accompany each delivery of milk. Mr. Grain said there were a number of very conflicting decisions on this point. The Act said clearly the seller was blameless if he sold under a warranty. Messrs. Spiers and Pond had sold under a warranty, which warranty was to the effect that all milk supplied to them must be pure. Mr. Fenwick said that he felt bound by the decision in "Laidlaw v. Wilson," but at the same time it had been clearly proved to him that Messrs. Spiers and Pond were not in fault for the condition of the milk purchased by the Inspector, because evidence had placed it beyond doubt that they had sold the milk to their customers in the exact condition it was delivered to them. Mr. Grain said he hoped his Worship would take a broad, common-sense view of the matter, and by the smallness of the fine merely convict the defendants of a technical offence. Mr. Fenwick fined defendants 20s. and 12s. 6d. costs. Mr. Smith, vestry clerk, applied for the costs of the Vestry, on account of the fact that defendants had instructed counsel. Mr. Fenwick: No; certainly not.

RIDICULOUS FINES.—At Portsmouth Police Court on Wednesday, before Mr. A. W. White and Mr. B. Bramble, William Milton, of 29, Cuthbert-road, milk purveyor, was summoned on the information of George Timothy Billing, Inspector under the Food and Drugs Act, for selling milk adulterated with 7 per cent. of water on March 21. Mr. G. H. King prosecuted for the Urban Sanitary Authority, and Billing, who purchased the milk of defendant's mother at the shop in Cuthbert-road, produced the medical officer's certificate that it contained at least 7 per cent. of added water. Defendant did not impugn the accuracy of the certificate, but said he sold the milk as he bought it. The Clerk (Mr. Addison): You ought to have a written guarantee from the seller. Mr. King pointed out that defendant was convicted of a similar offence in 1892. Fined 20s. and 13s. 6d. costs, or seven days' imprisonment. Mr. White: People ask for pure milk and you must give it them. Defendant: You can't afford to do it at three halfpence.—John Bernthal, milk seller, of 16, Kent-street, pleaded guilty to an information for selling milk adulterated with 19 per cent. of added water. Mr. King said defendant had previously been fined for abstracting 25 per cent. of cream from milk. Fined 20s. and 8s. costs, or seven days' imprisonment.—Richard Pharaoh, of 37, Abingdon-road, was summoned for selling milk from which 30 per cent. of cream had been abstracted. Dr. Mumby, Medical Officer of Health, proved the condition of the milk, which was sold to Sanitary-Inspector Gray. Defendant said the milk was the last he had, and the milk at the bottom of the can was naturally thin. Fined 20s. and 9s. costs.

A DAIRY COMPANY AND ITS MILK AT BLACKBURN.

At Blackburn, on April 20, George Arthur Dowse, trading as the Granville Dairy Company, William Wiggett, manager, of Bond-street, was summoned for selling adulterated milk. Mr. Withers prosecuted, and Mr. J. W. Carter appeared for the defendant.—Inspector Sosbe said on Sunday, March 31, he purchased from William Simms, one of the defendant's men in Whalley Range, a pint of "new milk," for which he paid 1½d. The sample upon analysis was found to contain "upwards of twelve parts of added water to every hundred parts of the poorest milk." In answer to Mr. Carter, witness said he had often taken samples of milk from the company's employes, and this was the only one found to be

adulterated. Witness had been informed that the milk-deliverers had to leave behind them at the dairy samples of the milk they had with them before starting upon their rounds.—For the defence Mr. Carter said that the man Simms had actually sold all the milk which he had been sent out, and had been told by the manager, Wiggett, to return to the dairy, but instead of doing so Simms did a little trading on his own account by purchasing on his own responsibility a gallon of milk from a farmer whom he met in the street, and it was a portion of that milk which was supplied to the inspector. Mr. Carter contended that it would be a monstrous injustice and a straining of the law to hold that the master was responsible for the acts of a servant acting contrary to express orders. He quoted decisions of the higher courts to support this contention, and called the manager and Simms, who confirmed the statements of fact, the manager adding that the men were strictly forbidden to buy milk from other persons. Simms said he paid for the extra gallon with his own money, and pocketed the proceeds. In cross-examination Simms said he did not know the farmer from whom he bought the milk, and was doubtful whether he would know him again.—During Mr. Carter's re-examination of the witness Mr. Withers remarked that it was abominable to try and put the blame on another person.—Mr. Carter said he did not care whether it was "abominable" or not. He was only eliciting the facts.—Mr. Withers: I don't say it is abominable on your part; you need not get angry.—Mr. Carter: Well, I won't permit such observations, and I won't have them.—Mr. Withers: Then I'll not say another word.—The Bench convicted, and imposed a fine of 20s. and costs, their written decision stating that the evidence had not satisfied them, in the absence of the farmer, that the milk sold was not part of that supplied by the company to Simms.

SPENT GINGER PROSECUTION AT DARWEN.

At the Darwen Borough Police-court, on April 18, R. Jones, grocer, Duckworth-street, was summoned for an offence under the Food and Drugs Act. Mr. Broadbent said the defendant was summoned for selling ginger to the prejudice of the purchaser. Whereas the article should have been pure ginger, it was found to contain 25 per cent. of spent ginger. Ginger in its pure state was used by mineral water manufacturers, and after they had used it it was re-sold to the trade as spent ginger. The case was heard three weeks ago, and was then adjourned because the defendant alleged that he held a warranty from the person who had sold the ginger to him. If that were so he would be protected by the Act. He did not suggest that the defendant knew at the time he was selling anything but pure ginger.—Mr. Jones produced a warranty, but it was pointed out that the date did not agree with that given by witness. He was asked if the warranty was really got before the ginger was bought.—Defendant: I got it after I bought the ginger. The warranty was given after the sample had been taken.—Mr. Broadbent: What made you get the warranty after the sample had been taken?—Defendant: Because it was warranted to me verbally.—Was it obtained for the purposes of this case? Yes.—A fine of 10s and costs was imposed.

A DECISION AFFECTING GROCERS.

At Altrincham, on April 22, Joseph Rogerson, grocer, Broadheath, was summoned for selling an article, butter, which was not of the substance or quality demanded. The case was proved by Mr. Roger Hind, inspector to the Cheshire County Council, who purchased 3lb. of butter, which on analysis turned out to be margarine. Mr. R. Brown, of Stockport, who appeared for the defence, contended that, under the 25th Section of the Act, if the defendant purchased the article in question with a written warranty, and that he sold it to the prosecutor under that belief, he should be only liable for costs. Quoting the case of Laidlaw and Wilson in the higher court, he contended that the word warranty need not be stated, that it was held over and over again that there was no magic in the word, and that the invoice could be taken as evidence of warranty. In the present instance the butter was invoiced as Kiel, and the margarine ordered at the same time was invoiced as such. It must therefore be taken that the word Kiel meant Kiel butter. The bench upheld this view, and dismissed the case on payment of costs, 15s. 5d.

SHARP PRACTICE BY THE BUTTER ASSOCIATION.

At Greenwich, on April 19, William Thorp, of 49, Church-street, Greenwich, was summoned before Mr. Marsham by John Moore, on behalf of the Butter Association, in two cases, the first for selling margarine in a paper upon which the word "margarine" was not printed in capital letters a quarter-inch square, and the second for exposing margarine for sale without having attached to each parcel, clearly visible to the purchaser, a label marked in printed capital letters, not less than 1 1/4 in. square, the word "margarine."—Mr. Ricketts prosecuted.—In the first case, on the sealed sample being opened in court, it was found that the word "margarine" was upon the inner paper, but it was contended that it should have been upon the outer wrapper. It was, however, admitted that the stamp on the inner wrapper was a good one. This summons was allowed to drop.—In the second case it was shown that four boxes of margarine were piled in twos, and that the word "margarine" was prominently placed across the two bottom boxes. There was no margarine label on the top boxes.—The contention for the defence was that the four boxes were really one parcel, but Mr. Ricketts pointed out that if it were held to be so, then 500 boxes might be piled and called one parcel.—Mr. Marsham held that the upper boxes should have been labelled, and fined the defendant 10s. and 12s. 6d. costs.

CURIOUS DRUG CASE.

At North London, on April 18, Mr. J. Dwyer, chemist, of 128, Ball's Pond-road, appeared to answer an adjourned summons taken out at the instance of the Islington Vestry for that he did on March 14 last sell to the prejudice of the purchaser a certain drug, to wit *liquor iodi*, which showed a deficiency of 45.2 per cent. of iodine.—Mr. Hoare appeared for the vestry; Mr. Yelverton, barrister, defended.—The deficiency having been proved by the analyst's certificate, and Dr. Harris, the medical officer for Islington, Mr. Yelverton, in defence, said that Mr. Dwyer was a most respectable chemist. He had been in business 30 years, and never until the inspector called had he been asked for this drug. The iodine it contained took hours to dissolve, and it seemed very probable that when the sample was divided into three parts as required by the Act, this being done immediately after the preparation was made up, that one or two of the parts did not get their fair share of the iodine.—The defendant gave evidence to this effect.—Mr. Hoare quoted "Squire's Companion to the British Pharmacopœia," to prove that the iodine could be made to dissolve very rapidly.—The defendant said he believed in "Squire," but he did not adopt the method Mr. Hoare had quoted.—Mr. Hoare suggested that there should be a further adjournment, and that the third sample should be analysed. After some discussion Mr. Yelverton said the cost of a further adjournment would be so great that his client would submit to a conviction and pay a fine of 1s. with 5s. costs.—Mr. Lane agreed to this, but expressed surprise that the defendant should have consented to this arrangement after the evidence he had given in the witness-box.

MILK AND AN EX-TOWN COUNCILLOR.

At Ruthin Petty Sessions, Hugh Hughes, Penstryt, Ruthin, was summoned for selling milk adulterated with water.—Supt. E. Jones, of Denbigh, said it was submitted to Mr. Lowe, county analyst, Chester. When witness bought the milk from the defendant, he noticed Mr. Hughes serving some customers from the same tin as he had been supplied from. Mr. Lowe's certificate was put in. It was to the effect that the sample contained not less than 17 per cent. of added water, by the Somerset House standard, but if the milk were of average quality, upwards of 20 per cent. of water had been added. No change had taken place in the constitution of the sample. For the defence, Mr. Roberts proposed to put in a petition which he said was signed by all Mr. Hughes's customers, who expressed themselves as quite satisfied with the milk supplied to them. He had been in the habit of giving very good measure to his customers.—Supt. Jones objected to this document being put in, as it was not evidence. If any customer wished to give that evidence, let him come forward to the witness box, and then he might be cross-examined.—Mr. Edward Roberts did not dispute the accuracy of the analysis, but he denied that Mr. Hughes had been in the habit of watering the milk he sold, and he urged that a small penalty was all that should be inflicted.—The Warden: Is not your client a member of the Town Council of Ruthin?—Mr. Edward Roberts: Not now, sir He has been.—The Warden, in announcing the decision of the Bench, said: We consider that you have been guilty of a very grave offence. We have no judicial knowledge of what you have been doing in the last ten years, and we take into account that it is ten years since you were fined for a similar offence. We considered whether we should not inflict a severe penalty. We also bore in mind that you have occupied a public position in this town, a member of the Town Council, and that people in your position ought certainly not to act as you have done in defrauding the public. This is the second time you have been convicted of defrauding the public. You will pay a fine of 5s and costs, and we recommend you to be very much more careful in future. I hope the Superintendent will take frequent samples of milk for analysis. In all probability if you are brought up here again the penalty will be still heavier.—Mr. Ll. Adams: The costs are 18s., including 10s. 6d. for the analyst's fee; 5s. 18s. altogether.—Mr. Hugh Hughes: I cannot pay it.—The Warden: We will give you a month to pay the fine and costs.—Defendant: I cannot pay it then.—The Warden: Very well. You must take the consequences.—Supt. Jones: I apply for a distress warrant.—The Warden: We adjourn the consideration of that application for a month.

ADULTERATED MILK IN NOTTINGHAM.

AN INTERESTING POINT.

ENDERBY HANDSLEY, of 160, Waterway-street, was summoned on April 19, for selling on March 19, a pint and a-half of new milk adulterated with 50 per cent. of added water.—Mr. H. P. Day again prosecuted, whilst Mr. Clayton defended.—The summons was answered to by Mr. George A. Dowse, who, it was explained, had taken over the business of the Callow Park Dairy Company, which still, however, went under the name of Enderby Handsley.—Mr. Betts, inspector of nuisances, deposed to seeing the defendant's man selling milk in the Hartley-road on the morning of March 19. On the can the man was carrying the name of E. Handsley appeared. Witness bought a pint and a-half of the milk, dividing it into three portions as required by the law. The analyst's report showed that the milk was adulterated with 50 per cent. of added water.—In answer to Mr. Clayton, witness stated that he had taken eight different samples of milk from eight different people between 7.30 and 11 o'clock on the morning in question. He denied, however, that there could have been any possibility of his having confused the samples, though they were placed in the same bag. Other

samples of the Callow Park Company's milk, witness was understood to admit, were taken that day and were all right.—Mr. Clayton, before proceeding with his defence to the case, raised the initial objection that it was necessary the person against whom the proceedings were instituted should have been informed that the milk was taken for the purposes of analysis by the public analyst. No evidence of such notice having been given to the defendant had been adduced.—Mr. Day observed that such a notice was not necessary. Samples of milk were continually taken for analysis at railway stations when no one was present.—Mr. Clayton said that cases like that mentioned by Mr. Day came under a different section of the Act, the section which dealt with goods in transit. The present defendant was not the actual seller of the milk, and before he could be convicted evidence would have to be given that he had a guilty knowledge of any adulteration of the milk. It might be that a servant would adulterate milk after receiving it from the master, but under such circumstances the master would not be criminally responsible for the act of the servant unless done with his authority.—Mr. Day said one must be responsible for a name one assumed.—Mr. Clayton, proceeding, said if his objections were not upheld he had a complete answer to the charge. The sample of milk taken by the inspector was sent by Mr. Handsley to an analyst in London, who found it pure. Moreover, when the milk was sent out by Mr. Handsley's manager a sample of it was taken, and that also had been analysed and was found to be pure.—The Bench, after a short consultation, held Mr. Clayton's objection to be good, and dismissed the case.

WORCESTERSHIRE INSPECTORS GIVE MR. HUDSON THE LIE DIRECT.

A QUARTERLY meeting of the Worcestershire Sanitary Inspectors' Association was held in the Shire Hall on Saturday afternoon, Dr. Fosbroke, County Medical Officer of Health, presiding. Letters of apology were received and read from Sir Douglas Galton (president) and Mr. Willis Bund (vice-president). The inspectors present were: Messrs Parkin (Droitwich), Mallard (Bromsgrove), Houghton (King's Norton), Cottle (King's Norton), Steadman (Kidderminster Rural), Cowderoy (Kidderminster Borough), Deaks (Sutton Coldfield), Lewis (Malvern), Dunlop (Upton-on-Severn), Turner (Tewkesbury), Brooks (Stratford-on-Avon), Moulson (Pershore), and others.

After the usual business had been transacted, the Chairman of the Council (Mr. J. T. Cowderoy) referred to the recent serious allegations which had been made by Mr. James Hudson, in his evidence before the Select Committee of the House of Commons, on food adulteration, that the inspectors were known in almost every district, and when one of them asked for a pound of 10d. butter, the shopkeeper either gave them sixteen-penny butter, or else put a half-sovereign in the scale. Mr. Hudson also stated that the inspectors were open to bribery. Mr. Cowderoy proposed the following resolution, which was carried unanimously, and a copy, signed by the president and secretary, forwarded to Sir Walter Foster, M.P., the chairman of the committee before which the evidence was given:

"That the council and members of the Worcestershire Association of Sanitary Inspectors, assembled at the Shire Hall, Worcester, on April 13, 1895, are unanimously of opinion that the statements reported to have been made before the Select Committee of the House of Commons on fruit products, on March 27, 1895, by a Mr. James Hudson, are derogatory to the inspectors who carry out the Food and Drugs Acts, are at variance with fact, and, further, they hope that the Select Committee will require the names with their appointments, and the evidence which the witness said could be produced in support of the statement."

There is just as much likelihood of Mr. James Hudson producing evidence to substantiate the slanderous attack upon Food and Drugs Act inspectors, as there is of the sky falling and making the catching of larks easy.

FARMERS AND MILK ADULTERATION.

BEFORE the Potteries stipendiary (Mr. Harold Wright), at Hanley, on April 22, John Beckett, farmer, Bechton, Cheshire, was summoned, at the instance of the Hanley Corporation, for a series of offences under the Food and Drugs Act. Mr. A. Challinor (town clerk) appeared for the prosecution. The defendant was charged upon three summonses with having supplied under contract, to the Midland Dairy Company, milk which was not of the nature, substance, and quality of the article demanded. He was further charged with giving with such milk a label which falsely described the article so sold, and with giving a false warranty in writing in respect of such milk. The Town Clerk explained that the defendant was summoned in respect of three samples of milk which were procured by one of the inspectors of the Town Council, at the Hanley railway station, while the milk was in course of delivery to the Midland Dairy Company in pursuance of a contract which the defendant had entered into with the company. The course of procedure adopted by the inspector was in accordance with Section 3 of the Food and Drugs Act, 1879. A short time ago a summons was taken out against the Midland Dairy Company for milk adulteration, but it was withdrawn on the ground that samples of milk supplied by the present defendant to such company had been found to be adulterated. Each morning, in pursuance of his contract, the defendant sent to the Midland Dairy Company, by rail, from Alsager to Hanley, several churns of milk, and attached to each churn was a label bearing the words, in writing, "The contents of this churn are warranted to

be new and pure milk," and signed "J. Beckett." On Saturday, the 23rd ult., the inspector met the consignment of milk at Hanley railway station, and took a sample from each churn. These samples were submitted to the public analyst, who certified that one contained 3 per cent. and the other 8 per cent. of added water. On Sunday morning, the 24th ult., the inspector again took a sample of milk from each churn, and, according to the certificate of the analyst, one was adulterated to the extent of 10 per cent. with added water, while the other was pure. Two samples were taken on the morning of the 25th ult.; but in both these cases the milk was certified by the analyst to be pure. On being served with the summonses, defendant wrote to the Town Clerk, stating that he did not intend to defend the cases, as the adulteration of the milk was caused by the frost having burst his refrigerator or milk-cooler, when the same was not in use in the winter, thereby allowing a small quantity of water to mix with the milk.—Defendant elected to give evidence, and offered this explanation as to the bursting of the refrigerator as a defence to the charge. He said that the admission of the water to the milk was entirely an accident, and that there was no intention on his part to defraud. He only discovered the burst in the refrigerator on the Sunday, and at once repaired it, and the milk sent out the following day was found to be pure. Defendant admitted that he had been twice previously convicted of milk adulteration at the Manchester Police-court, and that he was fined £15 and costs on each occasion. The Stipendiary said that in view of the facts of the case he could not believe the defence offered by the accused. There could be no doubt that the defendant must have known that the water from the refrigerator was running into the milk, and he must have had some reason for stopping it on the Sunday. The only common-sense view of the matter was that his reason was an intimation obtained in some way that samples of the milk were being taken at Hanley. The case was a very bad one, especially after the previous warnings the defendant had received. Treating the false label and the false warranty as practically one offence, he fined the defendant £10 and costs in each of four cases—£43 19s. altogether. The money was paid.

THE BUTTER ASSOCIATION'S METHODS.—SEVERE MAGISTERIAL CENSURE.

AT the Thames Police-court, last week, Edward Williams, trading as the World's Tea Company, of Christ-street, Poplar, E., was summoned before Mr. Mead for, being a person dealing in margarine, he did, contrary to Section 6 of the Margarine Act, 1887, expose for sale by retail a certain quantity of margarine without having attached to each parcel a label marked in printed capitals "margarine." Mr. A. J. David appeared for defendant. Mr. Moore, who prosecuted on behalf of the Butter Association, called Inspector David Toler. This witness deposed that on February 16 he went into defendant's shop, and saw what appeared to be a pile of rolls of butter on the counter. He purchased a pound and was served in plain paper. He would swear there was no label with the word "margarine" on it. By Mr. David: He would pledge his oath there was no margarine label on the stuff. He did not think the margarine was on a dish, but believed it was on the counter. He called the attention of a police-sergeant to the bundle, and believed there was a margarine label on the stuff which was in the window. The sergeant did not call his attention to the fact that there was a label on the margarine which was on the counter. He did not make a complaint to the police-sergeant about the bundle in the window. The rolls there were wrapped up in muslin so as to represent country produce. He did not tell the sergeant that there must be a margarine label on each roll. Inspector Moore counted the number of rolls. He did say to the sergeant, when he went to the window, "Look here; there's another lot." Inspector J. Moore said there was no margarine label on the counter. The boy refused to give the name of the proprietor, and that was why the sergeant was sent for. He would pledge his oath there was no label on the counter. He told the police-sergeant to make a note of what transpired. The sergeant told the boy if he did not give the name he would be taken to the police-station. Witness did not get cross and say he was not going to wait until the manager arrived. Witness had a good memory, but did not pay attention to everything that was said. He told the assistant he was an inspector, but did not wish them to understand that he was an inspector of police. Police-sergeant S. Ley, 30 K, said on the day in question he was called to the premises of the World's Tea Company, where he saw Toler and Moore. The former said they wanted the name of the proprietor of the shop, and the assistant refused to give it. There was no label on the stuff on the counter, but he saw a label "margarine" on the stack underneath that. There was no label on the 7lbs. and that was what Toler specially drew his attention to. By Mr. David: There were two stacks of what was apparently butter on the counter. One was a solid stack, and the other one was made up in rolls, wrapped up in linen. On the solid part one of the labels appeared at the bottom. The label was clearly visible to anyone who chose to look, and he pointed it out to Toler. The latter called his attention to the stack in the window. Toler said the Act required that each parcel should be labelled, and the one label was not sufficient. The assistant told witness that he had sent for the manager. Toler said, "No waiting; we have been waiting long enough." Mr. David submitted there was no case for him to answer, after the evidence of the sergeant, who had stated the label was there. The

object of the statute was that attention should be called to the fact that the stuff sold was margarine, and that had been done. There was no dispute with regard to the measurement of the letters on the label, which were an inch and a-half square. Moore admitted buying the stuff as margarine, and no deception had been practised on him. Mr. Mead, interposing, said the question was, if a child had gone into the shop, whether margarine would not have been passed off on it as butter. There had been no fraud in the present case because there had been no opportunity. Mr. David, continuing, said it was an exceedingly inconvenient thing for a shop-keeper not to have his commodities handy, and the margarine had been put into rolls so as to facilitate the serving of customers. His client only sold margarine at the ordinary price, and when the article was actually sold a stamped label was put on it. Toler and his companion intended to convey there was no label on the margarine, while the police-sergeant had seen it. The officer called Toler's attention to it. Toler's argument that every pound or half-pound must have a label on it was nonsense. He contended that what had been done was an absolute compliance with the Act. Toler had told them he said the margarine was for analysis; but it was necessary for him to go further than that. Mr. Mead said the Act was complied with on the last occasion. He could cross-examine Toler. Toler was then recalled, and said he did not take a note of what was said. He made a note of what he saw. When he received the margarine he told the assistant he was an inspector of the Butter Association, and had purchased it for analysis by the public analyst. By Mr. Mead: What the sergeant said was correct about the block and rolls of margarine. He did not see any label, but after what the sergeant had said would not like to swear there was not one. He had sworn there was not one. Mr. Mead, in giving his decision, observed that, to say the very least, the witnesses representing the Butter Association had been extremely rash in the evidence they had given. The evidence of both the inspectors was to the effect there was no label, whereas the sergeant, whom he believed, had clearly proved there was one, and such conduct on the part of the former led one to distrust their evidence in other cases. The question he had to decide was whether any reasonable person would come to the conclusion the word "margarine" would apply to the rolls on the top of the block. He had come to the conclusion they would not. Had the label been stretched across the whole he was not prepared to say that would not be a compliance with the Act. If tradesmen found it impossible to have labels attached to small parcels, then their remedy was not to break the bulk up into such. If what had been done in the present case was allowed to go on it would open the way to deliberate fraud, and he was inclined to think that was the intention in that case. He had come to the conclusion that a breach of the Act had been committed, and defendant would be fined £3, but no costs would be allowed. In reply to Mr. David, Mr. Mead said as at present advised he should decline to grant a case, but if another application were made he would be prepared to reconsider the matter, although he felt very clear with regard to the decision he had given.

COFFEE.

REMARKABLE CONFLICT OF EVIDENCE.

ENOCH WOOTTEN and Co., provision merchants, of Trowbridge, were summoned by Mr. F. Beardale, inspector for the Wilts County Council, at the Trowbridge Petty Sessions, recently for having sold coffee not of the nature and substance demanded.—Mr. P. W. Cruttwell appeared for the prosecution, and Mr. C. J. Jones for the defendant. Mr. Beardale stated that he visited defendant's shop on the afternoon of January 30th, and asked for half a pound of shilling coffee. He received a tin which was wrapped in two papers. The assistant said nothing whatever. Witness said he had bought it for the purpose of analysis by the Public Analyst, and the assistant immediately replied, "This contains chicory, you know," and then referred witness to Mr. Wootten at the opposite counter. Witness went to him and told him the purpose he had bought the coffee for. He replied, "Oh, it is all right; Peek Brothers will defend the case for us." Witness sealed up the tin in defendant's presence and forwarded it to the County Analyst, who certified that the substance contained 10 per cent. of coffee, and 90 per cent. of chicory.—Cross-examined: Smith (the assistant) did not tell him that he had no coffee at 1s. per lb., and he did not say that the tin contained chicory before he handed it over. Witness did not know if he had had a conversation with Mr. Jones on the matter, nor could he remember if he had said the case was brought for the purpose of raising the question of fraud. He swore he did not tell Mr. Jones that the assistant told him, before he bought the tin, that it was a mixture of chicory and coffee. He could not read the printing on the tin owing to the thickness of the wrapper, and could not see it was sold as a mixture.—James W. Gatehouse, public analyst to the Wilts County Council, said when he received the tin from Mr. Beardale it was covered with a paper of sufficient density to prevent the reading on it. It was fixed permanently. He received a note from Mr. Beardale not to remove the paper. He had to cut it with his knife, and then the paper did not fall off. He analysed a portion of the contents, and found them to be 90 per cent. of chicory and 10 per cent. of coffee.—By Mr. Jones: He did not pursue the system laid down by the Somerset House authorities, as he found, in his hands, it did not yield concordant results. By his own system he could get within 5 per cent. The Somerset House authorities said the mixture contained about 66 per cent. of chicory and about

33 per cent. of coffee, a proportion of one-third of coffee to two-thirds of chicory.—Edward W. Williams, law student, said he visited defendant's shop that morning and bought the tin of coffee produced for 6d. There was no wrapper round it.—By Mr. Jones: He was told it was a mixture of chicory and coffee.—Mr. Jones, for the defence, said there was no concealment. The Inspector applied for half a pound of coffee at 1s. per lb., and the Bench would be satisfied that he was told that Mr. Wootten had no coffee at that price, but that he could have a mixture of chicory and coffee. This was repeated twice, because the first time the Inspector appeared to take no notice of it, and then it was purchased the mixture. It did not matter so much whether there was a label on the tin or not, provided notice was given before the sale was effected; if verbal notice was given before the sale the seller could not be convicted. Though there was a wrapper on the tin, he (Mr. Jones) ventured to say that any person could see the word "mixed" on it. The case for the prosecution rested entirely upon the evidence of Beardale, and there was no doubt he had contradicted himself in cross-examination, and in the material matter with respect to a most crucial question.—Mr. Cruttwell asked if his friend wished the case dismissed on the ground that there was no evidence to bear it out.—Mr. Jones said he was going to ask the magistrates to decide that there was no sale of coffee as coffee, and to contend that full information was given to the Inspector by the assistant, Smith, as to the nature of the article which he afterwards sold to Beardale. He met the case upon its merits, and if his friend had intended to allege fraud upon the vendor the summons should have been in a different shape.—Sydney Smith, assistant, said Mr. Beardale asked for a half-pound tin of 1s. coffee. Witness said it must be coffee and chicory at that price. He made no reply, and witness repeated the statement. The warehouseman was close beside, and an assistant named Deacon was at the back of the shop. When Mr. Beardale spoke of having the article analysed, witness referred him to Mr. Wootten, who asked him if he knew what he was buying, and he said that he did.—Enoch Wootten, the defendant, said when Mr. Beardale came in he asked for sixpenny coffee. Smith replied that they had none, and he repeated the remark, saying "Will you have chicory and coffee?" He replied, "Yes, I'll have that." Defendant refused to have the mixture divided, and told Mr. Beardale he had got what he wanted. The price they sold pure coffee at was 1s. 4d. and 1s. 8d. The wrappers were put on by Messrs. Peek. They paid 9d. per lb. for the mixture, with carriage. When Mr. Beardale came in the shop, later, he said he was going to fight the case on the label, to see whether it was a sufficient guarantee for chicory.—Herbert Abrams, warehouseman, in the employ of defendant, said he was present on January 30, when Mr. Beardale came in. He was positive that he was then told he could not get coffee at 1s. a pound, but must have chicory and coffee.—The magistrates retired, and on their return the Chairman said they were of opinion that Mr. Beardale was not cautioned before he purchased the mixture, and they should give a decision in his favour. Mr. Wootten would be fined 10s., but with regard to the costs, they considered there was a discrepancy in the evidence, and each must pay his own.—Mr. Jones: Who is to pay for the analysis at Somerset House? The Chairman: The person who applied for it.—Mr. Jones then said his duty was to apply for a summons against Mr. Beardale for perjury. He thought it well, as they were all assembled, that he should make a public application for it. He would also prepare a written application, and the Bench said they would then consider it.

APPEALS.

TWEDDLE v. GATESHEAD MAGISTRATES.

WM. TWEDDLE, a milk dealer of Gateshead, appealed against a fine of 10s. and costs imposed upon him by the Gateshead magistrates for adulterating milk contrary to the Food and Drugs Act, on the 17th January last. Mr. Meynell was for the respondents, and Mr. Temperley for the appellant.—Mr. Meynell stated that Mr. Jours, who was the Food and Drugs Inspector for the borough of Gateshead, was led from a complaint he received to visit the premises of Mr. Coates, a milk purveyor in Abbey-street, when he saw a four-gallon can of milk belonging to Tweedle just about to be delivered at the shop of Coates. He procured a sample of the milk, which was divided into three parts. One of these was given to Tweedle's lad, and the remaining two he kept in his possession. The sample was submitted to Mr. Pattinson, public analyst, who certified that the milk contained 24 per cent. of added water. A peculiar circumstance in the case was that the appellant had sent his sample of milk for analysis to Mr. Procter, an analytical chemist, of Newcastle, with the result that he certified it to be absolutely pure. But he might say that both analysts were agreed that the milk they severally examined was not from the same bulk, so that the inference was that the bottle held by the appellant had been tampered with after it left the hands of the inspector. Evidence was taken on both sides. For the defence it was urged that the sample bottle had not been tampered with, and also that as the milk had been delivered to Coates the appellant was not liable. The Bench decided against the appellant on the latter point, and upheld the decision of the magistrates with costs.

THE HOLBORN LATE M.O.H. AND SANITARY PROPERTY.

At North London Police-court, on April 17, Dr. Septimus

* BOYRIL, *

The Vital Principle of PRIME * OX * BEEF.

Contains **50** times more Nourishment than ordinary Meat Extract,
Meat Essence, or Beef Tea.

NOTE.—BOYRIL is not a clear Beef Tea. A Nutritious Clear
Beef Tea is an absolute impossibility.



BOYRIL furnishes to the System a Scientifically Perfect
Food in a condition capable of assimilation by the feeblest stomach.
It is prescribed by Leading Physicians, and for Culinary Purposes
it is rapidly displacing all ordinary Extracts of Meat.

Gibbon, late Medical Officer of Health of the Holborn District, was defendant in a case in which the Poplar District Board of Works alleged that he had failed to comply with an order of a magistrate to put certain house property, of which he is owner, in proper sanitary condition. The defendant contended that he had tested the pipes and found them perfect, but against this the sanitary inspector said he had the ground opened and the drain pipes exposed, and the disclosures made were of broken pipes patched and of uncemented joints. Mr. Lane: That is an answer to the doctor's criticism of the test applied. Dr. Talbot, Medical Officer of Health of the Poplar District, said he inspected the drains in question that morning, and found them in the same defective condition as when the orders were made. By Dr. Gibbon: The majority of the drain pipes were not properly socketed. The Defendant: You have been summoned before, and I shall summon you for trespass on my premises and breaking open my pipes without giving me notice. I consider it sharp practice. Mr. Lane: I don't consider it sharp practice. The defendant called his surveyor to bear out his contention that all the drains were in good order prior to the breakages, which he alleged were consequent on the opening of the ground. The inspector denied that they were recent breakages, and added that there was no cement in the joints; and a stoppage in the drain pipes would cause the sewage to run through and soak into the earth. Mr. Lane said he would go and see the place for himself, and adjourned his decision.

On the 20th, when the magistrate was about to start on his inspection, Dr. Gibbon appeared and said that he had made a further examination, and had decided to relay the drains. The magistrate on that did not make his visit. Mr. Lane imposed a fine of 5s. in each case with 2s. costs of the summonses, and £6 8s. costs of the Board of Works—£8 11s. in all.

CORRESPONDENCE.

MR. HUDSON'S BRIBERY ALLEGATIONS.

To the Editor of FOOD AND SANITATION.

SIR,—I should like to draw the attention of the secretaries of the Sanitary Inspectors' Association throughout the kingdom, and the inspectors themselves, to a few important facts bearing upon the recent attack on their integrity, by the senior member of Messrs. Hudson Bros.' firm, before the Select Committee on food adulteration.

Mr. Hudson is reported to have said that "the inspector is known in almost every locality, and when he asked for a pound of 10d. butter, he was given a pound of best fresh which cost 1s. 4d., or else a half-sovereign was put into the scale."

Mr. Frye then said: "You might ask him if he knows a case"; but this question seems to have been ignored by the Examiner.

Mr. Kearley then said: "Is the inference that these inspectors are open to being bribed?" "Undoubtedly. These men were open to be 'squared.' One of the members of the Butter Association could give evidence to that effect."

Now, what the inspector ought to ask is, What would be the source of the information of this member of the Butter Association? Would he depend upon evidence supplied to him by the two Irish "Inspectors" employed by the Butter Association?

If so the evidence, to my mind, is not reliable, as these men are not trustworthy. Mr. Bros, the magistrate at Clerkenwell, did not trust them; Mr. Newton, the stipendiary at Marlborough-street, refused to accept their evidence; Mr. Corser, at Worship-street, had grave suspicion of them; and Mr. Mead, at Thames, delivered himself of the following strong remarks. He said: "To say the least, the witnesses representing the Butter Association had been extremely rash in the evidence they had given. The evidence of both the Irish 'Inspectors' was to the effect that there was no label; whereas the sergeant, whom he believed, had clearly proved there was one, and such conduct on the part of the Butter Association's 'Inspectors' led one to distrust their evidence in other cases."

Now, Sir, let the whole body of Sanitary and Food and Drugs Inspectors rise and protest against this statement of Mr. Hudson's, and demand to know his informer, and then in turn the source of the "Member of the Butter Association's" weighty evidence, and, if it be supplied by these "inspectors," make them produce some substantial proof if they can.

I am one of those who have no faith in the serious allegation, and shall wait with some interest to see the murky atmosphere cleared.—Thanking you in anticipation—Yours, &c.,

"A LOOKER-ON."

THE LINCOLNSHIRE CINNAMON CASE.

To the Editor of FOOD AND SANITATION.

SIR,—In your issue of April 13, there appears a report of a case tried before the Lincolnshire magistrates, in which it stated that a sample of cinnamon, which the Public Analyst (Mr. Southwell), had reported on as being adulterated, had been also submitted to "one of the analysts of the Royal Agricultural Society," who had given an opinion contrary to that of the Public Analyst.

Inasmuch as I am the only analyst of the Royal Agricultural Society, and as the sample in question was not examined at all by me, I shall feel obliged by your kind correction of the statement made in your last issue.—Yours truly,

AUGUSTUS VOELCKER.

SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XLIII.

(Continued from page 122.)

I certainly think so. It is difficult to prove it. In point of fact I asked the Woburn people to institute experiments down at Woburn, and Dr. Viocleker tells me this is nearly impracticable. I have it in his handwriting here, that you require at least 25 cows in each lot under feeding experiments continued for a long time in order to give any practical results of feeding experiment.—Is it your opinion that the feeding of cows has such an immediately large effect upon the proportions of the fat that it would prevent the fairness of working a standard?—No, I think not.—Could a man feed up his cows for a few weeks and artificially raise his standard, in order to advertise himself; and if we took that as the standard for the whole country should we be inflicting great injustice upon others?—Does your question point to the appeal to the cow; whether it would be possible for a man to alter the constituents of his milk during the time that the appeal was held?—The appeal would be only one element. In case of any analysis arriving at the constituents of the milk, the question is whether the food affects the milk so rapidly and largely that the standard is illusory; if one man, by feeding highly, naturally produces a high standard of milk, and another man who is compelled from circumstances to feed in a less satisfactory way, produces milk which would be proportionately lower?—I do not think that the effect of a change of food would be operative very quickly. You require an alteration in the cow herself under the influence of that food, which I think would not come (this I cannot prove) within a few days. The state of health of the cow, and her general production of flesh under a nitrogenous food, would be continuous under continuous good feeding, and it would not answer to a change of food in the course of a few days.—You do not think that it would have such an excessive effect that it would make a standard impracticable to work?—I think not, so long as that standard was not fixed rigidly high.—You think that 3 per cent. of fat with an appeal to the cow, that is to say, allowing a small man to prove that he was not adulterating by an appeal to the cow, would sufficiently cover all cases?—I think that there is absolutely no risk to honest producers of milk with a standard so low as 3 per cent.—I do not know whether you can throw any light on the milk-testing trials of the Dairy Farmers' Show; do you attach any importance to the very high figures that they have arrived at in those shows?—Not very much.—Do you think that the cows may have been forced in those cases?—I freely grant that the natural capacity of cows varies very greatly, quite irrespective of their food, and that a skilled farmer with the help of skilled chemists may get individual cows that are immensely superior to the ordinary run of cows. That, I take it, is how it is that the show cows show such an abnormal quantity of fat.—And those very high and exceptional figures do not shake your opinion that the average cow would produce under fair circumstances at least 3 per cent. of fat?—I have not the least doubt of it myself, speaking of a number of cows together. How it would be with a person who kept one or two cows, I cannot tell, the average would be so little influenced by the mixture.—Sir Mark Stewart: Of course there are different families in the cow tribe, some of which yield very much richer milk than others?—That is so; in all that I have said I have entirely excluded from my mind the Channel Island cows.—Have you had any experience of Ayrshire cows?—I have not.—Mr. Yerburch: Upon the question of giving power to the inspectors of Her Majesty's Customs to take samples at the ports, I understood you to say that you would extend that power to all food products, and would not confine it to butter only?—Certainly.—You were asked your opinion as to what effect that would have upon the price of these food products, and I understood you to say that one effect in your opinion would be to increase their value as food to the consumer?—That is so.—And you were further asked as to whether, in your opinion, it would increase their price to the consumer. I want to ask you a question upon that. We have had since 1876 the power in the hands of the Customs to take samples of tea, and I think we have been told by previous witnesses that the adulteration of tea is practically stopped. I would like to ask you whether since that power was given by Section 30, I think, of the Act of 1875, the price of tea has increased?—It has decreased for this among several other reasons, that the duty has been lower.—But apart from that, it has decreased in price you say?—Yes; and I think it was natural to expect that it would, inasmuch as the honest trade in tea would be encouraged by this check at the ports, and consequently the agriculture of tea would be spread; and we find that it has been so, Ceylon, for instance, produces tea very largely.—Therefore, what I understand is this: that generally you advocate this power being given to the Customs because you think it would be an advantage to the consumers as a body in this country?—Yes.—That they would get a pure article?—Yes, and I honestly say also that I think it would offer an encouragement to the honest producers of agricultural goods both here and abroad.

(To be continued)

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Guaranteed BREWED and free from ANY ADDED ACIDS.

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COLEMAN'S "WINCARNIS"

OR
LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

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Have been received from Medical Men.

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Have been awarded.

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"SANITAS" Kills all Disease Germs.

"SANITAS"—"Valuable Antiseptic and Disinfectant."

—Times.

"SANITAS"—"Enjoys general favour."—Lancet.

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Food and Sanitation.

SATURDAY, MAY 4TH, 1895.

DISEASE AND DISINFECTANTS.

No. VIII.

SANITARY INSPECTORS SEE REAL DISINFECTANTS MANUFACTURED AT THE SANITAS COMPANY'S WORKS.

READERS of our exposures of swindling disinfectants, of which, unfortunately for the public protection from disease, there are still too many used by Boards of Works, Local Boards, Vestries, etc., in the United Kingdom, will have discovered ere this that disinfection in its truly scientific sense has had many willing disciples but few masters; that, in fact, ignorance, mendacity, and quackery have had a long and a very profitable innings, and the public have been sufferers and victims of revolting disinfectant stenches redolent of the charnel house, and even more objectionable than the most sewage-permeated soil surrounding a faulty drain, or they have had trash guaranteed to be the very remedy for everything, but proving upon trial innocent of any powers for good, sold to them as potent agents with which to combat disease. Only one or two scientific men of real ability

have studied the questions of how disinfectants of every known kind act, their actual powers of inhibiting disease and of destroying disease germs, and whether it is really necessary to prevent the spread of disease that stenches of a vile character should be used. It was a distinct loss to experimental science and the investigation of many problems of entrancing interest to thinkers when Mr. Kingzett devoted himself some years ago almost exclusively to the study of disease and disinfectants, but the gain to accurate knowledge of the real action of disinfectants and how to disinfect has been of enormous public benefit. Mr. Kingzett brought to the study of this important branch of public health work qualifications of the rarest order.

As a student he attended the lectures of the late Sir Benjamin Brodie, who was Waynflete Professor of Chemistry at Oxford University, and, later, he assisted in the preparation and conduct of the demonstrations and classes held by Mr. H. G. Madan, M.A. It was towards the completion—in 1869—of the four years that were thus occupied that he passed the Oxford Local Examination as an Associate of Arts, having selected chemistry as one of the special subjects.

Leaving Oxford, he became associated as chemist with the late Mr. Walter Weldon, F.R.S., for whom he conducted the investigation of a great many processes connected with chemical manufactures. After a season thus passed in Mr. Weldon's laboratory at Putney the scene of his labours was changed to St. Helen's, in Lancashire, in order to secure the opportunity of subjecting some of these processes to test on a manufacturing scale. Here it was that he commenced to compile the information relative to the so-called soda bleaching powder, and other industries, which, in 1877, he published under the title of "The History, Products, and Processes of the Alkali Trade." This work appeared originally in weekly parts in the pages of *Iron*, and was afterwards published in book form by Longmans and Co. It was the first attempt that had been made in recent times to give a connected account of the many manufactures comprised in the alkali trade, and the volume was most favourably received by the press and the chemical public generally.

After severing his connection with Mr. Weldon, he was for some months taken up with the chemical management of a soda works in Liverpool. That position, however, afforded insufficient scope for his faculties, and next we find him associated with Professor A. H. Church at the Royal Agricultural College at Cirencester, where, however, he remained only for one term. It was about this time that Mr. Kingzett made his first communication to the Chemical Society of London, to which body he was shortly afterwards (1872) elected a Fellow, and to which he became a frequent contributor in respect of many researches which from time to time occupied him either alone or associated with others.

As chief assistant in the Pathological Laboratory of the Medical Department of the Privy Council, he conducted under the direction of Dr. Thudichum, during the ensuing four years, important investigations dealing with the chemistry of the blood, the bile, and, in particular, brain substance. The results of these investigations

formed the subject of several joint papers, which were communicated to the Chemical Society, and complete accounts were published in the Blue Books issued by the Medical Officer of the Privy Council. These investigations led Mr. Kingzett to prepare his well-known standard work entitled "Animal Chemistry, or the Relations of Chemistry to Physiology and Pathology," which was published by Longmans and Co. in 1878.

During the same period, and for some years more, he took an active part in the proceedings also of the British Association for the Advancement of Science and the Pharmaceutical Conference, while in respect of the Chemical Society he became the leader of a strong and numerous section of the Fellows who did much to maintain the dignity of that society until the foundation of the Institute of Chemistry to which the movement ultimately led, and in the formation of which he actively participated, having indeed, been one of the original seven founders. Many of the older Fellows of the Chemical Society were disposed to lower the qualifications for fellowship with a view of obtaining extended ranks and increased subscriptions, but so long as the society was the only one which bestowed any distinctive qualification on professional chemists, Mr. Kingzett, as already stated, led a strong and successful opposition, although for the time being it embittered his relations with some of the leading older Fellows.

In 1887 Mr. Kingzett, for a brief period, embarked in professional practice, but gave this up in order to devote his personal attention to working out several patents he had taken out in connection with the manufacture of disinfectants, and the bleaching of blood albumen. For many years previously he had been engaged at intervals in an investigation concerning the atmospheric or aerial oxidation of essential oils, and it was this that led him to make the discovery that he afterwards patented, and which formed the first step in the path that eventually led to the manufacture of "Sanitas" and other disinfectants and appliances by the Sanitas Company, Limited, with which important business Mr. Kingzett is still actively concerned. He has taken out many further patents, and it is of interest to note that every article of manufacture and appliance sold by that successful company is the subject of his personal invention.

For many years past he has devoted much time and study to problems and subjects connected with sanitation and antiseptic surgery, and it was not surprising, therefore, that in 1880 he should have published another work entitled "Nature's Hygiene: A Systematic Manual of Natural Hygiene." In each succeeding issue the scope of the book has grown so much that the fourth edition, recently issued (1894) by Messrs. Bailliere, Tindall and Co., is a large and comprehensive volume, dealing with pretty nearly all the subjects that can be properly considered as within the range of hygiene; moreover, it gives an account of many investigations which have been made by the author, more particularly in relation to the chemistry and hygiene of eucalyptus, pine and camphor forestry.

Naturally, Mr. Kingzett has had much to say about the relations of bacteria to disease, and he takes credit for having been one of the first, if not the first, to enunciate the view now generally accepted that microbes only produce disease indirectly, or, in other words, by virtue of the chemical products to which they give rise under certain specific conditions.

The chemical work with which Mr. Kingzett's name is associated is of a varied character. He has done much to clear up the constitution of ozone and peroxide of hydrogen, and the facts concerning their occurrence in nature. He was the first to give a chemical formula to pilocarpin (the alkaloidal principle of jaborandi), and by one of his investigations the exact constitution of bleaching powder was, for the first time, satisfactorily settled, he having isolated therefrom the true hypochlorite of calcium. Another of his critical inquiries practically destroyed the whole theory of the existence of organic peroxides as elaborated by his first teacher in chemistry—Brodie.

During the last 15 years Mr. Kingzett has led a very busy life, and has been interested in a good many industrial and other commercial undertakings, while his professional opinion has been frequently sought in connection with the elaboration of patented processes and established manufactures. In professional practice his favourite work has always consisted in working out technical problems and new processes, and in devising means of surmounting difficulties in manufacturing operations.

He was one of the earliest members, and has been a frequent contributor to the records of the Society of Chemical Industry, and is a member of the Society of Arts. He is an honorary member of the Société Française d'Hygiène, a past vice-president of the Society of Public Analysts, and has twice served on the Council of the Institute of Chemistry.

The Sanitary Inspectors' Association could not, therefore, have had abler tutelage upon the use of disinfectants than was allowed them on April 26, when the members of the Sanitary Inspectors' Association and affiliated branches paid a visit by invitation to the disinfectant factory of the Sanitas Company, Limited, where they were received by the managing director, Mr. C. T. Kingzett, who is an honorary member of the Association. After cordially welcoming the visitors on behalf of his company, he gave a short address descriptive of their manufactures and sanitary appliances. Mr. Kingzett prefaced his remarks by stating that since the last visit of the Sanitary Inspectors' Association to their works (some eleven years ago) the Sanitas Company had become manufacturers of all kinds of disinfectants, and he was very glad to have this opportunity of making the members of that Association better acquainted with the articles they are now manufacturing. It would be difficult to show to such a numerous

party the various processes of manufacture in detail, and he was afraid the inspection would resolve itself into a file through the different departments, but he had no doubt they would appreciate what they saw, and trusted that the remarks he had to make would do something to assist them. The reasons which induced the Sanitas Company to become manufacturers of disinfectants of all kinds were of a three-fold character. They had in the course of their business experience found that many rival firms were selling articles, the composition of which failed to justify the names that were given to them. They had even found that their own products were being badly imitated or adulterated, and that worthless articles were often sold to the public under colourable names or fraudulent conditions. They were not called "Sanitas" preparations—that would be much too risky a proceeding—but the trickery went sometimes very near to that. Then, again, in other lines, such as carbolic, it became known to them that various articles were being offered for sale which were not of the composition as represented, or did not contain the stated percentage of carbolic acid. On many occasions he had analysed powder which was stated to contain 15 per cent. carbolic acid, while, as a matter of fact, it contained but from one to five per cent. only. All sorts of both preparations have been placed on the market. He remembered quite recently one such for which great claims were made, but which proved on analysis to consist of more than 99 per cent. of water, containing less than one per cent. of common sulphate of iron, and it was actually adopted for use by one of our largest railway companies! Finally, they found that Boards of Health were growing into the habit of asking manufacturers or contractors to supply all and every kind of disinfectant material that they required, and, therefore, it became desirable that they should place themselves in the position to supply disinfectants of all kinds, which they were now prepared to do accordingly.

"SANITAS" DISINFECTANTS.

Originally the Sanitas Company manufactured only two products, viz., "Sanitas" Disinfecting Fluid, and "Sanitas" Oil, but gradually the list of "Sanitas" products had lengthened until now they were making some thirty to forty different articles. Their "Sanitas" Fluid was not so satisfactory when first made as it is to-day, and, although anxious to avoid egotism, he did not hesitate to claim that "Sanitas" Fluid, as made at the present time, has no equal, and that there is no other disinfectant to compare with it in value. It is a colourless, fragrant solution, is really non-poisonous, and it does not stain. Its active principles are those which are naturally generated in pine and eucalyptus forests, and include peroxide of hydrogen, thymol, soluble camphor, and other substances, which collectively give to it its pleasant pine-like odour. "Sanitas" Disinfecting Fluid is not merely a most effective germicide and antiseptic, but it is also a powerful oxidising agent—it prevents the formation of toxic products, and also destroys them by the oxygen which it gives off. It absolutely kills all disease germs.

With respect to what might be termed its "indoor applications," such as spraying the air, sprinkling floors, wetting sheets for purposes of isolation, and disinfecting linen, etc., there is no better preparation. It is also invaluable for washing wounds and sores, while if used as a mouth wash with anything like regularity it would be impossible for one to contract such a disease as diphtheria. Its use in the same way had been strongly recommended as a preventive of influenza, while its remarkable value as a gargle in cases of infectious sore throat was matter of almost common knowledge.

"SANITAS" OIL.—With regard to "Sanitas" Oil, that substance has a peculiar value, *i.e.*, for fumigation purposes in rooms and hospital wards after cases of infectious illness, and also for preventing the spread of infection, in addition to its application in the treatment of lung and throat affections.

"Sanitas" Oil consists in reality of the chemical products which are generated naturally in pine and eucalyptus forests. It derives its intense antiseptic, germicidal, and oxidising properties from the presence of camphoric peroxide, a substance which in its turn produces peroxide of hydrogen and soluble camphor when placed in contact with water or moist surfaces, such as wounds, etc., while it is equal in oxidising strength to a 10-volume solution of peroxide of hydrogen. "Sanitas" Oil is perfectly devoid of toxic effects when employed as an antiseptic dressing in the surgery, and inunction in association with a suitable basis. Being volatile at low temperature, it could be readily employed both as an air purifier and for the generation of an antiseptic vapour which had been found in practice to be particularly beneficial in the treatment of all lung and throat complaints. Mr. Kingzett then gave a general account of the manufacture of these two liquids, and stated that the Sanitas Company have at the present time some fifty producers in use, each having a capacity of about 120 gallons, and these vessels were in constant use throughout the year by day as well as by night for the production of "Sanitas" Fluid and "Sanitas" Oil by means of the process of oxidation that he had illustrated and explained.

DISINFECTING FUMIGATOR.—The "Sanitas" Disinfecting Fumigator and Bronchitis Kettle was described as an appliance which had been designed for the purpose of disinfecting sick chambers, etc., by means of "Sanitas" Oil vapour in association with steam. All that is necessary is to three-parts fill the cup of the "Sanitas" Fumigator with water and add the required quantity of "Sanitas" Oil, then light the spirit lamp and place it beneath the vessel containing the water and oil in order that the water should boil and generate the desired vapours, which by condensation upon or in contact with the articles and things of the sick chamber, effected

the desideratum, viz, secure disinfection and destruction of disease germs present in the air.

The "Sanitas" Inhaler consists of a vessel which is filled with an absorbent mixture heavily charged with "Sanitas" Oil. The bottom of the bottle is indented like an ordinary wine bottle, and at the top of the cone underneath there is a small hole lightly plugged with cotton wool, so that when the mouth is applied to the inhaling tube, a current of air is drawn through the contents of the bottle. In this way the active principles are volatilized from the very great surface which is presented by the absorbent mixture containing them, and the air is thus charged with its vapour. The use of this appliance constitutes a simple and effective pine treatment for lung, throat, and nasal complaints.

CRUDE "SANITAS"

was a rougher form of disinfectant, cheap enough for general employment after considerable dilution with water (with which it makes a milky solution). It has been especially designed for street watering, for disinfecting sewage and large accumulations of organic refuse generally. It is non-poisonous, and like all the other "Sanitas" liquids, combines the properties of an oxidising agent with those of a good disinfectant.

"SANITAS" EMULSION.—"Sanitas" Emulsion exhibits the same properties as "Sanitas" Oil, from which it is made, but, unlike that preparation, it is miscible with water in any proportion. "Sanitas" Powders—red, grey, or white—are made by incorporation of "Sanitas" Oil and other principles, with appropriate bases of soluble or insoluble character, according to specification.

"Sanitas" Sawdust consists of fine sawdust which has been heavily impregnated with about 10 per cent. of active principles. It is absorbent, and is intended for use in markets, kennels, stables, cattle sheds, poultry houses, and runs. It soaks up urine, and acts as an effective air purifier and deodorant.

"Sanitas" Distemper is a water-paint, impregnated with 10 per cent. of "Sanitas" principles, and is recommended for whitening and disinfecting the walls of rooms after infectious illness, also of factories, hospitals, dirty and damp cellars, etc.

"SANITAS" TABLETS

are slowly volatile, and only slightly soluble in water, so that they can be used both for hanging on the walls in water closets, etc., as also for immersion in cisterns which supply water closets; for both of these purposes they should be placed in the holders or cages which have been specially designed for these purposes.

"SANITAS" SOLUBLE DISINFECTANT BLOCKS

contain, when first made, nearly 75 per cent. of active disinfectant material, but lose some strength when kept in stock. When dissolved in water a slightly milky liquid is obtained, and "Sanitas" Oil passes into solution in an emulsified condition. These blocks are particularly useful for street watering purposes; all that is necessary being to place one or more of them in each cart before it is filled with water, so that the water becomes charged with the disinfectant by the time it is ready for distribution. They thus afford an excellent means of keeping the roads in a sanitary condition, and the air sweet and pure. In addition to the aforementioned products the Sanitas Company make many toilet, veterinary, surgical, and agricultural preparations, but Mr. Kingzett did not desire to trouble the meeting with details of these articles, and, therefore, passed on to the other disinfectant manufactures upon which this company have recently embarked. He stated that from time immemorial sulphur had been used for disinfecting by fumigation after cases of infectious illness, but that there had always been some considerable difficulty and danger attendant upon its use, and it was to avoid such that he had himself patented several new forms of Sulphur Candles or Fumigators which the Sanitas Company now manufacture. One is contained in a double or water jacketed tin, and the others are placed in tin trays or wrapped in metal foil.

IN KINGZETT'S PATENT SULPHUR FUMIGATING CANDLES

all danger and difficulty are overcome, the candles taking fire immediately that a light is applied to the cone or ribbon respectively constituting the lighters, and the combustion steadily proceeds until the whole of the sulphur is consumed. He remarked that however efficacious sulphurous acid may be as a disinfecting agent, it is rendered much more so by being generated in a moist state, because the water vapour condenses on the articles which require to be disinfected, and as the sulphurous acid is soluble in water it is brought thereby into absolute (material) contact with them. Of course, the tin tray form of candle could be stood in water while burning, and in this way made to generate aqueous vapour, while the candle coated with lead foil had been specially designed for use in this manner, the direction being to stand the container in water nearly up to its higher surface; the heat that is generated from the burning sulphur is conducted by the foil jacket to the water, which it evaporates in large amount. Each candle contains 1 lb. of sulphur, and is sufficient for the disinfection of an ordinary room of from 1,000 to 1,200 cubic feet capacity.

KINGZETT'S SULPHUGATORS.—For disinfecting smaller spaces he had patented an article named Kingzett's "Sulphugators," which consist of a slight fabric or tissue material such as Brussels net coated with sulphur, by steeping the bands or folds in a molten bath of that material. They may be burned to the best advantage in the small perforated metal cages which are specially constructed for the purpose, but any suitable vessel, such as an old tin box or saucepan, or frying pan, or small flower-pot will, however, suffice.

With regard to peroxide of hydrogen, Mr. Kingzett remarked that it was not used to anything like the extent it ought to be used. There was, however, one objection to its employment, for the ordinary solution is very unstable, and loses strength by being kept for any period. To get over this difficulty he had devised and patented a means of preserving the peroxide of hydrogen from this spontaneous decomposition, and in connection with this subject he remarked that the Sanitas Company were now able to export it even in wooden casks to Australia and America, a thing never before possible.

MERCURIAL DISINFECTANTS.—Corrosive sublimate (mercuric perchloride) came into extended use, particularly in the domain of antiseptic surgery, upon the recommendation, some years since, of Sir Joseph Lister, and about two years ago when this country was threatened with an outbreak of cholera, the Local Government Board publicly recommended the use of the same substance of strength, 1 in 1000, as a really general preventive disinfectant. There are many objections to the use of mercurial disinfectants, notably their extremely poisonous character, and it is a matter of surprise that the Local Government Board should have recommended the public at large to use such a dangerous substance. As, however, there is some demand for such preparations, it was necessary for the Sanitas Company to provide therefor, and they are now making four preparations of this class.

KINGZETT'S PATENT MERCURIC BACTERIOIDE

consists of a 5 per cent. solution of corrosive sublimate dissolved in a 5 volume solution of peroxide of hydrogen, a combination which is much superior to the plain corrosive sublimate only, inasmuch as it exhibits valuable properties as an oxidising agent. L.G.B. corrosive sublimate pellets (coloured blue) are manufactured by the company, and of such a size that when a pellet is dissolved in a pint of water there is obtained a blue coloured solution of a strength recommended by the Local Government Board as above referred to. The Sanitas Company also prepare a ready-made solution of corrosive sublimate of the same strength, and Binioidide of mercury solution as recommended for employment by Dr. C. A. R. Illingworth.

"SANITAS" EUCALYPTUS PREPARATIONS.

The first of these preparations is "Sanitas" Eucalyptus Oil, which is manufactured much in the same way as "Sanitas" Oil, and is strongly recommended for employment in preference to ordinary oils of Eucalyptus. "Sanitas" Eucalyptus Disinfectors (patented) are made of two patterns; the one consists of a porous block having a cavity which requires to be filled, from time to time, with "Sanitas" Eucalyptus Oil, whereas the other is provided with a reservoir of the oil with which the porous block is fed by means of a wick. In both the oil is soaked up by the porous diffuser, and is, automatically and continuously, given off in the state of vapour. These appliances are contained in perforated metal cages which can be stood or hung about rooms, and for which they should be employed for perfuming and purifying the air; obviously, they have many applications, as, for example, in dwelling and sick rooms, closets, passages, cellars, etc., etc. "Sanitas" Eucalyptus Soap is quite a new article, and is of the so-called cream superfatted variety. It contains 5 per cent. of "Sanitas" Eucalyptus Oil, and is a delightful antiseptic toilet soap.

COAL TAR DISINFECTANTS were then dealt with by Mr. Kingzett, who referred to the fact that most, if not all, of these preparations depend for their value upon the amount of coal tar acids (carbolic and cresylic acids) that they contain, so that, consequently, most of them are really more or less poisonous in character, notwithstanding that many of them are advertised as non-poisonous. He had his mind on one such preparation in particular, which for many years had been advertised as non-poisonous, but which he had lately found proved upon analysis to contain not less than 20 per cent. coal tar acids. He thought it was a very unfair and reprehensible thing to represent such an article as non-poisonous, and the Sanitas Company would certainly never lend themselves to that sort of conduct. Their own Coal Tar Disinfectants now included many varieties. "Creocide" No. 1 and "Creocide" No. 2 could be described as Coal Tar and Essential Oil Disinfectants, and both were practically free of coal tar acids. "Carbolated 20 per cent. Creocide," however, contained in addition 20 per cent. tar acids, and was quite equal in antiseptic and disinfecting strength and other properties to that of the liquid he had previously referred to as being sold as a non-poisonous preparation. In addition the Sanitas Company were now manufacturing "Creocide" Powder, Soluble Carbolated Creosote of 15 per cent. and 25 per cent. strengths, Soluble Carbolic Fluids of varying strength (15 per cent. to 80 per cent.), also various white and coloured Carbolic Powders containing specified percentages of tar acids.

OTHER VARIOUS DISINFECTANTS.

Among other products of the Sanitas Company is Chloride of Zinc, which is manufactured by them of the strength at which it is generally specified—viz., 102 degrees Tw. They also held stock of Peppermint Oil for drain testing, Chloride of Lime (Bleaching Powder), Sulphate of Iron (Green Copperas), Sulphate of Copper (Blue Copperas), Permanganates of Soda and Potash, Sulphur (refined rock, roll, and flowers), and, in fact, pretty well all and every kind of disinfecting material that may be required for use by Public Health authorities.

Mr. Kingzett having concluded his address, the visitors were conducted through the works, and inspected the methods of manufacture of the various products he had described.

The visit to the works was followed by a luncheon to the visitors. Mr. Moll (the Chairman of the Sanitas Company) presided, and was supported by Mr. Kingzett, Managing Director, Mr. Ziegler, Director, Mr. H. Alexander, late president of the Council of the Sanitary Inspectors' Association, Mr. Raymond, Treasurer, Mr. E. Tidman, Hon. Sec., and other members of the Council. After the toast of "Her Majesty the Queen" had been duly honoured, the Chairman said: "This is a proud day in the history of the Sanitas Company, which I am happy to say has prospered, especially during the last ten years. This is simply owing to the careful study we have made of sanitary necessities and to our efforts to make our products in accordance with the changes that are constantly taking place in the views of sanitarians, and your endeavours to prolong life and to prevent disease. During the last 30 or 40 years very great improvements have taken place in sanitary appliances, and it has been the great object of the Sanitas Company to give all the aid they could to sanitarians and to co-operate with them in their efforts to make these appliances known and to get them generally adopted—efforts which have had the most beneficial results on the general health of the country. On the part of myself and my colleagues, I welcome you all, and beg to propose a toast to the continued prosperity and success of the Sanitary Inspectors' Association. I couple with the toast the names of Mr. H. Alexander, late chairman of the Council, of Mr. Raymond, the treasurer, and last, but not least, that of Mr. Tidman, the Hon. Sec., and I should very much like to have added that of the present Chairman of the Council (Mr. H. Thomas), whose absence is much to be regretted, though we hope it is not caused by illness.

Mr. Kingzett, who was received with much applause, said: In rising to support the toast, I need not keep you long, because very little remains for me to add. In 1884 we had the pleasure of receiving a visit from your association at these works. We were then confined to two of the blocks that now forms our manufacturing premises. Since that time we have grown enormously, until to-day we can boast of being the largest producers of disinfectants in the world. Not that we claim all the credit to ourselves of these advances. Our duty was to manufacture what was demanded of us from time to time to carry out your wishes, but we have endeavoured to keep abreast of improvement, so as to be in a position to supply all your requirements. We know by your orders the way in which you appreciate our efforts, and we shall continue to follow the same policy in the future that we have in the past, (and if you, gentlemen, and the sanitary authorities throughout the Kingdom continue to support us in the future as they have done in the past, the Sanitas Company will have no cause to complain.

I have nothing more to add except to say that it would be very difficult for me to show you all round our works again individually, or even in a body, but if any of you would like to supplement what you have seen, or if there is anything you have not understood, I shall be glad to answer any questions or give any information desired. I hope this is not the last occasion on which we shall see you all here, and in conclusion I cordially support the toast of prosperity and success to the Sanitary Inspectors' Association, to Mr. Alexander, Mr. Raymond, and Mr. Tidman, its excellent hon. sec.

Mr. H. Alexander then rose to reply to the toast. He said: Gentlemen, I have to respond to this toast; a task which I have had to perform on previous occasions, but I have never done so with more satisfaction than on the present occasion, and it is with the greatest pleasure that I rise to thank the directors of this company for their courtesy. I can assure them that their invitation was received with the deepest satisfaction, and to myself it caused a lively recollection of a previous visit to this place. On that occasion we were received in a most hospitable manner, as we have been to-day. I should not like to simply respond to the toast without offering my congratulations upon the success which has attended the introduction of the processes we inspected on a previous occasion, and which then had a much smaller amount of support than they have at the present time. Another matter of congratulation is the growth, step by step, with your growth of the Sanitary Inspectors' Association. Mr. Kingzett and his brother directors may remember that eleven years ago not half the present number of members of the association then received invitations that are here to-day. The growth concurrently of the Sanitary Inspectors' Association and the Sanitas Company are equally matters for public congratulation. Sanitas has conquered for itself a high place in our esteem, and if we can no longer trust to soap and water the next best thing is Sanitas. Many years ago, in the hospital of Scutari, the only disinfectant we used was chloride of lime, in connection with the use of which I saw more horrors than I shall ever be able to forget. Then carbolic acid took its place and found favour with sanitary authorities everywhere, but I do not know which was the worse abomination of the two. Later on, when I became acquainted with Sanitas, I recognised its superiority, and wished it every success, and I do what I can to spread the knowledge of it far and wide. But I must not detain you longer, because I am to be followed by two orators. I hope the Sanitas Company will continue its prosperous career, and continue to add building to building. (Cheers.)

Mr. Raymond also spoke.

Mr. Tidman, who was next called upon, said: Mr. Chairman, I did not expect to be asked to-day to make a speech. Having but just returned from Worthing, I should have been glad to be let off, but, like a good secretary, I will comply with your request. I have great pleasure in responding to the toast of the Sanitary Inspectors'

Association, with which I have been long connected. We, like the Sanitas Co., have increased considerably during the last few years. We elected twenty-two new members at our last meeting, and I have already fourteen new members to propose at our next. I have a good account to give of the prospects of our approaching sanitary conference. The conference will be received and very heartily welcomed at Worthing, where everything shows that we shall have a very successful meeting (A voice: "We'll make you welcome!"). The Mayor wanted to know how many were likely to be present. I replied that we were 100 last year, but might possibly number 200 this year, and the statement was received with satisfaction. The railway authorities and the townspeople are giving the Corporation the most liberal support. You can go down when you like and come back when you like at a single fare. Everybody must be much pleased with the reception we have had from the Sanitas Co., and I should like to propose a toast to its success and prosperity. I met Mr. Kingzett at a conference some years ago, where Dr. Carpenter read a paper, and Mr. Kingzett, I remember, spoke on the occasion. I now renew the acquaintance with a great deal of pleasure.

Mr. Kingzett suitably responded and the meeting closed.

HULL AND THE BRITISH INSTITUTE OF PUBLIC HEALTH.

RECENTLY the Sanitary Committee of the Hull Corporation adopted, by a bare majority, a resolution recommending the Council to vote a sum of £200 towards the expenses of the visit of the British Institute of Public Health to Hull in August next. The recommendation, however, has proved distasteful, as many thought that the voting of a sum of money out of the public funds towards the entertainment of medical men was not dignifying to the body, and there was a probability that at the meeting of the Council it would be defeated. At a further meeting of the Sanitary Committee, on April 25, the chairman (Ald. Fraser), in reopening the question, said they must do something, as the Institute had already been invited. Mr. Gillett wanted to make a collection, but his suggestion passed unnoticed, and the Chairman made a resolution to the effect that the Council be recommended to authorise the committee to take such steps as they may deem advisable in connection with the visit in question. This resolution, although seconded, did not meet with acceptance, as there was a feeling that it was giving the committee *carte blanche* in the spending of money. Assurances were given by the Chairman, but the resolution was carried by four against two, four members not voting.

COMING EVENTS.

May 4.—Sanitary Inspectors' Association—Mr. J. Young's Paper on "The Dwelling-House from a Sanitary Point of View," Carpenter's Hall.

May 31, June 1.—Visit of the Sanitary Inspectors' Association to Worthing on the invitation of Mayor and Corporation.

ROYAL COMMISSION ON TUBERCULOSIS REPORT.

THE *British Medical Journal* publishes a summary of the report of the Royal Commission appointed in 1890 to inquire into the effect of food derived from tuberculous animals on human health. The commission, as originally appointed, consisted of Lord Basing (chairman), Sir George Buchanan, Professor G. T. Brown, C.B., Dr. Frank Payne, and Professor Burdon Sanderson, with Mr. Leopold Hudson, F.R.C.S., as secretary. After the death of Lord Basing, a new commission was issued with Sir George Buchanan as chairman, but the other members of the commission were the same. The report is signed by all of them.

DISEASE IDENTICAL IN MAN AND ANIMALS.

Dealing with the appearances produced by tuberculosis in man and animal, they state "explicitly that we regard the disease as being the same disease in man and in the food animals, no matter though there are differences in the one and the other in their manifestations of the disease; and that we consider the bacilli of tubercle to form an integral part of the disease in each, and, whatever be its origin, to be transmissible from man to animals, and from animals to animals. Of such transmissions there exists a quantity of evidence, altogether conclusive, derived from experiment."

Experiments in this direction were made by Dr. Sidney Martin and also by Dr. Sims Woodhead: "Meat" (using the term in the sense in which it is commonly used by butchers) from tuberculous animals, but free from obvious masses of tubercle, and milk from tuberculous cows, was fed uncooked to pigs, guinea-pigs, and rabbits, along with their usual food. Of the pigs, five out of 14 (36 per cent.); of the guinea-pigs, 24 out of 145 (16 per cent.); of the rabbits, two out of 13 (15 per cent.) became tuberculous. A number of control animals were kept under the same conditions (the pigs were from the same litter), but were not given tuberculous material in the food. Of these control animals (five pigs, 203 guinea-pigs, and eight rabbits) none became tuberculous.

Experiments were made also by feeding animals with tuberculous matter, that is to say, not merely meat derived from tuberculous animals, but obvious tuberculous matter recognised as such. In Dr. Martin's experiments the material was taken in some cases from a bovine animal, but in other cases it was derived from a human source, and each animal received only a single dose. One pig, eight guinea-pigs, and 10 calves received each such a dose; the pig, six guinea-pigs, and eight calves became tuberculous. In some experiments by Dr. Sims Woodhead it was found that tuberculous disease followed feeding on (uncooked) tuberculous matter in all of

the pigs (seven), in all the cats (five), and in 50 guinea-pigs out of 76.

RISK OF INFECTION.

Since, then, a person who takes tuberculous matter into the body as food incurs risk of tuberculous disease, and since it is known that this matter may be found in certain parts of animals affected with the disease, it became desirable to ascertain precisely what parts of an animal affected with tuberculosis were liable to contain this tuberculous matter. This matter is not present, or present to an equal degree, in all the organs. It "is found principally in the organs of the animals; as a rule, most abundantly in the lungs, lymphatic glands, serous membranes, but often in the liver, spleen, kidneys, intestines, and other structures. These organs are usually removed by the butcher in 'dressing' the carcase, though some of them may, intentionally or not, be left. To a practised eye it is hardly possible that tuberculous matter in these organs can escape detection, and the importance of its presence there will soon be apparent. For in the tissues which go to form the butcher's 'joint' the material of tubercle is not often found even where the organs exhibit very advanced or generalised tuberculosis; indeed, in muscle and muscle juice, it is very seldom that tubercle bacilli are to be met with; perhaps they are somewhat more often to be discovered in bone, or in some small lymphatic gland embedded in intermuscular fat. Yet there is always a difficulty in making sure of the absence of tuberculous matter from any part of a carcase that shows evidence of tubercle elsewhere."

"Taking all the results together," says Dr. Martin, "the method of removal of the meat, the results of inoculation and of feeding, one is driven to the conclusion that when meat is infective it commonly acquires its properties by being accidentally contaminated with tuberculous material during its removal from the carcase. This conclusion, it is evident, is one of great practical importance, bearing directly on the question of the condemnation of the meat of tuberculous cattle for human consumption."

MEAT FROM TUBERCULOUS CATTLE.

Upon this the commissioners observe that the intrinsic danger by contamination so affected to harmless meat "might just as well be encountered by meat from another animal (whether pig, sheep, calf, ox, or cow) that was perfectly free from tubercle, but only had happened to be next the animal brought to the same slaughterer." The commissioners are prepared to believe that "if sufficient discrimination and care were exercised in taking meat from tuberculous cattle, a great deal of meat from them might without danger be consumed by the community. They point out that "little evidence about the more serious degrees of tuberculosis in the animal would be discoverable in carcasses from which the organs had been removed; and that this is habitually the case with so-called 'dead meat,' whether English or foreign. Still there are indications in such a carcase, to the eye of an experienced inspector, of the more dangerous forms of tuberculosis having existed in the animal." They have "no doubt that supervision would tend in an important measure to the security of the public."

THE DANGER IN MILK.

On the important subject of milk, the commissioners arrive at the following conclusion:—"According to our experience," they write, "the condition required for ensuring to the milk of tuberculous cows the ability to produce tuberculosis in the consumers of their milk, is tuberculous disease of the cow affecting the udder. It should be noted that this affection of the udder is not peculiar to tuberculosis in an advanced stage, but may be found also in mild cases."

Both Dr. Martin and Dr. Woodhead comment on the extremely virulent nature of the milk derived from cows with tuberculous udders. Further, butter, skimmed milk, and buttermilk obtained from the milk of a cow having tuberculous udder (by the usual processes, but with complete precautions against accidental contamination of articles used in the manufacture) all contained tuberculous matter actively injurious to test animals. Dr. Woodhead draws attention to the rapidity with which this udder disease may spread, and with which, in consequence, milk can obtain its harmful quality. "The very absence," he adds, "of any definite sign in the earlier stage is one of the greatest dangers of this condition." Both Dr. Martin and Dr. Woodhead insist that no tuberculous animal of any kind shall be allowed to remain in a dairy.

"The withdrawal from dairies of every cow that had any disease whatever of her udder," the commissioners conclude, "would form some approach to security against the serious danger incurred by man from the use of tuberculous milk, but it would not be adequate security. The presence in a dairy of a tuberculous cow . . . is a decided source of danger to the public, especially having regard to what we have learnt respecting the rapid development of tuberculosis in the udder and the degree of danger to milk consumers incurred by the invasion of the udder in tuberculous cows."

RECOMMENDATIONS AS TO MILK.

The recommendation of the Royal Commission as to the prevention of the danger pointed out above is contained in the following paragraph.—"It follows from the observations here recorded that it is of supreme importance to the consumers of milk that the existence of any tuberculous disease of the udder should be ascertained without delay. Now there is no difficulty whatever about recognising the presence of some abnormal condition in a cow's udder, and the presence of such condition—whatever it may be—demands that the judgment of a responsible expert should forthwith be obtained

about its nature; unless, indeed, the owner prefers to slaughter the cow without delay. If the expert finds tubercle bacilli in the milk, the cow has dangerous tuberculosis of the udder. If he does not find them, he may apply the further test of inoculating some susceptible animals with the milk, and thereby learn the nature of the udder disease. By this test he will very rarely be misled. Obviously, the cow must be in seclusion, and every particle of her milk must be treated as highly dangerous during any delay that can be permitted for diagnostic purposes, and until the disease has been proved not to be tuberculosis."

INFLUENCE OF COOKING.

The experiments upon this head were made by Dr. Woodhead. He concluded that ordinary cooking sufficed to destroy the harmful quality of tuberculous matter so far as the required heat penetrated into the substance of the meat. To subject every particle to the boiling temperature for a single instant was sufficient, but experiments made to ascertain the temperature to which joints are actually raised during cooking proved that the boiling point was not reached, and that under certain circumstances there might be a very real danger of tuberculous matter escaping altogether any diminution, or at least any adequate destruction of its virulence. The experiments were made with rolls of meat, as no joints known to contain tuberculous material were available. Tuberculous matter was either injected into the substance of the meat or smeared on to slices, which were then rolled tightly up. Dr. Woodhead's results are thus reported in his own words:—

"Ordinary cooking, such as boiling, and more especially roasting, though quite sufficient to sterilise the surface and even the substance for a short distance from the surface of a joint, cannot be relied upon to sterilise tuberculous material included in the centre of rolls of meat, especially when these are more than 3lb. or 4lb. weight. The least reliable method of cooking for this purpose is roasting before the fire, next comes roasting in an oven, and then boiling."

The commissioners do not doubt the accuracy of these conclusions, and leave them to teach their own lesson, merely pointing out their importance in connection with the use of raw meat juice as food for delicate infants.

INFLUENCE OF BOILING.

The central idea of Dr. Woodhead's report on the effect of cooking on tuberculous milk is the advocacy of the boiling of all cow's milk which can by any chance contain tuberculous matter. "The most deadly tuberculous material," he writes, "can be rendered absolutely innocuous, so far as any spreading infectious disease is concerned, by the action of a temperature at which water boils. We have evidence," he adds, "that a lower temperature than this is sufficient to bring about the same results when allowed to act for a longer time, but for the present it is sufficient to state that boiling, for an instant even, renders the tubercle bacillus absolutely innocuous." The commissioners therefore recommend boiling.

VIROLENCE OF TUBERCULOUS MATERIAL.

In the course of his experiments on the degrees of heat needed to destroy the tuberculous matter of milk, Dr. Woodhead noted the effects upon the virulence of tuberculous material of temperatures insufficient for its actual destruction. By the operation of certain low temperatures he obtained a diminution in the virulence of the tuberculous material in the milk, which then became "so tardy in its operation on test animals as to simulate the slower forms of consumption seen in the human subject, or when used to feed pigs—animals having some specialities of throat structure like that of man—gave rise to chronic enlargements of the throat glands resembling the scrofulous glands so common in children. These observations are of much interest to us, not least because they suggest the possibility of widely prevalent forms of human tuberculosis owning an origin in milk."

ITS PREVALENCE IN CATTLE.

Finally, the commissioners state that "The actual amount of tuberculous disease among certain classes of food animals is so large as to afford to man frequent occasions for contracting tuberculosis disease through his food. As to the proportion of tuberculosis acquired by man through his food or through other means, we can form no definite opinion, but we think it probable that an appreciable part of the tuberculosis that affects man is obtained through his food. The recognition of tuberculous disease during the life of an animal is not wholly unattended with difficulty. Happily, however, it can in most cases be detected with certainty in the udders of milch cows. Provided every part that is the seat of tuberculous matter be avoided and destroyed, and provided care be taken to save from contamination by such matter the actual meat substance of a tuberculous animal, a great deal of meat from animals affected by tuberculosis may be eaten without risk to the consumer."

SEVERAL CONCLUSIONS.

The following are the final conclusions of the commissioners:—"Ordinary processes of cooking applied to meat which has got contaminated on its surface are probably sufficient to destroy the harmful quality. They would not avail to render wholesome any piece of meat that contained tuberculous matter in its deeper parts. In regard to milk, we are aware of the preference by English people for drinking cows' milk raw, a practice attended by danger, on account of possible contamination by pathogenic organisms. The boiling of milk, even for a moment, would probably be sufficient to remove the very dangerous quality of tuberculous milk."

DIAGNOSIS OF TUBERCULOSIS IN CATTLE.

The report does not speak in very definite terms under this

head. Professor McFadyean reported to the Commissioners that his experiments and investigations had brought him to the conclusion that extensive tuberculous disease might exist in animals which appeared after all the tests he could apply to be in perfect health. The injection of tuberculin as a test had frequently led him to erroneous conclusions—wrong indications about the presence or absence of tuberculosis in 24 out of 75 animals. Professor McFadyean, however, in spite of this, feels justified in summing up his report as follows: "I have no hesitation in saying that, taking full account of its imperfection, tuberculin is the most valuable means of diagnosis in tuberculosis that we possess." The Commissioners add that they "understand that, since the time of Professor McFadyean's experiments, the method of using tuberculin as a test has been much improved, and that it is now regarded as affording more trustworthy indications for diagnosis."

ADULTERATION PROSECUTIONS.

COFFEE.

At Bradford, on April 22, Christopher R. Hill, grocer, Briggate, Shipley, was summoned for having sold coffee that was not of the nature demanded. Inspector Randerson, West Riding County Council Inspector, stated that he bought a pound of coffee, for which he paid 1s. 8d. When he had received the goods he told the defendant's wife, who had supplied him with them, that they were for analysis. She then said, "I did not know they were for analysis, or I should have given you pure coffee." The witness found no label to indicate that what he had bought was a mixture. The coffee was weighed for him. Mr. Peel: You did not say pure coffee—you simply asked for one pound of coffee? Inspector Randerson: Yes. The witness added that he did not see the canister, and did not see what words were on it. Inspector Quinlan stated that on March 15 he asked Inspector Randerson to go into the defendant's shop and make some purchases. As soon as the transaction was completed he entered the shop, and the defendant's wife was told that the mixture was required for analysis. It was not then denied that what had been bought was a mixture of coffee and chicory. The analysis showed that the mixture consisted of 50 per cent. of coffee and 50 per cent. of chicory. The defendant, in answer to the charge, said he bought the business in November last, having had no previous experience of the grocery trade. When he took the shop over the valuation included a small quantity of coffee, between three and four pounds, and the coffee that was supplied to the inspector was taken from this. He did not know that the mixture had been sold to him as impure coffee; it was sold to him in the valuation as coffee, and the canister containing it was marked "coffee." He sometimes attended to the shop, but generally his wife looked after it. He did not think she knew that the article supplied was impure coffee. The chief business done at the shop was in groceries and provisions. He sold a quantity of tea, but practically no coffee. In answer to the Bench, Inspector Quinlan said the shop was a very old-established one, and was situated in the main street of Shipley. It was a busy shop, and one of the finest in that particular district. The defendant, however, said that where one person passed along the side of the street where his shop was situated, a thousand passed on the other side. The shop, including a house, was rented at only £19 10s. Mr. Peel: It cannot be very large for that. In reply to further questions Inspector Quinlan said that the cost of chicory was from 6d. to 8d. per lb. at the outside. The price which he had paid for the coffee—1s. 8d.—was a very good price. The defendant was ordered to pay a fine of 10s. and costs, the alternative being ten days' imprisonment.

BUTTER.

At Dartford, on April 20, George Page, grocer, of Belvedere, Erith, was summoned for selling margarine which was not wrapped in a properly stamped paper, and for selling margarine as butter, the "adulteration" being certified by Dr. M. A. Adams at 100 per cent. Thomas Carr said that by the direction of Inspector Tucker he went to the defendant's shop and asked for half a pound of shilling butter. He was served with the sample produced by the defendant's daughter. When he called Mr. Tucker in, Mrs. Page said the article with which he had been served was margarine. In defence Mrs. Page said that the inspector and his man entered the

shop when they were busy cleaning, and the margarine and butter being close to each other, Miss Page, who was new to the business, mistook the one for the other. A fine of £4 and costs was imposed in the first case, and a fine of 1s. and costs in the second case—£5 4s. altogether.

GEORGE NEWMAN was summoned at Croydon, on April 20, for having exposed for sale a quantity of margarine without being labelled as such on March 19. Defendant did not appear, and, Inspector Martin having proved the case, a fine of 20s. with 9s. court fees and 10s. 6d. analyst's fee was imposed.

At Reigate, on April 22, three grocers were summoned by Mr. Walters, inspector of food and drugs. The first was Mr. William Thain, manager for Messrs. Kearley and Tonge, 33, Duke-street, London, trading as the International Tea Company at Redhill, for whom Mr. F. W. Beck (Neve and Beck, solicitors, Lime-street, London) appeared. The prosecution was conducted by the Town Clerk (Dr. C. J. Greece). Mr. Beck objected to the form of the summons, that it was defective on account of there being no particulars mentioned. After a lengthy legal argument, Mr. Beck said butter might be adulterated with many things. If the magistrates' clerk would take notice of the objection, he should like them to hear the case, as he felt sure he should get a dismissal on its merits. The evidence for the prosecution showed that the inspector sent a lad named Knight into the defendant company's shop for a quarter of tenpenny butter, but was informed, so the lad stated, that they had no tenpenny butter. In cross-examination, he said that before he took the butter out of the shop he saw that it was wrapped up in a paper with the word "margarine" plainly printed on it. Mr. Beck, for the defence, said that defendants always took the greatest precautions to see that their customers were not deceived. They had over 200 shops throughout the country, and no less than 160 samples had been taken from them. In one case only a conviction was recorded, and in that case an appeal was pending. William Thain stated that he told the lad plainly they had no tenpenny butter, but, in answer to the Town Clerk, witness could not say how it was that he gave another article when tenpenny butter was asked for. After a quarter of an hour's consideration, the Mayor said there was not sufficient evidence upon which to convict, and dismissed the case.—The summons against Albert Belcher, of Ladbrooke-road, was dismissed. The evidence showed that the butter was wrapped in a paper with "margarine" printed on it. The boy who made the purchases for the inspector appeared to have mixed the evidence in these two cases.—Arthur Watts, Loudon-road, Redhill, was fined 10s. and costs. Defendant stated that it was owing to a mistake on the part of his assistant that margarine was sold instead of butter.

SOMERSET HOUSE STILL UNABLE TO ANALYSE MILK.

THOMAS (not Algernon Charles) SWINBURNE is a milkman at West Hartlepool, and when Mr. Thomas Wheal, the diligent and capable Food and Drugs Act Inspector at West Hartlepool, took a sample of his milk and had it analysed, the lacteal fluid was found deficient in fat to the extent of 20 per cent.

Mr. Swinburne, however, had his song ready for the magistrates, and eloquently voiced the cause of himself, his farm, his wife, and his milk. The bench, however, were incredulous, and as Mr. Swinburne holds a certificate as a teacher of dairy-farming, and may be, therefore, reasonably suspected of knowing that the Somerset House chemists are incapable of analysing milk, he asked that the sample should be sent to them. The result on April 29 was that the Somerset House certificate was read, and stated the deficiency in fat to be 15 per cent., which seems to show the Somerset House is still 5 per cent. out of accuracy, but it was enough for the magistrates, who saddened the soul of the milkman with the poetic name by a fine of £5 with costs.

ALLEGED FALSE WARRANTY.

THE case in which Superintendent Jones, of Pontypridd, sued Messrs. Dixon and Co., of Bristol, for having issued a false warranty, was again before the Pontypridd stipendiary last week. On January 30 last the summons was dismissed on the ground that the provisions of Section 14 of the Food and Drugs Act had not been complied with, and for certain other reasons then urged. Mr. R. T. Rhys, Aberdare, again appeared to prosecute, and Mr. Kenshole, also of Aberdare, defended. Mr. Rhys now applied to his worship to state a case for the Court of Appeal upon the following points which had been raised by the defence:—That the warranty given

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by Messrs. Dixon and Son to Messrs. W. H. Davies and Co., of the American Stores, Pontypridd, was not a false warranty within the meaning of Section 27; that the term "purchaser" in Section 27 referred to the person purchasing for analysis; that it was a condition precedent to the prosecution of Messrs. Dixon and Son that Section 14 should have been complied with upon the sale by them; and that the respondents were entitled to the benefit of Section 25, as they had purchased with a written warranty. The Stipendiary said that he would look over the notes taken at the hearing, and give his decision again.

LEAD POISONING BY LEAD WATER-PIPES.

This important subject, we are pleased to see, has been brought somewhat prominently before the public during the past two years. Dr. H. T. Broughton, Medical Officer of Health, Heckmondwike, has done well in directing public attention to it in his annual report, wherein he makes an important reference to the water-supply of the township. This was stated to have been ample during the past year, but unfortunately the water acted on the lead service pipes. "I have spoken," says Dr. Broughton, "on the subject before, but it is of such importance that I refer to it again. Water so impregnated causes in time, in those who regularly drink it, an impaired state of health which is not always easy to account for. I would still advise you to insist on other than lead pipes being placed in new houses. The wrought iron pipe lined with tin has proved itself an ideal pipe, and water has no corrosive action on it, and can be delivered to the consumer as pure and uncontaminated as at its source." The pipe Dr. Broughton so justly praises is known as the "Health Water-Pipe." This is so serious a question from the point of public protection from disease that we hope the time is not far distant when districts like those in Yorkshire, having water-supplies that are susceptible to contamination by lead pipes, shall be subject to special bye-laws prohibiting the use of such pipes. It is in the main a matter of $\frac{1}{2}$ s. d., the pockets of property-owners being protected whilst the health of the occupiers is seriously injured.

CORRESPONDENCE.

DANISH BUTTER ADULTERATION.

To the Editor of FOOD AND SANITATION.

SIR,—Perhaps Mr. Faber does not remember that at Wigan some years ago, Danish butter was certified by the public analyst as adulterated, and, although the case was taken up by Mr. Faber, a conviction followed.

The reference sample was sent to Somerset House, whose chemists agreed with the public analyst that it contained foreign fat. Their own sample, left at the shop by the inspector, was submitted to Mr. Charles Estcourt, who also found foreign fat. This is very complete evidence of purchase, &c. Mr. Faber should be careful, before he throws stones, to see that they do not go near his own glass house.—I am, &c.,

P. ANDERSON ESTCOURT, F.O.S., F.I.O.

Analytical and Technological Institute, Manchester.

CONFERENCE ON WEIGHTS AND MEASURES.—Under the auspices of the Incorporated Society of Inspectors of Weights and Measures, a national conference of inspectors and of manufacturers was held last week in the Birmingham Council Chamber to consider the working of the Weights and Measures Acts. Mr. Jesse Collings, M.P., presided, and said he had long felt the importance of the question, and had on two occasions raised debates on it. The principal complaint was that weights and scales were not accepted in localities other than those where they were made and stamped. What they wanted was uniformity. Mr. Parkes, chairman of the Markets and Fairs Committee of the Birmingham Council, said he joined in recognising the existence of anomalies in the law which were injurious to the manufacturers, and brought discredit upon the inspectors. Mr. T. Kyle (Aylesbury), chairman of the society, moved a resolution condemning the present system of administration of the Weights and Measures Acts. Mr. Bartlett (Bristol) seconded the motion, and, after some discussion, the resolution was carried unanimously. Further resolutions were carried urging the desirability of appointing a committee of six inspectors and six manufacturers to submit a report to a subsequent conference in London, the report afterwards to be laid before the President or Permanent Secretary of the Board of Trade.

POISONED BY TINNED SARDINES.—Mr. Devine, sanitary inspector, Greenock, has been engaged inquiring into a case of poisoning by eating tinned sardines. The fish were brought into the house of a family residing in Mearns-street, and were partaken of by the mother, a grown-up son, a daughter, and a young relative. During the night, all four were seized with sickness, and a doctor had to be sent for, whose opinion is that an irritant poison had found its way into the tin. The son was extremely ill, and for a time his life was despaired of; but he is now believed to be out of danger. The mistress of the house had also a distressing seizure, but the other two had eaten but sparingly of the sardines, and recovered more quickly. The tin was taken possession of, and will be thoroughly investigated and its remaining contents analysed. The brand upon the tin has besides been noted, and inquiries will be of the most complete nature.

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circumstances, it is amusing to learn that these samples of margarine gained prizes in the butter section over twenty samples of dairy butter. One of the judges, moreover, after spending some weeks in an analytical investigation of the samples, reaffirmed his previous decision. Portions of two of the samples have been kept bearing the judge's brand.

"There is nothing wrong in all this as far as the manufacturer is concerned, and it is only a pity that all other makers of margarine do not attain to a similar degree of excellence. There can be no doubt, however, as to the hopelessness of trying to differentiate mixtures of butter and margarine, for if it is possible to make a margarine pure and simple, which can take a prize over the heads of a score of genuine butters, and which cannot be distinguished by an expert from ordinary butter, how very much more difficult must the task of detecting mixtures be? Again, if the margarine can be made of such excellent quality, the plea of the necessity of adding a little butter to please the public cannot be deemed reasonable. We want margarine sold as such, and likewise butter; but so long as mixtures are legal the temptation to fraud is so excessive that it is sheer foolishness to expect vendors to withstand it, unless the tone of trade morality can be immediately raised to the standard of the millennium."

Food and Sanitation.

SATURDAY, MAY 11TH, 1895.

BUTTER v. MARGARINE.

OUR contemporary, the *Chemical Trade Journal*, says: "An incident has recently occurred in the States which shows very clearly that mixtures of butter and margarine should be forbidden by law. Margarine is a very good thing in itself, and so is butter, but when you come to mixtures it is a very difficult matter to ascertain whether a mixture almost wholly composed of margarine is being sold at the price of butter or not.

"The incident to which we refer occurred at a Dairy Show in Pennsylvania. Unknown to the judges, a manufacturer, noted for the excellence of the margarine he manufactured, entered samples of pure margarine in the butter competition. There is no doubt about the identity of the samples, as the sender, and the receiver who placed them on exhibition have both given testimony on oath as to their being genuine. Under these

A WARNING TO GROCERS.

"DRAWN," OR ADULTERATED CARAWAYS.

AT a recent public sale of spice, a protest was made, says *The Produce Markets Review*, by Messrs. Harvest (of Messrs. W. and D. Harvest), Mr. Richards (J. Travers and Sons, Limited), Mr. Forster, and other members of the trade, at an offer being made of adulterated caraways, and the parcel was withdrawn in

consequence. Unfortunately this spurious commodity is largely sold by private contract, and it is only the fear of law which is likely to stop the practice. "Drawn" caraways are seeds from which the essential oil has been extracted, and are, therefore, quite flavourless, but their use can, fortunately, be easily detected by the darkness and shrivelled appearance of the seeds. According to the law in force in some parts of the Continent, such refuse should be destroyed, and it is much to be regretted that the law in this country is not sufficiently far-reaching to have rubbish of the sort destroyed at the time of landing. As it is, "Drawn" caraways are extensively dealt in here, being disguised by mixture with a proportion of unexhausted seeds. The fraud is of precisely the same character as the sale of spent ginger, and, as with that substance, the wrong people are likely to be punished. Spent caraways in mixture are palmed off as pure on the retail grocers, the inducement being a somewhat lower price, through which attraction unwary buyers are betrayed. The cost of pure caraways in the market is from 30s. to 32s. 6d. per cwt., and any parcels offered at less than a fair profit on those rates should at once be treated as suspicious. Even a casual examination will at once show the mixture of drawn seeds, which, as a rule, are very much darker than unexhausted ones. It is to be hoped that the grocers, and particularly the smaller buyers, will be on their guard against this miserable form of petty thieving, as it will be the dupes and not the perpetrators who will be the sufferers when the analytical authorities set to work, as they will probably do, now that the circumstances have been brought to their notice.

ADULTERATION PROSECUTIONS.

BUTTER.

At the Harewood End Police Court, J. H. Banchani, Whitchurch, was summoned under the Food and Drugs Act for selling butter adulterated by 25 per cent. of foreign fat. Defendant pleaded guilty, but said he sold it in the same state that he received it from the wholesale dealer. Supt. Cope said he visited defendant's shop at Whitchurch and purchased $\frac{1}{2}$ lb. of salt butter, for which he paid 9d. He complied with the section of the Food and Drugs Act as to dividing it, and had it analysed. He produced the county analyst's certificate stating that the butter contained 25 per cent. of foreign fat. An invoice was put in terming it "choice butter," and the price was 11d. per lb. wholesale. The bench convicted, and fined defendant \pounds 1 and 10s. costs, but told him they believed he sold it as received.

THE BUTTER ASSOCIATION INSPECTORS AGAIN.

MR. LANE was engaged for a considerable time on May 1 in further hearing the summons taken out by the Butter Association against Samuel Tregoning Evans, provision dealer, of Kingsland-road, who was alleged to have exposed margarine for sale without being properly labelled. The case had been adjourned because the inspectors of the Association swore there were glass panels to the enclosure of the butter-slab, and the defendant replied that they were marble arms to the slab, and not glass. Mr. Morton Smith was now counsel for the complainants, and Mr. Margetts for the defendant. A number of witnesses were called to prove that the arms were of marble, and could not be seen through; but Mr. Morton Smith and Mr. James King Stewart, secretary of the Association, said they had seen the place, and were able to see the margarine or butter, or whatever might happen to be on the slab. They did not go so far as to say that the arms were composed of glass. It was black polished marble, so highly polished that it was

almost equal to a looking glass. Mr. Lane: But still, you could not see through it, I am inclined to think that the officers of the Association are exceedingly zealous, and believe that they are capable of seeing more than they are really capable of. Mr. Morton Smith: That was the impression of the inspectors that it was glass. Mr. Lane: And, having got the impression that the marble was glass, they got the idea that they could clearly see the butter. But I will see this shop myself, so as to test the evidence, and adjourn the case.

On May 6, Mr. Lane gave his decision, and said he would give judgment in favour of the defendant. The inspectors had sworn that they could see the margarine on the slab by looking from the pavement through the shop window. This might be possible for a very tall person craning his neck, and then he would only catch a glimpse of it. To his (the magistrate's) mind, it would be ridiculous to call that exposure for sale. The evidence of the inspectors had been entirely displaced by that given for the defendant. They both distinctly swore that the sides and back of the slab were of glass, and that the margarine was visible to people who stood in front of the glass. He did not for one moment believe that they deliberately stated that which was untrue, because, on the face of it, it would be too dangerous and puerile. He believed they had the impression, and that this was prompted to a great extent by their wishes, which was, to say the least, dangerous. In the most friendly way in the world, he advised them to be more cautious in their statements for the future. The summons would be dismissed, with \pounds 3 costs.

SPIRITS.

THE FORM OF CERTIFICATE.

JAMES RIMRON, landlord of the Three Horse Shoes public-house, Dinas Powis, was summoned before the magistrates at Penarth Police Court on May 6 for selling adulterated whisky. Mr. T. H. Belcher, who appeared for the defence, informed the Court that the case had been adjourned from the previous Monday upon some points raised by himself as to the sufficiency of the certificate given by the deputy analyst, who, he contended, was not the proper person to give a certificate in the absence of the public analyst. Since that time they had had an opportunity of looking into the matter, and if they had at that time known what they had since learned, one point at least would not probably have been raised. It appeared that *de facto* the person signing the certificate was himself a public analyst, having been appointed to that position by the County Council for three months. But in the present instance he had signed himself "deputy analyst" instead of "public analyst," and if necessary he would raise that point during the hearing of the case, and have a case stated by the magistrates upon it. Inspector Roberts, stationed at Penarth, gave evidence of the offence. On the 15th April he visited defendant's house in company with P.C. Peacock and another person, and asked Mrs. Rimron, in the presence of her husband, for three threepennyworths of Irish whisky, which were served in three separate glasses. Witness procured a jug, placed the whole of the whisky into it, and subsequently divided it again into three equal portions, which were bottled, sealed, and marked in the usual way.—Cross-examined by Mr. Belcher: Witness and his friends went into the first room available. The spirit was not served from a vessel in that room.—Mr. Belcher: Then there were two rooms—one where an ordinary person like myself would go, and another where a superior person would likely be found, the parlour?—Witness: I should expect to find you in the parlour, sir. (Laughter.)—Mr. Belcher: I hope we shall meet there together some day. (Renewed laughter.)—Witness, further examined, said he had seen no notice suspended similar to the one produced, stating that spirits sold at that establishment, being of superior quality, were diluted with water.—P.C. Peacock, when called, confirmed his superior officer's testimony.—Mr. Belcher objected, first of all to the method of purchase as being against the statutory regulation required to be observed, this being three distinct sales, three distinct purchases, and three separate articles. A further point was raised as to the analytical certificate, but the Bench decided against him in each instance.—Mr. Belcher: I am sure you will grant me a case if necessary.—Mr. T. R. Thompson: Yes, certainly.—Mr. Belcher then proceeded to comment upon the merits of the case, severely questioning the method of the inspector in obtaining spirits whilst in a room where they knew the business proper of the establishment was not conducted, and securing such small quantities, which he argued were perfectly useless for analytical purposes. Defendant himself was examined, and stated that when tested by his own hydrometer the spirit was found to be 24.17 degrees under proof. A notice was exhibited in the ordinary business portion of the premises, stating that all spirits sold were diluted with water. The Bench were of opinion that this was a very serious case of dilution, and very much to the prejudice of persons buying spirits, especially as it contained no less than 69 per cent. of water. The defendant was fined \pounds 5 and costs. In reply to Mr. Belcher the magistrates expressed their willingness to state a case if applied for in the ordinary way.

SAMUEL BLAKE, landlord of the Swan Inn, Eastbrook, Dinas Powis, was similarly summoned for selling rum, adulterated to the extent of 67 per cent. with water. Inspector Roberts adopted the same process in this case as in the other. Defendant pleaded that the jug in which the spirit was placed was not dry, and contained a slight portion of water. The whole of his stock was purchased

by him from a previous tenant, and he sold it in precisely the same state. A fine of £5 and costs was again imposed in this case.

At Bromley, Stephen Fairbrass, of the George Inn, Hayes, was summoned for selling rum adulterated to the extent of 10.35 per cent. below the legal limit. He pleaded guilty.—Mr. Tucker, the Inspector, proved purchasing, through his assistant, half a pint of rum, which he divided according to law. He sent one portion to the County Analyst, who certified that there was an excess of added water to the extent of 10.35.—Mr. Gregory, for the defence, said his client had not been in the house very long, and when he went there he purchased from the previous tenant a quantity of "bond" rum. As a matter of fact this was stronger than the ordinary rum purchased through a dealer, but the defendant was not aware of this, and when the "bond" spirit was gone he purchased from a wine merchant, and used the same quantity of water in "breaking it down" as he had done previously. Mr. Gregory reminded the Bench that by law the defendant was entitled to add 25 per cent. of water, and in using another 10 per cent. There was this satisfactory element about it—that he had used nothing injurious to health. (Laughter.)—The Bench imposed a fine of £5 and 8s. costs, together with the analyst's fee of 10s. 6d.

LARD.

At Lymington, Stanford Botting, grocer, of the High-street, was summoned for selling a pound of lard, on March 13, not of the nature, substance, and quality of the article demanded, having been adulterated by the addition of at least 30 per cent. of cotton seed oil. Mr. Gould, of Winchester, prosecuted on behalf of the County Council, and Mr. W. L. Bell, of Southampton, defended. The lard in question was purchased by a Mrs. Healy, who acted as agent for Inspector Foster, of Petersfield. After the purchase the lard was divided into three parts in the usual manner, and Dr. Angell, the county analyst, forwarded a certificate that the sample sent to him contained at least 30 per cent. of cotton seed oil. Mr. Bell, for the defence, said he should prove the lard was absolutely pure, and commented on the fact that Dr. Angell had not been called as a witness (though present in court). He called the defendant, who said he served the lard from a bucket one of a consignment of twenty-five buckets of the Armour Packing Co.'s white label lard, which was guaranteed absolutely pure. He forwarded the portion of lard left with him by Inspector Foster to the firm's London agents. James Morrow, head of the lard department of the Armour Packing Company, Kansas City, U.S.A., said he had come specially from Antwerp to deal with this case, as all their white label lard was absolutely pure. He had caused the sample forwarded by Mr. Botting to be analysed by Dr. Dyer and Dr. Dupré. Subsequently he had seen Dr. Angell, and told him what had been done, and that the lard had been found perfectly pure, so that he knew his analysis was to be called in question. Mr. Gould objected; the defence having failed to give notice could not now contradict the county analyst's certificates. After some legal argument the bench over-ruled the objection. Dr. B. Dyer, Fellow of the Institute of Chemistry, said he had analysed the sample forwarded by Mr. Botting, and, in his opinion, it was perfectly genuine lard, of the variety known as whole hog lard. He was quite sure it did not contain cotton seed oil. He obtained no results from what was known as the silver test, and he put it through half-a-dozen other tests, but each one negatived the possibility of cotton seed oil being there. If pure lard was exposed to the air it might take something on which in some sense simulated the properties of lard adulterated with cotton seed oil, when analysed by the silver test. Dr. Dupré said he also had carefully analysed a portion of the contents of the jar forwarded by Mr. Botting, and was able to say it was genuine whole hog lard. It undoubtedly did not contain cotton seed oil. The Mayor said the bench were unanimous in dismissing the case.

MILK.

At Greenwich, on April 24, Henry Comfort, of 248, Rotherhithe New-road, was summoned by Mr. Davies, sanitary inspector of Rotherhithe, for selling milk with 14 per cent. of added water; George Willie, of 62, Cranham-road, Rotherhithe, was summoned for selling milk with 20 per cent. of added water; and Arthur Green, of 20, Silwood-street, Rotherhithe, for selling milk from which 40 per cent. of cream had been abstracted.—Mr. Scard, for the first two defendants, said the milk was sold as it was received from the cow-keeper, but there was no warranty.—Mr. Green said he bought it as new milk, and sold it as such.—Mr. Kennedy said it was skim milk.—Each defendant was fined £3, with 2s. costs.

At Aston Police-court, on May 4, Joseph Lingard, milk-seller, 44, William-street, Aston, was summoned for selling milk deficient of 25 per cent. of its natural fat. Mr. Benjamin Bolt, inspector under the Food and Drugs Act, proved the offence, and defendant was fined 10s. and costs. A like fine was inflicted in the case of Francis Eaves, shopkeeper, 30, Kensington-street, for selling adulterated milk on the 30th March. Both the defendants stated that they disposed of the milk in the same condition as it was received from the wholesale dealers.

A CURIOUS CASE.

At Worship-street, on April 26, Samuel D. Jenkins, dairyman, of

Bethnal-green-road, was summoned before Mr. Bushby, by the Sanitary Authority of Bethnal-green-road, for selling milk adulterated with 17 per cent. of added water. Mr. Ricketts, solicitor, defended. The correctness of the analyst's certificate was disputed by the defence, Mr. Ricketts electing to have the sample retained by the Sanitary Authority sent to Somerset House for analysis. Mr. Bushby now read the following letter, as received from the Government Laboratory, Somerset House, under date of 11th April: "With reference to the sample of milk sent here for analysis, I have to acquaint you that the bottle was only half full, and on withdrawing the cork the sample afforded evidence of having been exposed to access of air, which has brought about changes in the milk that interfere with its satisfactory analysis. I also regret to add that the seal was not perfect, and the cork appeared to have been recently pierced with a corkscrew, and that from the smallness of the sample—only three ounces—it would appear that a portion of the milk had been either taken out or otherwise tampered with. In the instructions issued to local authorities by the Local Government Board (February, 1894), it is recommended that the bottle should be nearly filled, and secured with a new and sound cork, that the quantity purchased should be at least one pint (twenty ounces), and that the division under section 14 of the Act should be as nearly equal as possible. Under these circumstances, I regret that we shall be unable to furnish the Court with a certificate of analysis.—(Signed), R. BANNISTER." Mr. Bushby said that this was a serious reflection upon the prosecution, as the sample in question had been retained in the custody of the sanitary inspector of the parish, and the case had broken down. The summons would be dismissed. Mr. Ricketts asked for costs, and Mr. Bushby awarded two guineas, to be paid by the parish.

SPENT GINGER.—TEST CASE.

At Lancaster, on May 2, Mr. R. G. Trowers, grocer, of St. Nicholas-street, was summoned by ex-Police-Inspector Parkinson, for ground ginger adulteration. Chief constable Ward personally delivered a sample to Mr. Escourt, the Lancaster borough analyst. Mr. Escourt declared that the sample contained 25 per cent. of spent ginger. He added that no change had taken place in the sample which would in any way interfere with the analysis. Messrs. Wright, Crossley and Co., Liverpool, supplied the ginger. Mr. W. Tilly, for the defence, produced a certificate signed by Dr. Campbell-Brown and Mr. Collingwood William, B. Sc., of Liverpool, which stated:—"We are of opinion that the sample is genuine ginger of high quality, and absolutely free from spent ginger." The sample on which this opinion was stated was the one left in defendant's hands by the police officer. Dr. Campbell-Brown, in a letter, added that the sample was free from adulteration, and contained no trace of spent ginger. "No one who knows ginger," he wrote, "can pretend that this is other than high-class ginger." The Bench ordered the sample to be sent to Somerset House.

COPPER IN PEAS.

At Chester, on May 2, William Culm, 15, Watergate-street, Chester, was summoned for selling a bottle of peas adulterated with sulphate of copper. Mr. S. Smith, Town Clerk, prosecuted, and said there were circumstances which justified the Bench in only inflicting a nominal penalty. Defendant purchased the peas from Patrick Fitzpatrick, nut and banana salesman, of 23, Queen-square, Liverpool, but before doing so had produced to him a certificate not in compliance with the Act, and calculated to mislead and induce him to purchase. That certificate was headed, "56, Hanover-street, Liverpool," and bore a heading "Evans, Son and Company, Laboratory Department, and M. Conroy, F.C.S., chemist." It represented that the "Monogram" brand of peas, or a sample purported to have been submitted to them, was free from copper. Defendant, upon the faith of that certificate, purchased the peas. That certificate was not a warranty which would be a protection under the Act for shopkeepers. The Chairman said that other cases had been before them of selling adulterated peas. Defendant had been misled; but the Bench would fine him 10s. and costs. It would be much better for shopkeepers to purchase English peas instead of foreign ones. They hoped it would be a warning to other shopkeepers.

MARGARINE.

At Marylebone, on May 3, A. E. M'Pherson and Co., Limited, provision merchants of 112, Lisson-grove, Marylebone, was summoned by the St. Pancras Vestry for selling butter which was adulterated with foreign fat to the extent of 65 per cent. Mr. Ricketts, solicitor, prosecuted. Annie Emily Davy, on behalf of Peter Fulton, the sanitary inspector, went into the branch shop of the defendant, situate at 80, William-street, Hampstead-road, and asked the price of butter. The person in charge named several prices, and Miss Davy elected to be served with three-quarters of a pound of 1s. butter. The article was afterwards analysed, and was found to consist of 65 per cent. of foreign fat. Mr. Clay, solicitor for the defence, said his client sent margarine to the

branch, and directed the person in charge to sell it as such; but it seemed that on this occasion a mistake was made. Mr. Plowden refused to accept such an excuse for fraud of this kind, and fined the defendant £5, with 12s. 6d. costs.

COFFEE AND CHICORY.

JOHN WESTON PARDY, of the Charminster-road Post Office, was summoned for selling coffee which was stated on analysis to be adulterated with about 70 per cent. of chicory. The coffee was purchased by Agnes Healy, who had given evidence in another case, and evidence in corroboration was given by Supt. Foster, who produced the analysis of Dr. Angell, county analyst. The defence was that the coffee was ground for the witness, but that by mistake some chicory berries had got mixed with it. Defendant was fined 1s. and 17s. 5d. costs.

OLIVE OIL.

At Bournemouth, Thomas Frederick Young, of Winton, was summoned for "selling a certain drug, to wit, olive oil," which was found on analysis to be not of the nature and substance demanded, and to contain no less than 85 per cent. of oil not olive oil.—Mr. C. Lamport, who defended, took the preliminary objection that the summons had not been served within the 28 days specified in the Act with respect to perishable articles, the alleged offence having been committed on the 11th March, the summons being served on the 13th of the present month.—The Bench overruled the objection, as also a further objection that olive oil was an article of food and not a drug.—Agnes Healy, who described herself as the "agent to Supt. Foster," under the Sale of Food and Drugs Act, deposed that, acting on instructions from Supt. Foster, she purchased a flask of oil for 5d. from the wife of defendant at the shop in question at Winton on the 11th March. She had asked for "olive oil," and before serving her the defendant's wife had consulted a list of prices.—In cross-examination witness said she knew olive oil was used for cooking. She did not know that pure olive oil would cost twice the amount she gave for the flask oil at Winton; but in reply to Supt. Foster, added that she had purchased for 7½d. at several places in the country, flask oil which had been analysed and found to be pure olive oil.—Supt. Foster deposed to sending the last witness into the shop at Winton, where the oil was bought. When he went into the shop and received the oil, Mrs. Young admitted that she was a "stranger to the business, did not know the prices, did not want to do wrong to anyone, and had sold the oil exactly as it was bought wholesale."—The analysis of Dr. Angell, county analyst, was to the effect that the sample of oil forwarded him was adulterated with 85 per cent. of oil, not olive oil, but, presumably, cotton seed oil.—Mr. Lamport raised objections to the form of the analysis, and, with regard to the facts of the case, contended that the witness Healy completed the sale of oil knowing that she was buying "flask" oil, and getting all that she asked and paid for.—The Bench consulted privately for nearly ten minutes, and upon their return into court, the Chairman said the Bench were divided upon certain points and had decided to adjourn the case.—Mr. Lamport asked whether the whole case would be heard *de novo*?—The Magistrates' Clerk said he was afraid they must, and another magistrate would be summoned. Mr. Lamport said if he called his evidence the case might be disposed of now. The defendant and his wife were then called to show that the oil was not bought or sold as "pure olive oil." Mrs. Young said the witness asked for a "bottle of oil," and did not mention "olive." Only one class of oil was kept in the shop, and the witness Healy purchased the first of 12 bottles which had been placed in stock. The defendant's daughter and a customer, Emily Read, gave evidence as to the oil being sold as "flask oil." Alfred Thrift, wholesale grocer, of St. John's Wood-road, who supplied the oil in question, deposed that flask oil was sold distinctly from olive oil. The latter was rarely put up in "flasks." The bench again retired, and upon their return, the Chairman said that under the circumstances brought to their notice the bench were divided in opinion, and the majority decided to dismiss the case.

FORGING CONDEMNED FISH NOTES.

At Mansion House, Harry Poole, a fish salesman, of Billingsgate, was summoned before Alderman Sir Robert Tyler, for forging a condemned fish note.—Mr. C. O. Humphreys prosecuted on behalf of the Fishmongers' Company.—In January last, 10 boxes of Norwegian herrings were consigned to the defendant, and five of them were seized and condemned as unfit for food. The defendant was alleged to have altered the condemned note from five to 10, and then he took the note to the officers of the Midland Railway Company—that company having delivered the fish—and requested that the carriage charges on the fish might be remitted. By means of the same note the defendant also escaped paying for the fish, the consignee being James Smith, wholesale fish dealer, Hull, under the plea that they had all been condemned. The railway company refused to remit the charges, as they had ascertained that the defendant had sold five of the boxes of fish, and when the defendant

was spoken to about the forgery he said he made the alteration, and did not think there was any harm in doing it.—Inspector Abbott served the summons against the defendant, who told him that he (defendant) had acted in ignorance.—The defendant was committed for trial, being allowed bail.—Mr. Humphreys said the Fishmongers' Company had no animus in the matter; but, as they were under the impression that this was not the first occurrence of this kind, they thought it their duty to prosecute, as they were determined as far as they could to put a stop to this sort of thing.

PRESERVATION OF FRUIT.

At a recent meeting of the Société Nationale d'Agriculture, Mr. Tisserand, director of agriculture at the Ministry, read a note from Mr. Petit upon the preservation of fruit. Mr. Petit has found that upon keeping fruit, grapes, for example, in a closed place permeated with the vapour of alcohol, it may be preserved for some time. On the 31st of October, 1894, that is to say, very late in the season, some grapes were collected and placed upon wood shavings in a cellar closed as tightly as possible by a wooden door. In the same cellar was placed a vessel containing four ounces of alcohol. Some grapes were also placed in two similar cellars, one of them open and the other closed, but neither containing any alcohol. The temperature of these cellars ranged from 8 degrees to 10 degrees C. On the 20th of November the grapes in the two cellars in which there was no alcoholic vapour were found to be rotten, while in the cellar whose atmosphere had been alcoholised the fruit was perfect and free from mouldiness. On the 7th of December these grapes still presented a very fine appearance, and when tasted by experts were pronounced to be of exquisite flavour. This method of preservation is extremely simple, may be easily applied, and necessitates no special installation. Mr. Tisserand thinks that it would suffice to treat with alcohol the wood shavings upon which the fruit is arranged.

SANITARY INSPECTORS AND THE EXAMINING BODIES.

ON May 4 a deputation from the Sanitary Inspectors' Association waited upon the President of the Local Government Board for the purpose of pointing out that, although the Association has incorporated powers to hold examinations, it is felt that it is very desirable that a more comprehensive Examining Board should be appointed by the Government, who should not accept the examination of any existing enterprise promoted by any particular body, or under the scheme as now proposed to be approved by the Board under the Companies Acts, and that in any approved or appointed examination Board the sanitary inspectors should be fairly represented, so that a thoroughly practical qualification was secured. Among those who attended the deputation were General Lord Chelmsford, Sir B. W. Richardson (president of the association), Mr. H. Alexander (chairman), and Mr. P. Thornton, M.P. Sir B. W. Richardson introduced the deputation.—Sir W. Foster, in reply, said that in all probability, when the law was altered, the certificates would be required to a much larger extent all over the country, and consequently it was important that the examinations should be of the highest standard, and that nothing should be done to cause them to deteriorate in quality. He suggested that all the bodies engaged in teaching should meet and endeavour to form a Board for the purpose of examining only and granting certificates, and by adding to its constitution from time to time. It would require an Act of Parliament, however, to give them powers to formulate such a body.

FLIES AND CONTAGION.

THE part played by flies in carrying the contagium of disease was demonstrated in a very practical and beautiful manner at the *soirée* of the Royal Society last night. A series of sections of potatoes were shown which were covered more or less with streaks and rosettes of the growth of a brilliant red bacterium called the *Bacillus prodigiosus*. The method followed is to allow a fly to walk for a few seconds over a sliced potato covered with a thick growth of this bacillus. The fly is then turned into a large room and allowed to fly about for a varying number of hours. After a certain time he is recaptured, and is made to walk for a few seconds over the surface of a sterilized potato, which is then placed in the incubator for a few days. At the end of that time the tracks of the fly's feet are seen to be traced by a growth of the coloured bacillus which is more or less marked according to the length of time, which has elapsed since the fly came in contact with the specific growth. The minuteness of the amount of the contagium and the certainty with which it may be conveyed in the feet of the fly, even after an interval of several hours of constant activity, demonstrate in a very forcible manner the dangers we all run of the possibility of flies conveying the germs of disease to our food. In India outbreaks of cholera have been due to this cause.

IMPORTANT SANITARY JUDGMENTS.

At Worship-street Police-court, important decisions as to public rights were given in three cases which had been before the

magistrates of the court on three or four occasions recently. In one case which came before Mr. Bushby on the 19th and 26th April, a lady named Hyde, residing at Streatham House, Leamington, Warwick, was summoned by the Vestry of St. Leonard, Shoreditch, for having neglected to comply with certain requirements of the Vestry as to the drainage of a certain house in Paul-street, Finsbury, her property. Counsel for Mrs. Hyde had raised the question whether under the Metropolis Management Act, 1862, the drains complained of were not repairable by the Vestry as portions of the common sewers. Mr. Robinson, D.O.L. (Vestry Clerk for Shoreditch), in the course of presenting his case, said that if the case was decided against the Vestry it would throw hundreds of miles of pipes upon the rates to bear the cost of repair. Mr. Bushby, in giving judgment, said that to be a drain within the meaning of the Act, one of three conditions must be fulfilled by it; *i.e.*, it must be a drain for the use of one house only, or (2) a drain for several houses within the same curtilage, or (3) a drain constructed under the order or sanction of the Vestry. If not fulfilling either of those conditions, the drain was a sewer, and, as such, repairable by the Vestry. With respect to the observation of Dr. Robinson as to the serious consequences of miles upon miles of pipes being thrown upon the rates, it was not for him (the magistrate) to dogmatise upon the intentions of Parliament, but it was for him to point out that if the drains were not to be left to private management they became sewers within the meaning of the Act, and were to be controlled by the Vestry. He dismissed the summons, and ordered the Vestry to pay three guineas cost. The Vestry Clerk asked for a case for argument before the High Court, and Mr. Bushby consented to state one on the legal point that the pipes in question were sewers and not drains.

Mr. Bushby also decided the case against Messrs. Groom, button manufacturers, of Whitfield-street, Finsbury; also summoned by the same Vestry. The complaint in this case was laid under the Public Health (London) Act, 1891, the allegation being that the defendants had not complied with the requirements of the Act in respect of the provision of sufficient and separate accommodation for the male and female employees of the factory. The question raised on the last occasion was whether the two conveniences provided were more than sufficient for the female employees, and on the evidence of the sanitary inspector of the parish Mr. Bushby decided that they must be reserved wholly for those workers. The defence then contended that having obtained a privilege of user of adjoining premises they complied with the Act as to providing. The Vestry Clerk submitted that the Act required each factory to provide for itself, and that as the adjoining premises here mentioned were in separate occupation the Act was not complied with, as the employees would have to leave one set of premises and pass into the street to enter the next factory. Further, that it would be impossible to control the arrangements in the interests of the workpeople, whose number might be multiplied indefinitely by conceding accommodation to factories all round. Mr. Bushby had pointed out that the Act had not laid it down where the accommodation should be provided, and now decided against the Vestry, and condemned them in costs, £2 2s.

PROPOSED REGISTRATION OF MILKMEN.

WITH a view to the more effectual registration of persons vending milk, the Metropolitan Dairymen's Society has submitted to the London County Council that "it be provided that every person who vends milk in the streets, or delivers the same at any house, shall be required to wear a metal badge denoting the licensed dairy from which the milk is supplied; and that all cans and receptacles used for the purpose of the trade for the conveyance or sale of skim or separated milk shall be clearly labelled to this effect with inch letters in brass on the can or receptacle, or on a canvas label attached thereto."

HASTINGS AND THE FOOD AND DRUGS ACT.

THE report of the public analyst (Mr. Horace F. Cheshire) appointed by the Borough of Hastings, upon the articles analysed by him under the Sale of Food and Drugs Act, 1875, during the quarter ending March 31st, 1895, showed that the articles submitted for analysis consisted of six milks, two whiskeys, two butters, and one lard, with the result that they were all genuine, with the exception of one milk which was diluted with 12 per cent. of water, and the vendor was prosecuted and fined.

ADULTERATION OF FOOD IN CORNWALL.

SIXTY samples were analysed under the Food and Drugs Act by Mr. Benedict Kitto, county analyst, in the quarter ended March 25th. There were ten of butter, eight of lard, six of milk, five of whisky, four of tea, three each of pepper, brandy, and gin, two each of cheese, sugar, yeast, and ginger, and one each of coffee, arrowroot, tapioca, sweets, mustard, marmalade, jam, calves' foot jelly, saffron, and vinegar. No serious adulterations were discovered. One sample of lard had a considerable amount of beef

stearine mixed with it, and the two lots of yeast contained small proportions of starch. One of the watered samples of whisky was a little beyond the limit stipulated by the Act, as was also watered gin. The only prosecution notified to the analyst was that in which a fine of 10s. and 8s. costs was imposed for selling whisky brought down to 45 degrees under proof.

WEST SUSSEX COUNTY COUNCIL AND THE SALE OF FOOD AND DRUGS ACTS.

THE report of the analyst for the year ended March 31, states that in all 144 articles were submitted for analysis, of which 128 were found genuine, and 16 adulterated. The costs incurred in obtaining and submitting these samples for analysis, including the analyst's fees and printing, was £99 12s. 9d. The committee estimated their expenses for the current financial year at £100. A further report of the Public Analyst showed that during the quarter ended March 31, 14 samples of milk had been submitted for analysis, of which 12 were genuine, and two adulterated with 7 and 8 per cent. of water. Fourteen samples of butter were analysed, and 13 proved genuine, one being adulterated with 75 per cent. of margarine. The vendor, in this latter case, it was added, showed that he had been deceived by a London wholesale merchant. Mr. Otto Hehner added:—Twelve of the butter samples were submitted in consequence of evidence given before the Committee of the House of Commons now sitting, a witness having stated that practically all butter coming from Normandy, or sold under the name of Normandy butter, was adulterated with margarine. My analysis utterly disproves that statement. I have analysed during the past few years innumerable samples of Normandy butter, and, although from time to time adulterated samples were among these, as among the produce of almost every other country, no foundation whatever exists, or has existed, for such sweeping accusation as has been made before the committee. At the present time, when perfectly pure butter of Australian and New Zealand origin can be bought retail at 8d. per pound, and still much cheaper wholesale, a price which is no greater than that of margarine, little inducement exists to add margarine to butter.

THE SCIENTIFIC HOUSEWIFE.

Give me a spoon of oleo, ma,
And the sodium alkali,
For I'm going to make a pie, mamma,
I'm going to make a pie,
For John will be hungry and tired, ma,
And his tissues will decompose—
So give me a gramme of phosphate,
And the carbon and cellulose.

Now, give me a chunk of caseine, ma,
To shorten the thermic fat;
And hand me the oxygen bottle, ma,
And look at the thermostat;
And if the electric oven's cold
Just turn it on-half an ohm,
For I want to have supper ready
As soon as John comes home.

Now, pass me the neutral dope, mamma,
And rotate the mixing machine,
But give me the sterilized water first
And the oleomargarine,
And the phosphate, too, for now I think,
The new typewriter's quit
And John will need more phosphate food
To help his brain a bit.

[Chicago News.]

HOW IMITATION COFFEE BEANS ARE MADE.

THE "compound" is manufactured in the shape of coffee beans, made to imitate as closely as possible the natural article. It is sold to wholesale dealers, and is mixed with the commoner grades of coffee. The bogus coffee is sold at about one-third of the price of the natural product, and this allows a big margin of profit when the "compound" is mixed with the genuine article. Molasses, chicory, rye flour, and other ingredients enter into the composition, and it is claimed that it contains nothing injurious to health. The manufacture of the bogus coffee berry is commenced on the third floor of the factory, otherwise known as the mixing-room. At one end of a big room a huge tub is located, where the different ingredients are thoroughly beaten up—the mixture looking very much like children's mud pie batter. It is next placed in a sort of grinding machine and the preparation thoroughly ground. The putty-like substance is now ready for the next machine, which merely rolls it out into thin sheets, similar to the pie crust. A third contrivance cuts these sheets into long, narrow strips, about an inch in width. The next process is the stamping of the long strips into beans. The long, thin strips are run into this machine,

and are divided by knives into two or three strips the exact width of the bean. In running through the wheels the beans are stamped out with bewildering rapidity, falling into square sieves. The beans are carried to the floor beneath, where the drying-room is located. One hundred and thirty degrees is the temperature required, and the bean is left for several hours to thoroughly dry. The bean is, of course, still very rough, and would easily be detected as spurious were it not smoothed down. For this purpose a dozen revolving sieves are required. The bean is taken from the drying closets and dumped into the sieves, and is smoothed and polished by friction. In the bottom of each sieve there is a funnel-shaped trap, through which the beans fall into a receptacle on the floor below. The final process is to roast the bean, and in the same manner as the genuine article.—*New England Grocer.*

CORRESPONDENCE.

THE BUTTER ASSOCIATION'S "INSPECTOR" AND SECRETARY TOO.

To the Editor of FOOD AND SANITATION.

SIR,—Knowing, as I do, that your valuable journal circulates so extensively among the Inspectors under the Food and Drugs Act, I venture once more to ask for a portion of your space, in order to bring before your readers another instance of the methods of the "Irish Inspectors" representing the Butter Association.

"Walls," they say, "have ears," but have you ever heard of a person seeing through a "block of japped slate?" I hear you say "Never," yet these two "Irish Inspectors" swore before Mr. Lane, at North London, in the case of *Toler v. Evans*, that they saw a lump of "margarine" through a butter slab, the maker of which swore it was made of slate.

This is the worst case of all, and, to aggravate the matter, their secretary joined in the fray, and gave his evidence, alleging he could see through the marble. Mr. Lane wisely determined to personally test this gentleman's veracity. Mr. Lane is, to my mind, the most painstaking magistrate in London, and it is to his credit that he should take so much trouble to get at the actual facts.

Now, sir, I repeat my question of last week: "Does Mr. J. Hudson rely on information supplied, or to be supplied, by these men?" If so, what value can be placed upon such evidence?

Unless the Inspectors insist upon the "Member" of the Association, from whom Mr. Hudson received his authority to make his charge against them, giving his name and the source of his strength, they ought to be condemned.—Yours truly,

A LOOKER-ON.

SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XLIV.

(Continued from page 129.)

Then upon the question of the administration of the Act, I want to ask you as to whether you think that it would be an advantage if a central authority as now existing, say the Board of Trade, had the power to send down their own inspectors to take samples; do you think that that would be an advisable thing?—That is recommended in our report of the Margarine Committee of the Central Chamber of Agriculture.—I do not think you were asked the question?—I think not. I entirely agree with that recommendation.—We have had before us a recommendation made by Professor Long that the analytical work now done at Somerset House should be done by the Board of Trade, or possibly by the Board of Agriculture; do you think that that would be an advisable change?—I should like it to be the business of some special department, and I think it looks natural to expect that that department should be based on the Board of Agriculture; but I really do not know sufficient about it to say.—Sooner than have the present arrangement, you would advise that there should be some separate department to deal with this question of dairy produce?—At present it seems to be nobody's business. You appeal to the Board of Trade, and get referred to another body, and then you appeal to that other body and get referred back again to the Board of Trade.—Do you think it advisable to charge a low scale of fees so as to encourage the public to send up samples for analysis, apart from the inspectors, supposing that you had such a body constituted?—They can do that now.—But we have been told by a previous witness that that power is not very largely taken advantage of?—My experience tells me that few people like to place themselves in the position of public prosecutors.—I know we have been told that that power is not taken advantage of, possibly for that reason, but we have also been told that one of the difficulties of obtaining samples is that the inspectors are known, and that, therefore, probably they are given the pure article when they go to obtain samples?—Yes, that is so, I

believe.—While the public are served with articles in ordinary commerce, and therefore there is more probability that they would get the adulterated article than the inspector would?—I have no doubt that if the person who chose to become a public prosecutor, and took a sample, was freed from any pecuniary liability as to expense, there would be individuals found who would be ready to take upon themselves the office of giving information, and that the reduction of the fee (I don't suppose that you could do without some fee) would be a means, possibly, of inducing individuals to put the law into action.—As to the case that you gave us of the adventurer who supplied a retail dealer with a mixture, how would you propose to deal with the case of people carrying on such a system of fraud?—That question would be met by my previous answer. I would prohibit the colouring of margarine at all.—On the question of the colouring of margarine, you were asked whether, if margarine was uncoloured, if you prohibited the colouring of margarine and yet allowed it to be mixed with high-coloured butter, you would still be unable to prevent the fraud. I think it was my honourable friend Mr. Whiteley who asked you the question?—The honourable Member did not ask me whether I would allow of the mixture.—What the honourable Member put to you was this: that if you prohibited the colouring of margarine, and that uncoloured margarine was mixed with highly-coloured butter, the result would be a margarine in colour resembling ordinary butter?—It would be so.—But supposing that you further prohibited the admixture of butter with margarine, would you not then prevent any such fraud?—That is my opinion.—Therefore I understand you to advise that both should go hand-in-hand, that you should prohibit the colouring of margarine, and also prohibit the mixture of any butter with margarine?—That is so.—We have had it put to witnesses before whether margarine in its present condition, and under its present circumstances, was not largely used by private individuals and by institutions, and we have been told that there exists a practice in Copenhagen of margarine being sold uncoloured and unmixed to the buyers, and butter also being sold, and of those purchasers taking the articles home and mixing them for himself. I want to ask you a question upon that. In the case which you gave us of the farmer who was convicted of selling adulterated butter, I think you said it was discovered that he had been in the habit of mixing margarine with his butter at home?—It was discovered that he had been in the habit of buying a hundredweight of margarine a week, and selling large quantities of butter, although he only kept three cows. There seems to have been no evidence of his mixing it.

(To be continued)

MARGARINE ACT PENALTIES.

IMPORTANT JUDGMENT.

QUEEN'S BENCH DIVISION.

(Before the LORD CHIEF JUSTICE and MR. JUSTICE CHARLES, May 4.)
THE QUEEN V. TITTERTON.

In this case a rule had been obtained against "Harry Titterton, Esq., chief clerk at Worship-street Police Court," calling upon him to show cause why a *mandamus* should not issue directed to him commanding him to pay over to Charles Quelch, an inspector appointed by the Vestry of St. Leonard, Shoreditch, a penalty of £15 received from one Thomas Morgan upon an information laid against him by the said Charles Quelch, as such inspector, before one of the metropolitan magistrates at Worship-street, under the Margarine Act, 1887. The question was whether penalties under the Margarine Act, 1887 (50 and 51 Vic., c. 29), recovered before a metropolitan magistrate, must be paid to the receiver of the metropolitan police district, or to the inspector who prosecutes on behalf of a vestry. For the purposes of the case it was assumed by the Court that Quelch was an "officer, inspector, or constable of the authority who shall have appointed an analyst, or agreed to the acting of an analyst within their district" within the meaning of the Sale of Food and Drugs Act, 1875, section 26. Mr. Titterton had received the fine and refused to pay it to Quelch, on the ground that he was bound to pay it to the receiver for the Metropolitan police district under the provisions of the Metropolitan Police Act, 1839 (2 and 3 Vic., cap. 71), section 47. By section 11 of the Margarine Act, 1887, "Any part of any penalty recovered under this Act may, if the Court shall so direct, be paid to the person who proceeds for the same, to reimburse him for the legal costs of obtaining the analysis, and any other reasonable expenses to which the Court shall consider him entitled." By section 12 of the Margarine Act, 1887, "All proceedings under this Act shall, save as expressly varied by this Act, be the same as prescribed by sections 12 to 28 of the Sale of Food and Drugs Act, 1875, and all officers employed under that Act are hereby empowered and required to carry out the provisions of this Act." By section 26 of the Sale of Food and Drugs Act, 1875, "Every penalty recovered under this Act shall be paid in the case of a prosecution by any officer, inspector, or constable of the authority who shall have appointed an analyst within their district, to such officer, inspector, or constable, and shall be paid by him to the authority for whom he acts and be applied towards the expenses of executing this Act, any statute to the contrary notwithstanding; but in the case of any other prosecution the same shall be paid and applied in England according to the law regulating the application of penalties punishable in a summary manner"

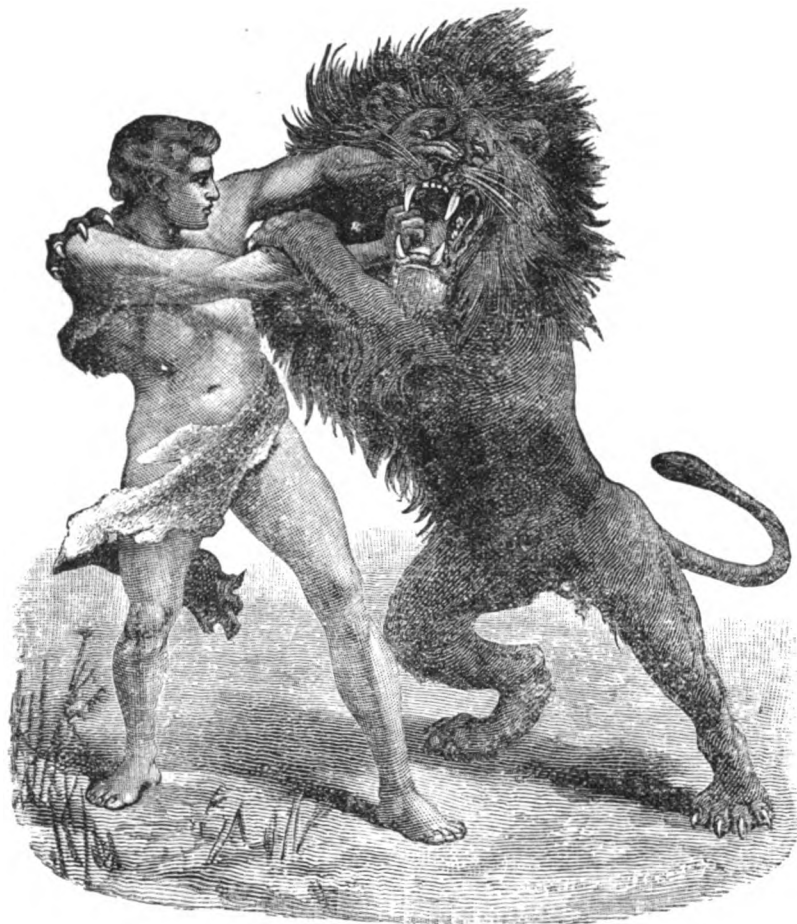
Mr. Sutton appeared to show cause against the rule upon behalf

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of the chief clerk, and submitted, first, that section 26 of the Sale of Food and Drugs Act, 1875, did not overrule section 47 of 2 and 3 Vict., cap. 71, upon which the title of the receiver depended. Section 26 of the Act of 1875 was a general section, but section 47 of 2 and 3 Vict., cap. 71, only applied to prosecutions before a stipendiary magistrate sitting within a metropolitan police district; and the general terms of section 26 of the Act of 1875 did not overrule the particular provision of 2 and 3 Vict., cap. 71, sec. 47. The title of the receiver, therefore, still remained by force of the Act 2 and 3 Vict., cap. 71. He cited "Wray v. Ellis" (1858) (1 E. and E., 276); "Receiver for Metropolitan Police District v. Bell" (1872) (L.R., 7 Q.B., 433); "Attorney-General v. Moore" (1878) (3 Ex. Div., 276, 280). Secondly, section 12 of the Margarine Act, 1887, did not incorporate section 26 of the Sale of Food and Drugs Act, 1875. Section 12 of the former Act applied to "proceedings," and the appropriation of penalties was not a "proceeding."

Mr. Willis, Q.C., Mr. A. Macmorran, and Mr. F. Low appeared in support of the rule. [The Lord Chief Justice.—The only point upon which the Court desires your assistance is the distinction between "Wray v. Ellis" and the present case.] That case ought to be overruled. It is distinguishable, as it was a decision upon a different statute, in which the words are different.

The Court made the rule absolute, and ordered the *mandamus* to go.

The Lord Chief Justice, in the course of his judgment, said.—The question is whether Quelch, the applicant, or the receiver for the metropolitan police district, is entitled to a penalty imposed by a metropolitan police magistrate under the provisions of the Margarine Act, 1887. We are to assume upon admissions of the parties, for the purposes of this case, that the applicant Quelch was an officer acting in execution of the Act of 1875, and properly acting under section 26 of that Act. The title of the receiver for the metropolitan police district is based upon section 47 of 2 and 3 Victoria, chapter 71. By that section, "Where by any Act or Acts any penalties . . . shall hereafter be made recoverable in a summary manner before any justice or justices of the peace, and by such Act or Acts respectively, the same are, or shall be, limited and made payable to her Majesty or to body corporate, or to any person or persons whomsoever save the informer who shall sue for the same, or any party aggrieved; in every such case the same, if recovered or adjudged before any of the said magistrates, shall be recovered for and adjudged to the said receiver for the time being, and not to any other person." If the Legislature had rested there, it is quite clear that the title of the receiver to the penalty which was inflicted in this case would be good. But it does not rest there. That statute was followed by the Sale of Food and Drugs Act, 1875. By section 10 provision is made for the appointment and payment of analysts by the Commissioners of Sewers of the City of London, and in other parts of the metropolis by the vestries and district boards acting in execution of the Act for the better local management of the metropolis. Section 12 deals with proceedings against offenders. Having arrived at the conclusion that there is a case for a penalty, the matter is dealt with by section 26, which says how the penalty is to be applied. So far as official prosecutions go (and we are to assume that this is an official prosecution), the first part of section 26 down to the word "notwithstanding" provides in clear and unambiguous language that the penalty is to be paid to the authority whom the prosecuting official represents. By the latter part of the section, in the case of a non-official prosecution the penalty is to go according to the existing law. That was the state of things up to the passing of the Margarine Act, 1887, when by section 11 of that Act a supplementary provision was made that any part of the penalty might, if the Court should so direct, be paid to the person who proceeded for the same. There is nothing inconsistent between this section and the Act of 1875. Upon the second point I think that section 26 of the Act of 1875 is incorporated into the Act of 1887. Mr. Sutton argued that section 47 of 2 and 3 Victoria, chapter 71, is still operative law with regard to penalties recovered in a prosecution under the Margarine Act, 1887, and he cited the case of "Wray v. Ellis." I think that case distinguishable. The language of the statute upon which that case was decided was different from that which is to be found in the present statute. In my opinion, therefore, the receiver for the metropolitan police district is not entitled to the penalty. The *mandamus* must therefore go.

Mr. Justice Charles concurred.

Rule absolute for *mandamus* accordingly.

PROSECUTION UNDER THE FERTILISERS' ACT.

At Worcester County Petty Sessions, Peter White, corn merchant, 30, Brunswick-street, Liverpool, was summoned for five offences under the Fertilisers and Feeding Stuffs Act, 1893. The summonses alleged that on February 6 the defendant sold to John May, farmer, Ombersley, two tons of pig meal, without giving on or before the sale an invoice as required by the Act; that the invoice which he gave was false in a material particular, to the prejudice of the purchaser, in stating that the pig meal was the offal of sound wheat; and that the meal, sold as food for cattle, contained an ingredient deleterious to cattle, viz., a large quantity of sand, not disclosed at the time of sale. The fifth summons described the sand as "an ingredient worthless for feeding purposes." Mr. S. Thornley, Acting Clerk of the County Council, prosecuted, and the defendant was not professionally represented.

The defendant agreed that the cases should be taken together. He alleged that the sale took place in Liverpool and raised the question of jurisdiction.

The Bench over-ruled the objection until they had heard the evidence.

Mr. Thornley, in opening the case, stated that this was the first prosecution in the county under the Act. In October, 1894, the defendant wrote to a Worcester newspaper, giving instructions for the insertion of an advertisement of "pig meal, the offal of sound wheat." The complainant, seeing the advertisement, sent an order for two tons of the meal at 42s. per ton, and on February 6 it was delivered at Hartlebury Station. The complainant began to feed his pigs with the meal, and the result was that it made them very ill, and Mr. May had to discontinue using it. Subsequently samples of the meal were taken as required by the regulations of the Board of Agriculture under the Act. Dr. Voelcker, District Agricultural Analyst for the county, and the Analyst of the Royal Agricultural Society, analysed a sample sent to him, with the result that he found it contained 21.60 per cent. of sand. The case came before the County Council, who decided to prosecute.

Mr. John May, a retired private of the Royal Artillery, and farmer, of Ombersley, gave evidence of the order being sent by post and the delivery of the goods. He also proved sending samples as required by the Act, one sample being sent to the defendant. He stated that the meal caused the pigs to vomit and to become costive, and he had to discontinue its use. He used it with grains and the usual wash.

Cross-examined by the defendant, the witness said he had been accustomed to give £6 15s. per ton for sharps for pig food. The defendant asked him what he expected to get for 42s. The complainant replied that he had expected to get "the offal of sound wheat," as advertised, but he did not know how many offals there were from wheat.

The defendant pointed out that upon the invoice he stated that the meal was sometimes used alone, but most of his customers used it with potatoes.

After Mr. Thornley's cross-examination defendant was permitted by the Bench to put another question to the witness, and raised a technical point that the Act required the sample to be taken within 10 days of the receipt of the article. In this case the pig meal was received on February 5 and the sample was not taken until February 18.

Mr. Thornley read the Board of Agriculture's regulations, which said that within 10 days of the receipt of the article or the invoice the purchaser must take a sample or give notice to the district analyst that he wished a sample to be taken by the district analyst.

The Magistrates' Clerk said that neither of these alternatives had been carried out.

Mr. Thornley contended that complainant had satisfied the regulation. He received the invoice on February 6, and on February 13 gave written notice to defendant that he intended to take a sample at a certain time, on February 15. He received a reply, which defendant admitted was written at his request, saying that defendant was ill, but hoped to be able to attend to the matter on Monday. In consequence of that the drawing of samples was postponed to February 18 in order to be perfectly fair to defendant, and give him an opportunity of attending.

The Bench decided that the objection was good, and said in all the five cases defendant would be discharged.

Mr. Thornley applied for a case to be stated on the point for the opinion of the High Court, but this the Bench refused.

They also refused to allow defendant his costs.

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—*Times.*

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Food and Sanitation.

SATURDAY, MAY 18TH, 1895.

BEER SWINDLES AND PARLIAMENT.

It was an unfortunate thing for agriculture as well as for beer drinkers that the important question of pure beer was raised in the House of Commons by Mr. Cuthbert Quilter. Of real knowledge of the subject Mr. Quilter possesses none whatever, and the natural result was that opponents of pure beer piled mis-statement upon mis-statement without any of the members of Parliament who are supposed to represent agricultural interests being able to correct them. Take, as an example, one—"That four-fifths of all beer brewed is genuine malt and hops, *i.e.*, pure beer." This was the Chancellor of the Exchequer's main argument. We

would insult the intelligence of any of our readers if we asked them to accept as worth an atom of belief so false a statement. In place of *four-fifths* of all beer being genuine malt and hop beer, there is not a *twentieth* of the beer brewed and sold to the public that is such. Not even the Burton beers are any longer genuine malt and hop beers, the brewers there having followed the fraud-beaten path made by Mr. Gladstone in 1880, when he abolished the malt tax, and gave the brewer liberty to make beer from any chemicals, sugar, rice, or other substance he chose to employ. The question is not a popular one, nor is it generally understood, but it has caused the throwing out of employment of thousands of English labourers, the robbery of beer drinkers who pay pure beer price for chemical swipes; and a loss of millions to English trade whilst enriching the employers of niggers. It has swollen the profits of tied-house owners, brewery company swindlers, and the all-powerful ring who, in addition to combining in themselves the beerage and a slice of the peerage, are sufficiently close to the Chancellor of the Exchequer's constituency to be dangerous to the right hon. gentleman's fixity of tenure. All the greater the pity that so really important a question should be left to so poor a champion as Mr. Cuthbert Quilter, destitute, not only of knowledge of his subject, but of even the courage to go to a division. The Stock Exchange, the law, beer, whisky, railways, the press, and many other interests are well and intelligently represented in Parliament. English trade alone is neglected, or made a laughing stock of by the ineptitude of those whose duty to their constituents should make them its most faithful watchdogs.

ADULTERATION PROSECUTIONS.

OATMEAL.

AT Thames Police-court, on May 8, Samuel Brown, grocer, of 375, Westferry-road, Millwall, was summoned by Mr. O. Foad, inspector under the Sale of Food and Drugs Act for the Poplar Board of Works, for selling oatmeal adulterated with 16 per cent. of barleymeal.—The defendant said it was impossible to sell oatmeal free from barleymeal, as "they grew together."—Mr. Mead, to the inspector: Is that to your prejudice?—Mr. Foad: I was not supplied with the article I asked for.—Mr. Mead: If you asked for a silver article and were supplied with a gold one would that be to your prejudice?—Mr. Foad: It would not be of the "nature, substance, and quality demanded."—Mr. Mead adjourned the case.

MARGARINE.

AT Kilmarnock, on May 8, Archibald Smith, New-street, Dalry, was charged under the Sale of Foods and Drugs Act with having, on March 29, sold to Thomas Currie, county sanitary inspector, one pound of butter which was deficient in substance and quality, in respect that it contained 80 per cent. or thereby of foreign fats. He pleaded not guilty. For the defence it was stated that accused had been from home, and that his wife, who was not accustomed to keep shop, had sold margarine for butter by mistake, the keg from which it was taken having just arrived. The Sheriff found the charge proved, and imposed a penalty of £2, or seven days' imprisonment. David Kennedy, grocer, New-street, Dalry, was charged with having contravened the Margarine Act by having, on March 29, exposed margarine for sale without having a label with the word "margarine" attached to it. He pleaded not guilty, but was convicted, and fined £2 or seven days' imprisonment.

AT Lambeth, on May 13, Thomas Hawkes, of Lambeth-walk, was summoned by David Toler for two offences under the Margarine Act.—Mr. Ricketts appeared in support of the summonses, and Mr. W. H. Armstrong defended.—The prosecution was instituted by the Butter Association. It was alleged that margarine was exposed for sale in the defendant's shop without being labelled, as required by the Act, and that a pound of it was sold to the complainant without a proper wrapper bearing the word "margarine" upon it. Mr. Armstrong said his client gave his employees definite instructions to comply with the provisions of the Act, but they failed to carry them out.—Mr. Hopkins fined the defendant 20s. and costs on each summons.

SPIRITS

AT Hallsham, on May 8, James Gatland, of the Star Inn, Alfriston, was summoned for selling adulterated whisky on March 20. Defendant was represented by Mr. Lawson Lewis, solicitor, and by his manager.—Mr. Bartlett proved the purchase of a half-pint of whisky at the Star Inn, one-third of which he forwarded to the Public Analyst, who had certified its alcoholic strength to be 27.6 degrees under proof, or 2.6 degrees below legal strength.—The Bench raised the question as to the identity of the sample to which the certificate applied with the sample sent.—Witness pointed out that the number on the bottle and the certificate corresponded, and the defence did not press for further proof.—George Chessman, defendant's manager at the Star, admitted serving the inspector with the whisky, and explained that a small quantity of the spirit brought into the bar had, through an act of forgetfulness on his part, been unduly "broken down." It was a mistake for which Mr. Gatland was in no sense to blame.—Mr. Lewis addressed the Bench on the facts, and the nominal penalty of 10s. and costs was inflicted.—The Bench expressed the opinion that further evidence of the identity of the samples sent with those analysed should be forthcoming, and requested the inspector to bring the matter before the Weights and Measures Committee of the County Council.—Henry Awcock, of the Black Horse, Wilmington, pleaded not guilty to selling half-a-pint of adulterated gin to the inspector on the same date. In this case the analyst certified that the sample was 9 degrees under legal strength. Defendant stated that the sample was from a small quantity which his wife, through the hurry of a customer, forgot to adjust to the legal strength.—Fined £1 and costs 9s.

COFFEE.

AT the Manchester City Police-court on May 8, before Dr. Armstrong and Mr. Swift, Charles Henry Scott, trading as Burgon and Company, 146, Stockport-road, Ardwick, was summoned under the sixth section of the Food and Drugs Act for selling adulterated coffee. Inspector Holland proved that on April 2 he went to the defendant's shop, 146, Stockport-road, and asked the defendant's manager for half-a-pound of coffee at 1s. 6d. per lb. The manager, knowing the inspector, asked whether he wanted pure coffee or coffee mixed with chicory. The inspector replied, "pure,"

and he was served from a box on the counter. The inspector afterwards made the usual division, and submitted a sample to Mr. Estcourt, the city analyst. The analyst's certificate was produced, which stated that the coffee contained 30 per cent. of foreign vegetable matter, probably chicory. Mr. Scott, jun., appeared, and admitted the adulteration, but stated that they could not account for it except through the gross negligence of their men at Ackers-street Mill, where the coffee was ground. The magistrates imposed a fine of 40s. and costs. Mr. Rook, superintendent of the Sanitary Department, Town Hall, prosecuted.

SPENT GINGER.

AT Malmesbury, on May 8, Albert Kent, grocer, of Oaksey, was summoned by Mr. Samuel Smith, Inspector under the Food and Drugs Act, charged with selling to him ½ lb. of powdered ginger, 30 per cent. of which had been abstracted. Mr. H. Bevir, solicitor, appeared on behalf of the County Council, and handed in the report of Mr. Gatehouse, the county analyst, showing that one-third of the ginger had been abstracted. He observed that doubtless Mr. Kent, the defendant, knew nothing about the adulteration. Samuel Smith, Inspector, stated that on March 25 last he called at defendant's shop at Oaksey, and asked for ½ lb. of ground ginger, Mrs. Kent (defendant's wife) served it, and he paid 10d., which was a fair price. He told her he purchased it for the purpose of having it analysed by the public analyst, and divided it into three parts. He then gave one part to Mrs. Kent and sent another part by registered parcel post to Mr. Gatehouse, whose certificate he received in due course. He never saw defendant until now. Defendant stated that he bought the ginger in a 7 lb. tin (produced) in October, 1892; since then he had never touched it for any fraudulent purpose. He asked the Bench to take a common sense view of the matter and to dispense justice, as he had in no way tried to evade the law or to act dishonestly. The Chairman told defendant it was a misfortune for him, but it was their duty to inflict a fine. He would be fined 10s., including costs.

CHEESE.

AT Kidderminster, on May 10, Mrs. Emily Edwards, grocer, of Dudley-street, was charged with having sold cheese not of the quality demanded by the purchaser. It was stated that the cheese, which was sold at 3½d. per lb., contained 50 per cent. of foreign fat. Defendant's husband said he bought the cheese as Cheddar at 2½d. per lb.—The Bench fined defendant £1 and £2 8s. costs.

MILK.

AT Plymouth, on May 9, the Plymouth Dalry Company were summoned by Mr. William James Addiscott, inspector, for milk adulteration.—Mr. Charles Edwin Bean, the borough analyst, stated that he had analysed the milk and found it contained 12 per cent. of added water.—The decision of the magistrates was £3 and costs.

WORKHOUSE MILK.

AT Worship-street, on May 10, the Friern Manor Farm Dairy Company, by the secretary, was summoned before Mr. Bushby, by order of the vestry of St. Leonard, Shoreditch, for supplying adulterated milk. Mr. W. T. Ricketts, solicitor for the defence, objected that as the manager of the company had been previously summoned for the offence, another person or other persons could not be substituted. Mr. Bushby overruled the objection. Mr. Robinson, vestry clerk for Shoreditch, called evidence to show that the Friern Manor Company supplied under contract with the Guardians milk to the workhouse and the Shoreditch Infirmary. A sample was taken on March 31 at the workhouse when delivery was being made. The certificate of the analyst showed that the milk was 30 per cent. deficient in cream. The contract specified that the milk should at no time be below 3 per cent. deficiency. The net deficiency was, therefore, 27 per cent. The evidence also showed that the defendant company had transferred their contract with the Guardians to Messrs. Abbott and Son, of Digby-road, Homerton, but without the consent of the Guardians. Mr. Ricketts read a clause in the contract, which imposed a penalty of £10 on the company in the event of milk below the standard being delivered. It was said that the Guardians would no doubt levy the penalty, and also, as was provided, they might terminate the contract. The Guardians did not recognise Messrs. Abbott in the matter, as it was said they had badly carried out a previous contract with them, and had been prosecuted. Mr. Ricketts said the milk was supplied by a farmer to Abbots, under a warrant with each churn. Mr. Bushby imposed a fine of 10s. on the company, with 12s. 6d. costs.

FOREIGN MILK AND DISEASE.

MR. SHAW LEFEVRE, replying to Mr. Lambert and Admiral Field, in the House of Commons on May 9, said that there was no evidence

that disease had been spread in this country by imported milk. With insignificant exceptions imported milk was in a condensed form, and the processes of heat to which it was subjected, he was advised, destroyed its powers to convey infection, whether of foot-and-mouth disease or tuberculosis. The Local Government Board had no power to prohibit the importation of foreign milk.

WHO WAS THE GOVERNMENT OFFICIAL?

At Brentford, on May 14, a curious case came on for hearing. John Gay, a milk seller, of Ealing, was summoned for selling milk deficient to the extent of 12 per cent. of natural fat.—William Randall, assistant to Mr. Tyler, the inspector of weights, etc., for western district of the county of Middlesex, said he purchased some milk from the defendant which he was delivering from a can. He paid 2d. for it.—Mr. W. Tyler, the inspector under the Food and Drugs Act, said, on April 11, he received a jug containing some milk from the last witness. He told the defendant's assistant for what purpose the purchase had been made, and he expressed a desire in answer to witness to have the milk divided into three parts. This was done, one part being given to the defendant, another retained by witness, and a third sent to the public analyst. Subsequently witness received the certificate (produced), stating that 12 per cent. of the fat had been abstracted, and that no change had taken place in the milk in transmission. In consequence of the receipt of that certificate, witness paid a visit to the defendant, who asked him to see the cows milked at any time, and then test the milk. This Mr. Tyler readily consented to do, and a date was fixed, but at the last moment defendant came to his (witness's) office and said that he did not desire him to see the cows milked, and that he had come to this decision after consultation with a government official (was this Somerset House?).—Defendant, who denied the offence, said he had been in business a number of years, and had had a number of samples taken which had proved of good quality.—Mr. Tyler said that was so, and it was because he was so much astonished at the certificate, that he was anxious to do all he could to assist the defendant by meeting him to see the cows milked. The milk in question was served from the shed, and he never even saw it.—The Clerk said if defendant wished it he could have the sample he had in his possession analysed at Somerset House, but he would have to pay the costs, which would be £1, if the certificate was against him.—The defendant said he would not do that, as it was not justice.—The magistrates imposed a fine of £1 and 17s. costs.

"OLIVE OIL" 100 PER CENT. OFF.

At the Clerkenwell Police Court, James Griffin, of 45, Park-street, Upper-street, was summoned for "selling olive oil containing 100 per cent. of oil other than olive oil." Edward Fortune, sanitary inspector in the employment of the Islington Vestry, said he entered the defendant's shop on the 1st April and asked for a bottle of olive oil. The defendant handed him a bottle of oil, for which he charged 3d. An analysis of the article proved it to be cotton-seed oil. The defendant denied that he sold the article as olive oil. He said the inspector asked him if he sold oil. Defendant said he had oil in bottles, but he did not know what it was. He handed the inspector a bottle of oil, and, after reading the label, Fortune said, "That will do," and paid for it. Cross-examined: He was not aware that the price of olive oil was 5s. or 6s. per gallon, while cotton-seed oil was 2s. 6d. per gallon. Mr. Horace Smith said he was not of opinion that the article was sold as olive oil, and dismissed the summons.

At the same court eight milk adulterators were summoned by the Islington authorities, and fined in sums from £10 to 8s.

REFUSING TO SELL FOR ANALYSIS.

At Skipton, on May 4, Thomas Hamer, general dealer, of Bolton, in Lancashire, was summoned at the instance of Arthur R. Randerson, inspector for the West Riding County Council under the Food and Drugs Act, for this offence.—Mr. W. Thompson defended.—The Inspector, having described the sections under which the proceedings were taken, stated that on the 19th of April last, at 6 o'clock in the evening, the defendant was in possession of a stall in High-street, Skipton, which was laden with cheeses for sale. Some of the cheeses were whole and others were cut up. Witness went up to him, accompanied by P.C. Wakefield, and asked to be supplied with a pound of the cheese which was labelled 6d. per lb. Although witness tendered the money, the defendant refused to serve him, and used some very abusive language. Witness told defendant why he wanted the cheese, and showed him his card. Defendant afterwards followed the Inspector into an adjoining house, and wished to "square" the matter, but the latter would not have anything more to do with him.—P.C. Wakefield corroborated the Inspector's evidence.—For the defence, Mr. Thompson said that the clause under which the proceedings were taken applied only to retail dealers, whilst the defendant was a wholesale dealer. Besides, Mr. Randerson had taken away the defendant's weights to be examined, and defendant was unable to supply him with what he required. Mr. Thompson further stated that defen-

dant was a wholesale dealer in a large way, and had come to Skipton to endeavour to form a connection.—The Bench were of opinion that the defendant was not a wholesale dealer, and they fined him 20s. and 12s. 3d. costs.—For the defendant, Mr. Thompson made an appeal for time to pay the fine, and upon 10s. being paid into Court, the balance was left over on condition that Mr. Thompson should see that it was paid.

A BELFAST SOLICITOR ON THE "HIGH HORSE."

Mr. McERLEAN is apparently a solicitor, and, no doubt, knows as well as anyone that vendors take care to supply purchasers with genuine articles if such purchasers are known to be inspectors. The following case at Belfast, with Mr. McErlean's "holty toity" style, will amuse our readers:—

John Gamble, grocer, Comber-place, Crumlin-road, was summoned by David M'Master, inspector under the Food and Drugs Act, for having sold margarine as butter to a Mrs. Isdale on April 13 last. Mr. Spiller prosecuted, and Mr. McErlean defended.—The inspector stated that shortly after eight o'clock on the 13th ult. he sent a Mrs. Isdale into Gamble's shop with certain instructions. On receiving a signal from her he went into the shop, and took from her what appeared to be a pound of butter, and told Gamble, who was behind the counter, that he was the inspector, and had ordered the substance to be purchased for the purpose of analysis. The defendant made no remarks further than stating that he supposed that if anything was wrong he would hear about it. The certificate from Professor Hodges, the city analyst, showed that the sample was margarine, and not butter. The sum of 1s. 1d. was paid for the article. The defendant did not deal in margarine.—Cross-examined by Mr. McErlean: He was in the employment of the Belfast Corporation, and he had instructions to pay anyone he liked to act as his agent.—Mr. McErlean: Is the lady also paid out of the rates?—Witness: Yes.—Is it a nice wee spot when you get there. You can "do" for a number of friends. Is she married? Yes. And what does her husband work at? He is in the employment of the Corporation as a sanitary officer.—On your oath, but for your action and that of the lady would there have been any violation of the law on the occasion? I dare say not; he would not have been here, at any rate.—Mr. Spiller: And if you had not adopted those means would you have detected him? Witness: No.—Mrs. Isdale deposed to having gone into the shop of the defendant on the day in question. Gamble was behind the counter, and she asked him for bacon, cheese, and a pound of butter. He gave her what appeared to be butter, and she paid him 1s. 1d. for it. M'Master then came in, and she handed it over to him.—Mr. McErlean, for the defence, said he believed the law of the country, ordinarily speaking, had been founded on fair principles, but to use the law to compel people to commit crime, in his opinion, was not justifiable, and, if that was so, was certainly not legal. He was certain they would not sanction the trapping of parties into a violation of the law.—Mr. Hodder: Your contention is that when an inspector goes into a shop he is to say he is a Government inspector, and if the shopkeeper sold him anything but pure butter he would be summoned. If that were the case there would be few prosecutions. The shopkeepers could protect themselves by dealing honestly.—Mr. McErlean said that it would be far better to let a minor offence go undetected than to have the whole community corrupted. His client was a respectable trader, and he had purchased the substance as butter in the local market, and had sold it as such.—Evidence having been given as to the purchase of the article, the Chairman said that according to the 6th section of the Act there was no defence. The inspector was quite justified in employing an agent to obtain samples for him. They would fine the defendant 25 and costs.—Mr. Pim desired to know why the Corporation allowed margarine to be sold in the butter market.—Mr. Spiller was unable to answer the question.—Joy Davis, provision merchant, 19, Newtownards-road, and David Carlisle, of Messrs. M'Cormick and Carlisle, 101, Durham-street, were fined in like amounts for similar offences.

GOVENTRY AND ADULTERATION.

THE City Analyst (Dr. A. Bostock Hill) presented the following report:—

"County Analyst's Laboratory,
"Unity Buildings, Temple-street,
"Birmingham, April 9, 1895.

"To the Town Council of the City of Coventry.

"Mr. Mayor and Gentlemen,—I beg to report that during the last quarter thirty-four samples of food and drugs have been submitted to me for analysis by Inspector Clarke. The samples consisted of the following articles: Milk 15, butter 4, sweets 2, mustard 1, pepper 1, preserved peas 1, compound tincture of camphor 1, whisky 7, rum 1, and gin 1. Of the 15 samples of milk three, or twenty per cent., were adulterated, one by the addition of 15 per cent. of added water, and two by the abstraction of fat. All three vendors were summoned and convicted. Five of the samples of whisky contained more water than is allowed by law.—(Mr. Drinkwater: 'Shameful' and laughter)—the excess varying from

2 to 33 per cent. The sample of rum was also adulterated with 9 per cent. of water. The sample of preserved peas was, as is frequently the case, coloured with copper, the amount present being equal to 2.6 grains per pound of peas of sulphate of copper. Although I am of opinion that even in such amount the presence of copper is very undesirable, still, looking at the results of some recent prosecutions, I did not recommend that the vendors should be prosecuted. The other samples were genuine.

"The total number of samples found adulterated was 9, giving the very high percentage of 26."

ST. SAVIOUR'S BOARD OF WORKS AND ADULTERATION.

Mr. BODMER (the public analyst) reported that during the quarter ending March 25 he had received from Inspector Grist twenty samples of food. They consisted of two of cocoa, two of coffee, three of gin, ten of milk, and three of whisky. Both samples of cocoa were genuine. One sample of coffee was genuine, and one contained 60 per cent. of chicory. One sample of gin was genuine; one had been watered down to 41 per cent. under proof; the third was slightly diluted. Six samples of milk were genuine, and four were adulterated with added water to the extent of 18, 8, 6, and 5 per cent. respectively. All three samples of whisky were genuine.

Dr. Herron (medical officer of health) explained that it was very unsatisfactory that the fines under the Margarine Act were handed over to the police, instead of to the Board of Works, with the result that the latter body was out of pocket in respect of these prosecutions.

The analyst's report was referred to the Sanitary Committee.

DEATH FROM TINNED SALMON.

AN inquest was held at Littleham, near Exmouth, on May 7, touching the death of Mrs. Lucy Hart, aged 59, who died on Sunday from what was supposed to be poisoning from eating tinned salmon. Emma Hart, stepdaughter of deceased, said during her mother's illness she made no complaint to witness with regard to eating tinned salmon. She died on Sunday afternoon. Charlotte Hillman, a neighbour, said that on Saturday evening (April 27) deceased came into her house, and witness and deceased partook of some tinned salmon. It had no ill effects on witness. Deceased was taken ill on Wednesday night. Dr. Lee Shapland stated that he saw deceased on Thursday evening, when she was in a state of collapse. A *post-mortem* examination proved beyond doubt that deceased died from an irritant poison, in his opinion caused by eating tinned salmon, which produced inflammation of the bowels and mortification of the intestines. The jury returned a verdict accordingly.

FRENCH PEAS CONTAINING BLUE VITRIOL.

THE report of Mr. William Ackroyd, public analyst to the Halifax Corporation, just issued, states that during the year 207 samples of food and drugs have been analysed and one sample of disinfectant. Of these 178 were found to be genuine, 15 doubtful, and 14 adulterated. The percentage of adulterated samples was higher than it had been since 1890. Six prosecutions had been undertaken during the year for milk adulteration, and a conviction followed in each case. The fines imposed were £10, £5, and in four cases 40s., respectively. The butters examined were genuine so far as the fat was concerned, but the amount of water in three of them was excessive. As regards French peas, the report says "too much publicity cannot be given to the fact that French canned peas—*petits pois*—contain blue vitriol; that the practice of putting in this substance is illegal in France, although winked at, and that these coppered peas are actually known in the trade as "*petits pois à l'Anglais*." The report adds "only one sample has been brought for examination by a bargess."

MORE AWARDS FOR JEYES' DISINFECTANTS.

JEYES' SANITARY COMPOUNDS Co. have recently been awarded three gold medals at the following exhibitions, viz.:—General Trades and Industrial Exhibition, Halifax; Brewers' Exhibition, Manchester; General Trades and Industrial Exhibition, Stockton-on-Tees, bringing up the total number of their awards to 72. Colonel N. Macklanon, of the National Rifle Association, has written to Jeyes' Co.:—"The Council will be glad if you will undertake again the work of disinfection of the Camp at Bisley, and feel satisfied it will be done with the same efficiency as in former years."

SUFFOLK AND ADULTERATION.

THE Superintendent's report to the County Council as to the analyses of samples taken in the Eye Division showed that one sample of lard contained 65 per cent. of moisture, and the quantity of water in five samples of butter varied from 10.73 to 15.82 per

cent. The Magistrates' Clerks, however, considered that there was not sufficient adulteration to justify a prosecution in any of these cases.—Mr. A. Adams said that the Somerset House authorities allowed a margin of 10 per cent. of adulteration.—The Chairman said he did not think that discretionary power in this matter should be vested in the Magistrates' Clerks, but that the analyst should attach a note to his report and give his opinion. If no proceedings were to be taken, they had better give up having the analyses taken.—Mr. A. M. Bernard said that this very question was discussed at the far end of the last meeting, and it was resolved to ask the analyst to make in future some general remark on the degree of adulteration, if any, on each sample.—The subject then dropped.

STIRLING COUNTY COUNCIL AND THE FOOD AND DRUGS ACTS.

THE Finance and General Purposes Committee submitted a report on the above matter, in which they recommended the County Council to resolve "that the necessary action be taken in order to the enforcement of the provisions of these Acts within the county, which, for this purpose, includes the police burghs of Bridge of Allan, Denny and Dunipace, Grangemouth and Kilsyth. The first step is the appointment of an analyst, and the next, the arrangements for the procuring of samples of food or drugs for analysis. If the Council adopt this recommendation, they may remit the matter to this committee with such powers as may be considered expedient."

On the suggestion of the Chairman, the report and recommendation were adopted.

KENT COUNTY COUNCIL ANALYST'S REPORT.

DR. M. A. ADAMS has reported to Kent County Council upon the analysis of 329 samples of food received during the first quarter of 1895 under the provisions of this Act; of this number 28 were adulterated, to which must be added three samples of butter substitutes exposed for sale without a margarine label, making in all 31 offences—a rate of 9.42 per cent.

The adulterated articles comprised butter, brandy, whisky, rum, gin, milk, and ginger. The degree of adulteration in some cases was excessive; in four several instances butter was falsified with foreign fat to the extent of 85, 90, 95, 100 per cent. respectively.

In one case milk had been adulterated to at least 39 per cent., the calculation being based not upon an average quality, but upon the lowest permissible quality for genuine milk; there were other cases of 8, 10, and 12 per cent. watering, but the first mentioned is certainly the most audacious of its kind that we have recently come across.

In respect to *milk adulteration* I wish to remark that a change of method has come about during the last few years; formerly the practice was to add water pure and simple. Nowadays the commonest mode of fraud is the admixture of centrifugalized milk with whole milk. Commercially, the one is almost as great a fraud as the other; "*separated milk*," as it is called, is of almost no commercial value, the producer having made his profit out of the milk either in the shape of butter or cream. In honestly-conducted dairies the residue, neither more nor less than butter-milk, is either thrown away or given to the pigs; contrariwise, when added to and sold at the price of whole milk it brings a large and illegitimate profit. Unfortunately for us, from an analytical point of view, detection of this description of fraud is very difficult, indeed, within certain limits, impossible. When water pure and simple is added to milk, the relative proportion of the constituents of the mixture are so disarranged that detection of the fraud is facilitated; on the other hand, by the addition of separated milk, which in point of fact is milk serum, the physical properties, specific gravity and others in the main are undisturbed, and detection of the fraud obscured; so that it comes to be far more important now than formerly that a high standard for fat shall be maintained. For this reason it is more than ever my duty to condemn, and I trust the justices will support my condemnation of samples of milk exhibiting poverty in fat, bearing in mind that when my certificate denotes a deprivation, say, of 50 per cent. of fat, the probability is that the milk is 70, or more perhaps, short; this discrepancy arising from the fact that of all the constituents of milk, the fat is the most variable item, and our certificate is bound to be based not upon an average, far less a maximum, standard, but one so low as to avoid the possibility of injustice.

I wish to say a word on the subject of *excess of water in butter*; this is a matter which has engaged my particular attention. In every case I have estimated the amount of water present; in several instances it was a trifle over 16 per cent. This is the figure mentioned in evidence before the House of Commons' Committee on Food Adulteration by the Somerset House chemists. It is an arbitrary limit and a generous one, so far as the trader is concerned; hitherto we have been without any guide in this matter. For the future I shall certify against all samples of butter with water exceeding this limit.

The adulteration of ginger, for the first time, finds a place in my report. The present instance is an example of modern ingenuity, whereby genuine ginger, having done duty in the manufacture of

ginger beer or some such article, and consequently having in great measure been deprived of its virtue, has been dried, ground up, and the exhausted substance sold as though it were the genuine article in its natural condition, reminding one of the old dodge of selling re-rolled exhausted tea leaves.

The defence, I understand, was that the article was bought by the dealer in the same condition as it was sold to his customer. If that is a valid excuse, the offence can seldom, if ever, be vindicated; the public must suffer, whilst the impudent cheat goes scot free.

LEICESTER AND ADULTERATION.

DR. JOSEPH PRIMSTLEY, Medical Officer of Health and Public Analyst for Leicester, has reported that a larger number of samples have been analysed, under the provisions of the Food and Drugs and Margarine Acts, during 1894, than in any previous year, viz : 400, of which 36 were found to be adulterated, *i.e.*, 9 per cent. 21 prosecutions have been instituted against the vendors, and the fines have amounted to £36 13s. od. (exclusive of costs). Seven vendors were written to and cautioned by the Committee in connection with adulterated spirits. 196 samples of milk (out of a total of 212) were found to be unadulterated, the remaining 16 being adulterated with 4, 4, 4, 4, 5, 5, 6, 6, 6, 7, 9, 10, 18, and 24 per cent. of added water, 4 and 4 per cent. of cream abstracted, respectively. There were 10 prosecutions, and the total fines inflicted were £14 3s. od. In six cases no action was taken. On the whole the quality of the milk in Leicester during 1894 has been fair; in some cases exceptionally good. Doubtless the large number of samples taken and the activity generally of the inspectors have brought about this change, which, it is to be hoped, will continue.

A large number of the milk samples were taken at the railway stations, *i.e.*, whilst the milk was in transit from the farmer to the retailer.

Six samples of condensed milk were analysed and found to be genuine, *i.e.*, of the nature stated on the label. In one instance, the label (in very small print) stated that the tin contained milk with "some" of its cream extracted; and on analysis such was certainly found to be the case, for 95 per cent. of the cream was missing!

One sample of skimmed milk on analysis was found to have been not only skimmed to the extent of 75 per cent. of its cream, but also watered up to the extent of 10 per cent. No action, however, was taken by the Committee in this case. Of 132 samples of butter 10 were adulterated with 65, 85, 85, 85, 90, 90, 90, 90, 90 per cent. respectively of foreign fat, other than butter fat. There were nine prosecutions, and the total fines were £18 10s.; whilst one summons was withdrawn. In no case was the amount of water more than 20 per cent., but in several cases there was reason for believing that adulteration with foreign fat to the extent of about 8 per cent., had been practised. Such a small adulteration, cannot, unfortunately, be taken into Court, owing to the low standards adopted, but it is well known that the profits must be considerable in the case of large wholesale traders in such mixtures.

Six samples of lard were all found to be adulterated, as were also the samples of pepper, mustard, bread, and arrowroot.

Of 12 samples of spirits analysed 9 were found to be adulterated with water to the extent of 1.1, 1.1, 1.5, 1.6, 2.1, 2.2, 2.7, 4.0, and 4.1 degrees respectively below the amount allowed by law, *i.e.*, 25 degrees under proof for brandy, whisky, and rum, and 35 degrees under proof for gin. In only two cases were prosecutions instituted (owing to the smallness of the amount of adulteration), with total fines of £4. Seven other vendors were written to and cautioned by the Committee.

Five samples of beer were found on analysis to be unadulterated.

One sample of milk and one of butter were submitted to me privately for analysis, and the usual fees (10s. 6d. in each case) paid to the Corporation. Both were found to be unadulterated.

A sample of coffee submitted by the Watch Committee was found on analysis to be a mixture of coffee and chicory.

THE ADULTERATION ACTS IN DERBYSHIRE.

MR. JOHN WHITE, F.I.C., county analyst, reports that during the quarter ending March 7, 237 samples of food and drugs have been submitted for analysis.

The samples comprised the following articles:—

Milk	49	Yeast	8
Butter	24	Rum	15
Lard	10	Whisky	11
Coffee	26	Gin	5
Oatmeal	26	Brandy	2
Flour	6	Vinegar	3
Mustard	5	Sweetmeats	1
Pepper	1	Tincture of Rhubarb	12
Ground Ginger	9	Cream of Tartar	3
Sugar	2	Tartaric Acid	1
Arrowroot	3	Spirits of Nitrous Ether	2
Corn Flour	2	Bicarbonate of Soda	3
Pearl Barley	2	Linseed Meal	1
Caper Tea	2	Paregoric	1
Ground Rice	1	Soda Water	1

This is a very wide and a most comprehensive list, and is

evidence that the Act is being worked systematically and with discrimination.

Five of the 49 samples of milk proved on analysis to be adulterated, one containing 10 per cent. of added water, while four were deficient in fat, the amount of such deficiency varying from 13 to 28 per cent. Besides these, seven other samples were of decidedly low and inferior quality.

Two samples of butter were adulterated, in each case 95 per cent. of the fat present being foreign to butter. These were consequently specimens of margarine, and their sale would be a source of unlawful profit to the vendor. There is another aspect of adulteration such as this, which is unfortunately very frequently lost sight of when the matter is under consideration, and that is, the hardship to the honest tradesman, resulting from this illegitimate competition. When to this is added the fraud upon the purchaser, it is obvious that the welfare of the community demands the use of strong and repressive measures to suppress adulteration.

The sale of adulterated coffee in the county is apparently still a frequent practice, no less than six of the 26 samples received containing chicory. The quantity added varied from 30 to 90 per cent, while another sample contained 75 per cent. The sale of mixtures containing 75 and 90 per cent. of chicory as genuine coffee is a flagrant example of fraud, and it is chiefly the poorer classes who suffer by this deception. The price at which these mixtures are sold often bears no relation to their value, and though the article containing 90 per cent. of chicory was sold at the comparatively low price of 1s. per pound, even this is far too much for the purchaser to pay for such rubbish; a large margin still remaining for illicit profit.

Five samples of oatmeal were adulterated with maize to the extent of 3 per cent, and it is a significant fact that the whole of the samples (eight in number) which during the last two quarters I have certified to contain this adulterant were bought in the first instance from the same manufacturer. Convictions for the offence have been already obtained in five instances, and three others await hearing. The result is that samples of oatmeal purchased latterly, and stated to be derived from the same source, did not contain maize. Here is direct evidence of benefit resulting from the vigorous application of the provisions of the Act.

One sample of mustard had been adulterated with 10 per cent. of wheat starch, a small amount of turmeric having also been added to restore the colour of the mixture. As to whether the adulteration of mustard in this way should be regarded as a serious offence, there appears to be some conflict of opinion. In my own opinion, if a vendor sells one of these mixtures as genuine mustard, he undoubtedly infringes Section 6 of the Act, as the article supplied in such an event is "not of the nature, substance and quality demanded." Nor does it appear to me to be any excuse to say that as these mixtures are articles of commerce they should be permitted to be sold as mustard. At least one firm of high standing and repute sells nothing but genuine mustard, unmixed with any starch, while the firm which, perhaps, does the most extensive trade in these mixed mustards also sells a genuine article, which high-class grocers always stock. It is sometimes stated that the reason for mixing starch with mustard is to render the article more palatable, and to improve its keeping qualities. I do not think these statements can be supported by evidence, while it is certain that such an admixture materially reduces the value of the substance for medical purposes. To show that the sale of genuine mustard is not so rare as seems to be generally supposed, in the year 1893, of 696 samples of mustard analysed under the Act, only 54, or 7.7 per cent., proved to be adulterated. These figures are taken from the Report of the Local Government Board.

One sample of yeast contained 15 per cent. of potato starch, The other samples were genuine.

One sample of rum had been adulterated by the addition of 22 per cent. of water over and above the quantity necessary to reduce the spirit to 25 degrees under proof, which is the lowest legal limit. This is a particularly gross instance of fraud, the purchaser actually paying about 2½d. for water out of each shilling expended.

One sample of vinegar proved to be adulterated with 30 per cent. of added water, while at least 50 per cent. of the acetic acid present was derived neither from malted nor unmalted grain. This was a specimen of the fictitious vinegars which have come into the market within the last year or two.

Two of the 12 samples of tincture of rhubarb had been adulterated. One was deficient of 20 per cent. of proof spirit, and was also almost destitute of saffron. The other was deficient of one-third of its solid ingredients, and was entirely devoid of saffron. The deficiency in spirit was probably brought about by the addition of water to the tincture, and the deficiency in solid matter was probably due to improper manufacture. The reason for leaving out the saffron is that this is far the most expensive ingredient. Two other samples were of inferior quality.

The whole of the other articles received proved on analysis to be genuine.

The total number of adulterated samples was 24, which gives a percentage of 10.1, as compared with 16.3 for the previous quarter.

THE NAVY VINEGAR CONTRACT.

THIS important contract has again been secured by the old-established firm of vinegar brewers, Messrs. R. and N. Pott, Sumner-street, Southwark, London.

THE INTERNATIONAL SYSTEM OF SEWAGE PURIFICATION.

The Corporation of the city of Durham have, out of 12 competitive schemes, selected three for consideration, two of which are based upon the system of the International Water and Sewage Purification Co., Ltd., of 7, Victoria-street, London.

The first premium of £100 has been awarded to "Valves"—Messrs. Lomax and Lomax, of Manchester—whose plans embody the international process, *i.e.*, treatment with ferrozone in the Candy circular upward-flow tanks, and filtration through polarite.

SELECT COMMITTEE ON ADULTERATION.

CONTINUATION OF MR. SMITH'S EVIDENCE.

XLV.

(Continued from page 142.)

What aroused the suspicion as to there being a mixture of margarine with the butter?—I think some neighbours had remarked the peculiarity of the man selling so much butter and keeping so few cows, and they called the attention of the inspector to the fact.—It was not the taste of the mixture or the appearance of it?—I have no definite knowledge, but I think that the first suggestion which I made was the correct one.—Therefore we may take it that, so far as you know, this farmer was able in his own place to make a mixture which he sold in the country places as new butter?—He had succeeded in inducing the public to buy it out of his baskets in various public markets.—So far as you know, he had no machinery?—So far as I know; he might have had a small separator.—There is one other point that I want to put to you; at present under the Margarine Act the packages in which margarine has to be sold, have to be lettered?—Yes.—And it is suggested that the size of the letters should be increased I take it that the object of the lettering is to enable the buyer to know what article he is buying?—That is so.—For no other reason, I take it, is that clause in the Act?—That is so.—I ask you whether in your opinion the buyer would not be more effectively protected if it was laid down that the packages in which margarine was sold, and the vessels in which it was delivered, should be coloured, say, red; would it not be easier for any uneducated person or child purchasing margarine to know whether it was margarine or not if it had to be sold in packages coloured red?—It would, but I am not sure that it would be invidious to the margarine sellers.—Is it not the fact, from your experience, that there are certain articles of food now which the producers sell in certain coloured wrappers for their own purposes; their articles are good, and they wish the public to know it?—That is so.—Can you give us any particular article that is sold in any particular coloured wrapper?—I think soaps are; I think so, I am not certain. Mr. Whiteley: Is it not only poisonous drugs that are so sold?—I have no knowledge of that; what I meant was that I quite understand that for the purpose of advertisement the sellers of any article might use a prominent wrapper; but I take it that the seller of margarine would never think of doing so, from the fact that he is selling something which he would not so easily sell as something else.—Mr. Yerburgh: Then upon the question of the label that we had just now in the condensed milk case, I did not quite understand what the ruling of the judge was in that case?—The judge, the late Lord Chief Justice, held that the public was protected by the label very much, as the label said that it was *condensed milk*; it is called in the trade "protection by label." Then, taking your view as a member of the community, do you think that you would be better protected in purchasing condensed milk which was made from skimmed milk if everything else were prohibited upon the label but the words "condensed skimmed milk"?—I think we cannot prohibit the sale of skimmed milk, or condensed skimmed milk; but the word "skimmed" should be made so prominent that it would be totally impossible for a buyer to buy either milk in the can in the streets, or the condensed article, without seeing clear before him the word "skimmed" in very prominent letters. I hold that the word "skimmed" on that particular label is not prominent.—What I want to ask you upon that point is this: do you think that the purveyors of this condensed skimmed milk would be damaged at all if, under the law, they were only permitted to put upon their tins "condensed skimmed milk"?—Without anything else?—Yes.—With the word "skimmed" much larger than the word "milk"?—Precisely.—Yes; I think there would be no odium in that.—You do not think that that could in any way injure the trade?—I think not; the legitimate trade.—Mr. Colman: You have told us something about some of these precautions for margarine, and that you had got at the wholesale dealers, I think you said?—There was one case at Tamworth, where we got at the man in Birmingham.—Is that the only case?—I think not; I think we have had two or three, but I am not able to tell you where.—In that case, do you say that the invoice described the article as butter?—Yes. The

defendant who was prosecuted was able to prove that he was an innocent seller of the margarine, because he had bought it for what it was not.—He had purchased it as butter, and it was invoiced to him as butter?—Yes.—And then he was let off?—With a small fine.—He was fined?—Yes, with a small fine.—What was done as to the wholesale dealer?—In one case he was fined £20, but it is very difficult to get at him.—Do you know whether the retailer who sold it, sold it with a label in any way, or did he sell it simply under a verbal statement?—He sold it as butter.—Did he sell it with a label on it or simply under a verbal statement?—I take it that there was no label if he sold it as butter. That I do not know, but I take it that there would be no label.—Mr. Whiteley: You say that you are in favour of the inspection of all food stuffs at the port of entry?—Yes.—Have you made any estimate of what the cost of the inspection of all food stuffs would come to?—No; in saying all food stuffs perhaps I went a little too far; but I take it that the check should be so great that it would imply that the importations of all foods went under the same examination as the importation of tea. I do not know that every packet of tea is sampled.—Could you tell by inspection what the component parts of a cargo of butter, or so-called butter, were?—Certainly not.—You would have to resort to analysis?—Yes.—And I suppose that the analysis routine is rather a lengthy one?—That is so.—Taking from 36 to 48 hours?—That I do not know.—Is butter like port wine; improved by keeping?—I can get an analysis of milk in six hours.—But the analysis of butter, I think we were told took 36 hours?—I do not know.—At any rate during the time that the analysis was being made, the butter, or so-called butter, would have to lie by?—Yes, the whole consignment would have to lie by.—I suppose that you would not call it adulterated butter if it were imported for sale as margarine?—No, especially if it was uncoloured.—Are you aware that since January 1893 the Customs have, from information received, only received one parcel of butter at the port of entry which was found to be adulterated?—I was not aware of that. Under what section did they take the sample?—I suppose they took it under the Margarine Act?—No, they cannot.—You say that in certain districts the existing legislation is inoperative, I think?—Because of the inactivity of the local authorities.—Because of the supineness of the local authority?—Yes.—But where the local authorities are active, you think that the existing legislation is sufficient to check adulteration? My inspector says that no amount of inspection can put it down. These are his words: "no amount of inspection can effect very much good, as the inspectors are known, and strange customers looked upon with suspicion." That is applicable to margarine.—Your complaint is against the local authorities, I suppose?—One of my complaints; but here an active officer of an active local authority says that his inspection is not very efficient, inasmuch as he is always looked upon with suspicion when he takes samples; and he goes on to say that if margarine was not sold under a colourable imitation of butter, that difficulty would be done away with.—I suppose that the inspector can get samples taken by other people?—Yes; this man employs a woman.—Therefore he is not in any way tied or bound as to the manner in which he obtains samples?—Except by the matter of expense.—Then I suppose it is the question of expense that deters the local authorities from putting in force these Acts?—And the interest of some of the local authorities.—I suppose that the local authorities represent the people; they are practically the people in the various districts?—Yes, they are.—Therefore you argue that if the people are not willing to spend money to protect themselves for their own interests against adulteration, they ought to be forced to do so in the interests of the farmers and agriculturists of this kingdom?—In the interests of public honesty, in the interests of the consumer as well as of the farmer.—If they are not willing to do it for their own sakes, they ought to be obliged to do it for the sake of somebody else, you think?—As a farmer, and as an administrator of the Contagious Diseases (Animals) Act, I have to find fault with farmers themselves, because they are so supine in carrying out their powers under that Act.—Now as to the question of skimmed milk; I see upon this label that the words "skimmed milk" are at least a quarter of an inch large?—They are very narrow and thin.—Notwithstanding that in the remarks of the late Lord Chief Justice, he calls them as plain as a pikestaff; these are his words. He says: "Here, as plain as a pikestaff is written 'Skimmed Milk,' and the magistrates say that the conversation with the shopman did not convey to the inspector, nor did he in fact know, that the article was skimmed. If he did not choose to read it, how could the conversation alter it?"—I am aware of that.—And the Lord Chief Justice adds: "The provisions of this Act are, very rightly, very stringent, because it is for the interest of the public that these drugs, and milk, and so on, should be sold pure." I suppose skimmed milk you look upon as a valuable article of food?—I do not.—Then you disagree with former witnesses who have said that it was highly nutritious, and good for bone and tissue?—Did any farmer say so? No, an analyst said so?—My experience as a feeder of pigs and calves is, that it is a very dangerous food to use.—I suppose that skimmed milk retains all the nitrogenous properties of milk?—It would kill young animals, from babies to calves and young pigs, unless fat, in substitution of milk fat, is supplied after the cream is taken away.—As a matter of fact, are not tins of skimmed milk sold at a much less price in shops than pure cream milk?—I have no knowledge;

ALBION CLAY CO.,

LIMITED.

MANUFACTURERS OF STONEWARE SANITARY PIPES.



PATENT PARAGON PIPES

(Under Licence of Patent Paragon Pipe Company, London).

SOUND GAS AND WATERTIGHT JOINTS.

TRUE ALIGNMENT OF INVERT AND FIRM BEARING ON BED.

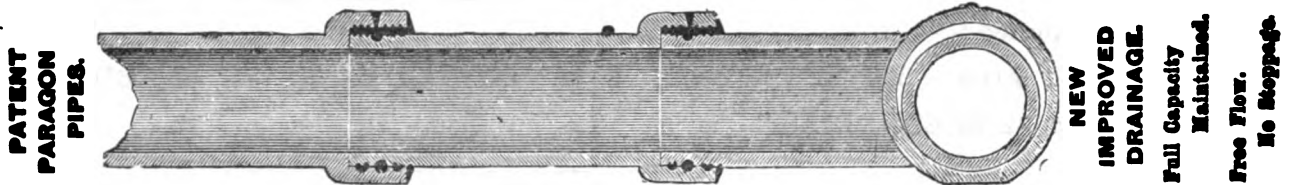
Cheapest in First Cost and Maintenance.

PATENT PARAGON PIPES are made with varying depths of socket—A, B, and C, to secure efficient SEWERAGE and DRAINAGE at the lowest cost. The joints are made in the ordinary manner with clay or CEMENT. A roll of clay or fillet of cement is laid in the lower half of the socket. The spigot is then inserted, and with a downward pressure forces the clay or cement to fill up and make watertight the lower half of the joint; then fill in the upper part and finish as usual. The PARAGON PIPES ARE MUCH EASIER TO LAY AND JOINT THAN ANY OTHER PIPES. Ordinary workmen need little supervision, as the Trade Mark stamped on the upper part of the pipes guides the men in laying them, and is a clear indicator that they are laid in true line on their bed.

The sockets of A are of ordinary depth for ordinary drainage.

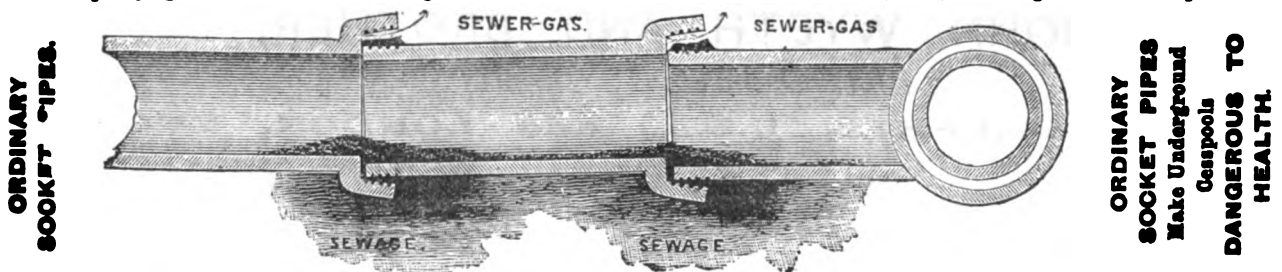
The sockets of B are deeper than those of A to make secure joints.

Below is a section of C with extra deep sockets for making reliable gas and water-tight joints to withstand pressure.



As the requirements of SEWERAGE and DRAINAGE are variable, it will depend on circumstances which of the above forms it is most advisable to use. For ordinary drainage, A will answer every requirement, at the lowest cost. In cases where it is necessary to secure reliable gas and water-tight joints, then B should be used. For special work, or where pressure has to be resisted, it will be advisable to specify C.

When specifying, the name should also be given in full, as—PATENT PARAGON PIPES, A, B, or C, according to the kind required.



The advantages possessed by the PATENT PARAGON PIPES over others will be realised at once on reference to the section here given of the ORDINARY SOCKET PIPES, which clearly shows their well-known defects. The sockets being concentric with the pipe, and of much greater diameter, the spigots drop, and the ledges formed stop the solids, and liquid sewage and sewer gas escape at the open joints.

The PATENT PARAGON PIPES remedy the defects of the ORDINARY SOCKET PIPES, and secure true alignment of the invert at the joints, thereby avoiding silting and stoppage of drains. They are highly approved, and should be specified in all cases to secure efficiency in drainage at the lowest cost.

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FOR MAKING WATER-TIGHT JOINTS IN WATERLOGGED GROUND.

These can be laid and jointed when entirely submerged in water.

All the Pipes, &c., are made from the Company's Best Selected STONEWARE Pipe Clays, and are of Superior Quality, true in line and section, and well glazed.

FOR PRICES, SAMPLES, &c., APPLY TO THE COMPANY.

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Works Telegrams—"ALBION WOODVILLE."

London Depot:—MIDLAND RAILWAY NEW GOODS STATION, EUSTON ROAD, ST. PANCRAS.

Chief London Office: 18, NEW BRIDGE ST., BLACKFRIARS, E.C.

Telegrams—"SEWERAGE, LONDON." Telephone 1953.

I should never use the condensed skimmed milk myself.—Has the price of butter decreased, in your opinion, since margarine was largely used?—It has decreased, and I think in consequence of the large quantity of margarine, but it is only right to say that there is a decrease in all articles of produce.—Then you attribute in some measure the decrease in the price of butter to the consumption of margarine?—I do, and I am fortified in my opinion by my friend Mr. Faber, the representative of the Danish Government.—Have you noticed that the importation of butter has increased about 50 per cent. during the last few years?—I have not noticed it. I knew that it had increased largely, but I did not know to that extent.—Might you not possibly attribute the fall in the price of butter more to the increase in the importation of butter than to the sale of margarine?—No, because margarine is a new production; and it is only natural to suppose, without casting any odium upon the article itself (I do not wish to do so so long as it is sold in its own character) that its coming into competition with butter would affect the price of butter.

(To be continued)

THE AGEING OF LIQUORS BY COLD.—M. Raoul Pictet, the eminent French chemist, claims that he has discovered a new method of ageing liquors artificially. His process consists in gradually cooling the liquor, brandy, for example, to 200 degrees C. below zero, and then gradually bringing it up again to the normal temperature. According to the *Revue des Revues*, a frigorific laboratory in which this new discovery is to be applied is upon the point of being established in Paris.—*Chem. Trade Jour.*

THE HEALTH WATER PIPE

NEVER POISONS THE WATER.



PATENTEES:

WALKER & CO., HECKMONDWIKE.

The following is extracted from "THE ANALYST" for March, 1893.

"THE COMPOSITION OF MILK AND MILK PRODUCTS.

25,931 SAMPLES were Analysed in 1892, in the LABORATORY of the

AYLESBURY DAIRY COMPANY, LTD.,

St. Petersburg Place, Bayswater, London, by M. H. Droop Richmond, F.I.C., F.C.S.,

Member of the Society of Public Analysts, the Company's Resident Analyst.

The Samples comprised:—

23,865 of MILK, 566 of CREAM, 8 of BUTTER-MILK, 78 of BUTTER, 24 of WATER, and 22 of SUNDRIES."

WYETH'S BEEF JUICE,

MANUFACTURED BY

JOHN WYETH AND BROTHER,

Pharmaceutical Chemists,

PHILADELPHIA, U.S.A., and LONDON, ENG.

A liquid preparation of the choicest Beef, containing the nutritive albuminous principles in an unaltered and soluble form. It is produced under the careful manipulation of skilled operative chemists, supervised and directed by the highest commercial integrity. The experience of the Medical Profession and the analyses of the most searching character by Eminent Chemists, prove that

WYETH'S BEEF JUICE

contains all the albuminous principles of Beef in an active and soluble form; that it contains the hæmoglobin of meat unaltered; and that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession. POINTS OF SUPERIORITY OF

WYETH'S BEEF JUICE.

It is pleasant and agreeable to the taste.

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.

How **WYETH'S BEEF JUICE** is to be taken:

Wyeth's Beef Juice should always be taken in Cold, never in Boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour, and activity to overworked and exhausted brain and body.

Descriptive literature on application to the

London Office, 30, SNOW HILL, E.C.,

Addressed to **WILLIAM F. HORTON**, Resident Representative of **JOHN WYETH and BRO.**

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London.

COLEMAN'S "WINCARNIS"

OR
LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

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A 2s. 9d. Bottle sent Post Free on receipt of 83 Stamps

"SANITAS" is a really Non-Poisonous Disinfectant.



"SANITAS" Kills all Disease Germs.

"SANITAS"—"Valuable Antiseptic and Disinfectant." —*Times*.

"SANITAS"—"Enjoys general favour."—*Lancet*.

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and Drugs Act Inspectors, which were given publicity in nearly every newspaper in the United Kingdom. We said at the time that we did not believe there was an atom of truth in the charges, and we challenged Mr. Hudson to substantiate his grave slander upon an important body of public officials.

On May 15, Mr. James Hudson appeared in metaphorical sackcloth and ashes, and, with respect to his bribery allegations, said "that unfortunately he had not been able to get anyone to come forward with evidence as to the corruption of the inspectors under the Food and Drugs Act. He could quite understand this, because of the position the witnesses would be placed in. He had received information from wholesale men who were serving the retailers with margarine, and who had heard from time to time of these things, but they dare not come forward.

"Sir Walter Foster: Then you are speaking on hearsay evidence?—Yes, but very good evidence.

"Quite so. But still you are unable to substantiate it by the production of witnesses?—Yes; they refuse to come forward.

"I understand you also to say that you do not wish to cast any reflection on the general body of inspectors?—Certainly not.

"Only with regard to some specific instances of which you have heard?—Quite so. I have no doubt there are very many perfectly honest people who are acting as inspectors, but I have had several letters which have confirmed more than ever my statements (handing a letter in).

"Yes; but this evidence would go to show that the inspectors refused bribes and that the traders offered them.—It only shows that they were offered.

"We have letters of this kind ourselves, in which

Food and Sanitation.

SATURDAY, MAY 25TH, 1895.

SLANDERS UPON FOOD AND DRUGS ACT INSPECTORS.

WE spoke our mind some months ago upon the farce that is being played twice a week at the House of Commons before the Food Products Committee. All concerned with the suppression of fraud in food stuffs must be as weary as we are of the twaddle to which the victims who sit upon the Committee are treated, thanks to Sir Walter Foster's utterly incompetent interpretation of the reference to the Committee. It is a pity that a practical man having knowledge of the subject, such as Mr. Kearley, was not chosen as chairman. Examined in the light of practical knowledge, the evidence is either the vaguest generalities or sensational statements unsupported by a shred of credible proof.

It is some weeks since Mr. James Hudson, of Hudson Bros., made sensational charges of bribery against Food

witnesses are anxious to come forward and say that bribes have been offered to the inspectors and they have refused them. The allegation was that bribes were received. That allegation is lacking in proof.—It could be proved if you could hear evidence. It is established to my own satisfaction. I do not alter the views I expressed one jot.

“But that is a matter of opinion, and full proof is not forthcoming?—No; they refuse to come forward.”

The brazen impudence and shameless effrontery of the above crawl out of a disgraceful charge made against a body of public officials, whose livelihood depends upon their being absolutely above suspicion amazes us. Mean as was the retraction, if so contemptible a shuffle can be called such, it did not even go the round of the public press, as did the original slander, and so to some extent atone for the wrong. It was thrown as a sort of crumb to a body of men who by education and public usefulness are immeasurably their traducer's superiors. Mr. Hudson says his witnesses dare not come forward. We suspect that his witnesses are like Mrs. Gamp's friend, Mrs. Harris, and that “There ain't no Mrs. Harris” any more than there are any witnesses capable of adducing proof of Mr. James Hudson's bribery allegations. But it is with vague twaddle or cock-and-bull trash like Mr. Hudson's evidence that the committee is befooled through sitting after sitting. Is it not time the committee began to take evidence as to how to remedy the defects in the existing laws and secure uniform and capable enforcement of the Acts?

ABERGAVENTNY NUPKINSES ENCOURAGE ADULTERATION

IF we happened to be concerned with the taking of samples of Food and Drugs in Abergavenny, we should feel inclined to let the Act remain a dead letter until a few magistrates were appointed who had some sense of their duty to the public. If the following be a fair sample of the way the present ones act, then adulteration should be the rule instead of the exception.

At the Abergavenny Petty Sessions on May 15, Elizabeth Sevenoaks, of Govilon, was summoned for selling milk from which a portion of the butter had been abstracted, without giving notice at the time of sale. Thomas E. Serjent, inspector, said that on April 11 he purchased three half-pennyworth of milk from the defendant and informed her that he should have it analysed. He divided it into three parts and gave her one part. He produced the certificate from the public analyst, which stated that the sample was deficient in butter to the extent of 56 per cent. Defendant said she sold the milk just as she bought it. Fined 1s. and costs.—Thomas Jones, Cross-street, Abergavenny, was summoned for a similar offence. The certificate showed a deficiency of 9 per cent. of butter. Fined 1s. and costs. The magistrates were Major Carnegie and Mr. F. P. J. Hanbury-Williams.

ADULTERATION PROSECUTIONS.

DISEASED MEAT.

At West Bromwich Police Court on May 21, before the Stipendiary (Mr. Neville), Thomas Markham, butcher, of Walsall-street, West Bromwich, was charged at the instance of the Corporation with having the carcasses of four pigs in his possession which were unfit for human food. Mr. Alfred Caddick (Town Clerk) prosecuted, and Mr. James Clark defended.—Thomas Waters (Sanitary Inspector) deposed that on the 10th April last he visited the defendant's premises in Walsall-street, and found the carcasses of four pigs in the slaughter-house which defendant had slaughtered. The flesh was flabby and wet, and was in his opinion unfit for human food. The carcasses were removed to the Market Hall, where they

were inspected by Dr. Manley (Medical Officer) and a magistrate, both of whom expressed the opinion that they were unfit for human food.—Dr. Manley said the reason he condemned them as unfit for human food was because of the generally poor state of the flesh, which showed that there had been some disease of the internal organs.—Mr. H. Collett (veterinary surgeon) stated that he saw the pigs, and was of the same opinion as the other witnesses.—Mr. Clark, for the defence, urged that his client was ignorant of the fact that the animals were unfit for human food. He was not charged with exposing the meat for sale, but only with having it upon his premises.—A butcher named Abraham Bunn, of the same locality, stated that he saw the pigs in the slaughter-house, and did not notice anything wrong with them.—The Stipendiary remarked that defendant was liable to be fined £20 in each of the cases. He could not help looking at it as a serious matter, and defendant would be fined £10 and costs, or in default one month's imprisonment. The fine and costs amounted to £13 3s. 6d.

RIDICULOUS PENALTIES FOR UNSOUND MEAT IN NEWCASTLE.

At Newcastle, on May 14, Thomas Greenwell, butcher, of Low Fell, was summoned for causing to be exposed for sale meat which was unfit for food. Mr. Holmes prosecuted, and Mr. Clark defended. The diseased state of the meat was not disputed, and as defendant had been fined £5 and costs at Gateshead in respect to one portion of the carcass—of which three-quarters were condemned at Tindall's Market, Newcastle—Mr. Clark appealed to the Bench to consider that sufficient. The magistrates, however, imposed a fine of £10 and costs.—William Davidson, farmer, of Felton, was summoned for a similar offence, and Mr. Clark on his behalf pleaded guilty. He pointed out that defendant knew nothing about dead meat. He had a cow which seemed to be failing, and so sent it to a butcher to be killed and sent to market. He received no report from the butcher, but if he had been told the carcass was diseased he would not have allowed it to be sent out for sale.—He was fined £5 and costs.

MILK.

At Oldham, on May 9, Chas. Kidd, farmer, The Farm, Rowsley, Derbyshire, was summoned for having, on April 18, sold adulterated milk.—Mr. Cook, Assistant Town Clerk, who prosecuted, said that on the date named the defendant consigned a can of milk to the Grange Park Milk Company, Oldham. On the arrival of the can at Clegg-street Station a sample was taken from the milk and forwarded to Mr. Estcourt, the Borough Analyst, and was found to have been adulterated by the addition of six per cent. of added water.—Inspector Thomas proved taking the sample of the milk and conveying the same to the analyst. He added that the can in question was labelled “Warranted pure milk,” and “Morning's milk.”—Inspector Burnett corroborated, and stated that on April 21 he went to the defendant's farm and took samples of the milk taken fresh from the cows. He afterwards conveyed those samples to the analyst.—Mr. Shepherd, manager of the Grange Park Milk Company, proved the contract existing between the defendant and his firm for the supply of pure milk.—The defendant stated that he had been a tenant of the farm for seven years. When he took the farm he took over from the previous tenant a milk refrigerator, which was fixed in the yard, and without any covering. All the milk before being sent out passed through the refrigerator, and, as a consequence of its exposed position, whenever there was a fall of rain a small quantity fell into the refrigerator, and would thus get mixed with the first milk passed through. He had made inquiries into this case, and had ascertained that early on the morning of April 18 there was a heavy fall of rain, and to this was due the adulteration of the milk. The can from which the sample was taken was only about half full. Had it been quite full there would not have been such a high percentage of water.—Mr. Cook: Don't you think it is tempting providence to leave the refrigerator exposed all night in this way?—The defendant: Well, it does look a little careless, but it has been done for the last sixteen years.—The Chairman: You must have made a lot of profit out of it in that time.—The defendant: Since this case arose I have tested the refrigerator, and find that an hour and a half's rain causes three gills of water to collect.—The Chairman: Take care you don't send us that water again.—A fine of 10s. and costs was imposed.

At Southampton, Henry Kimber, milkseller, of Maybush, Old Shirley, was summoned under the Food and Drugs Act for having in his possession, on May 5, a quantity of milk from which cream had been extracted, and for selling milk which was not of the quality demanded, and which contained 10 per cent. of added water. The Town Clerk appeared to prosecute, and Mr. Lampord defended.—The summonses were taken out at the instance of Mr. Maurice Batchelor, inspector of nuisances.—The Town Clerk produced the analyst's certificate, which showed that 11 parts of fat had been removed from the milk and 10 parts of water added.—Defendant pleaded guilty, but it was urged in extenuation that he was ill in bed at the time the milk was sold, and knew nothing of the transaction.—A penalty of 20s. and costs was imposed.

WILLIAM SHERITON, milkseller, of 111, Bevois Valley-road, was summoned for retailing milk on Sunday, the 5th inst., from which

27 parts of fat had been extracted.—The Town Clerk prosecuted, and Mr. Batchelor gave evidence in support of the charge.—The defendant said he had purchased the milk as new, but was fined £1 7s. 6d.

At the Kings Heath Police-court John Thornicroft, a farmer and dairyman, of Metchley Farm, Harborne, was summoned at the instance of the Kings Norton Rural District Council, for adulterating skim milk to the extent of at least 30 per cent. of water at Selly Oak.—Mr. A. T. Cottle, an inspector under the Food and Drugs Act, said he bought a pint of skim milk from a man in defendant's employ, who was delivering milk in the Lottle-road, Selly Oak, and he submitted the usual divisions to the County Analyst.—Mr. E. Docker, who prosecuted for the authority, put in the report of the County Analyst, Dr. Horace Sweet, who stated that it was denuded of fat, and adulterated to at least 30 per cent. with water.—Mr. Ben Shakespeare, of Oldbury, who defended, submitted that the adulteration had been done by an employee, unknown to the defendant; the water was merely added to make up a large measure, the man thinking he was doing no harm.—Mr. Thornicroft said he was very annoyed when he heard what had been done. His milk was considered some of the best in the district, and had been highly recommended by doctors, and he was, therefore, particularly careful to have it pure.—The Bench imposed a fine of 20s. and costs with the analyst's fee.

At Manchester, on May 15 William Wright, farmer, of Ballidon, near Ashbourne, was summoned before Messrs Wells and Parlane, under the Food and Drugs Act, for consigning to a Manchester milk dealer on April 19 milk which on analysis by the city analyst proved to contain 4 per cent. added water, and had been deprived of 13 per cent. of fat. He was fined 20s. and costs in the second case.—Albert Smith, Ridge Farm, Chapel-en-le-Frith, was also fined 40s. and costs for consigning milk to a Manchester dealer which had had 25 per cent. of fat abstracted.

At Pontypridd, on May 15, before Mr. Stipendiary Williams, Alderman Mathias, and Mr. James Roberts, Superintendent Jones, Deputy Chief Constable, charged Benjamin Price, of Porth, with selling milk containing 5½ per cent. of added water. A fine of 5s. and costs was inflicted.—Hannah Jane Rose, Trealaw, charged with selling milk containing 34 per cent. of skim milk added to genuine milk, pleaded having sold the article in the condition in which she received it. She was ordered to pay the costs, £1 11s. 6d.

At Brentford Petty Sessions, Mr. Hooper, a milk seller, was summoned for having sold milk adulterated with 15 per cent. of added water. Mr. Robinson, who defended, said his client admitted the fact, as no doubt a technical offence had been committed. His client had conducted his business for many years, and the samples taken had always been found correct. He received the bulk of his milk from the farm of Mr. Poole, but on the morning in question he bought a small quantity from the Metropolitan Milk Supply Association to make up. This was put in a pail by itself, and it was from this that the inspector was supplied. A sample was taken from a churn that had come from Mr. Poole, and this was found to be all right. His client had had a sample of the other milk tested since, and had found that it contained 15 per cent. of added water. He (Mr. Robinson) had hardly need to say that his client had severed all connection with the Association. Mr. Walter Tyler, Inspector under the Food and Drugs Act, testified as to the truth of these statements, and the bench ordered that the defendant should only pay the costs, and that no conviction be recorded against him.

At Earls Colne, Frederic Cooper was charged with selling adulterated milk.—Supt. Elsey said the public analyst certified that the milk contained 41 per cent. of water.—Defendant said his cow's milk was very poor, and he tried to improve it by giving the animal barley meal.—Mr. Elsey said that out of the five samples taken from different people in Earls Colne only one was of a fair quality.—The Chairman: They are in a bad way at Earls Colne. I hope we are better at Halstead.—Supt. Elsey: When I tried you last, sir, you were.—The Chairman said children and invalids were generally fed on milk for strength, and it was most important that the milk should be good and pure. The quantity of water in the sample taken from the defendant was very great, and the circumstances Mr. Elsey had mentioned with regard to the milk supply of Earls Colne were not at all satisfactory.—The Bench would have to impose a fine of £1 and costs, £2 2s. 8d.

At Gosport Police-court, the adjourned information against James Wright for adulteration of milk came on for hearing.—The sample had been sent to Somerset House for further test, and the certificate received stated that the sample contained not less than 5 per cent. of added water.—Mr. Hyde (who defended) reminded the Bench that the offence dated was March 28, when the heavy frost was prevalent.—Defendant said he sold the milk as he received it.—The Bench imposed a penalty of 10s. and £1 2s. 2d. costs.

CHEESE.

At Kidderminster Borough Police-court, Mrs. Emily Edwards, of the Market Hall and Dudley-street, was charged with selling cheese which was not of the substance and nature demanded. Mr. Thursfield prosecuted for the Town Clerk, who was indisposed. Defendant's husband said he bought the cheese as Cheddar cheese from a large firm of auctioneers. He gave 2½d. per lb. for it, and sold it at 3½d. Mr. Cowderoy, Inspector, having proved the pur-

chase, the analyst's certificate showed that the so-called cheese contained 95 per cent. of foreign fat. The Bench fined defendant 20s. and £2 8s. costs.

THE "PALL MALL GAZETTE" ON NEW MILK AT 3d. A QUART.

YESTERDAY marks an epoch in the history of criminal jurisprudence. We have heard of the lady who urged that it was only a very little one; we have heard of numberless extenuations. But we never heard the likes of John Davis. Let us briefly capitulate. Mr. Arthur Liddell Bridge, Inspector under the Food and Drugs Act for the County of Middlesex, heard the said defendant crying, "New milk, 3d. a quart." Now, we know, and you know, and the very Inspector under the Food and Drugs Act for the County of Middlesex knows that new milk cannot be done at the price. So, being an Inspector under the aforesaid Act for the hereinbefore-mentioned county, he did the exact opposite of what you and we would have done. He ordered a quart. "Not here," said glorious John, and emptied the can over the fence. "It looked like milk and water," said the plausible Inspector. "It was water," cried indignant John Davis, "absolutely pure water." It is the boldest and most telling defence we have yet known. "You assaulted your father-in-law," will urge the prosecutor of the future. "It is false," will pant the prisoner; "I murdered my mother—brutally murdered my unoffending dear old mother."

DEFAUDING THE PAUPERS.

At Bailleborough, on May 14, Sergeant Keane, R.I.C., Inspector of Food and Drugs, summoned Robert Flack for supplying buttermilk to Bailleborough Workhouse, as a contractor, which proved under analysis to be adulterated with 65 per cent. of added water in addition to 25 per cent. allowed for churning purposes.

Mr. Irwin—Ninety per cent. of water and 10 per cent. of milk. Dr. Ryan—It means that to 100 parts of milk 65 per cent. of water has been added in addition to 25 per cent. for churning purposes—that is a mixture of 10 gallons of milk and 9 of water. Sergeant Keane—On March 21 I attended at the workhouse and took a sample of defendant's buttermilk for analysis, as it was being delivered. I informed his son that I intended to get it analysed, and he consented to receive a sample. I sent one of the three samples to Sir Charles Cameron and received the certificate produced. I produce certified copies of four previous convictions. Mr. Broome—I think, Sergeant, you should send to some other analyst. Sergeant Keane—I cannot do that. If Mr. Flack is dissatisfied he can try another analyst. Defendant—I have taken particular care to put only four gallons of water to 28 or 30 gallons of milk for churning purposes. Mr. Gibson—The certificate was dated on April 9. What state would buttermilk be in from March 21 to April 9? Sergeant Keane—If the milk was pure it should be pure. Defendant—I can certify from my own experience that it turns to water. Mr. Irwin—Would milk become water? Defendant—After six days it would. Dr. Ryan—There is only one way of rebutting the evidence: for the defendant to send his sample to another analyst. Sergeant Keane—He had every opportunity of doing that. Mr. Gibson—Sergeant Keane does not deserve blame. Dr. Ryan—He deserves praise.

The sergeant produced the third bottle of the sample taken, and after it got a little shaking the cork shot. Mr. Irwin—If you don't take proper steps to prove your case, and vindicate your character, we must fine you.

A fine of £1 and costs was imposed.

SPIRITS.

At Hailsham, James Gatland, of the Star Inn, Alfriston, was summoned for having sold adulterated whisky on March 20.—Mr. F. Lawson Lewis was for the defence.—Mr. W. J. Bartlett, an inspector under the Food Adulteration Act, deposed to purchasing a quantity of whisky at the inn, and produced the analyst's certificate, which represented the spirits to be 26 below legal strength.—Some discussion took place as to the identity of the sample sent for analysis with that to which the certificate applied. The witness pointed out that the number on the bottle and the certificate corresponded, and the defence did not press for further proof.—George Cheesman, defendant's manager at the Star, admitted serving the inspector with the whisky, and explained that a small quantity of the spirit brought into the bar had, through an act of forgetfulness on his part, been unduly "broken down." It was a mistake for which Mr. Gatland was in no sense to blame.—Mr. Lewis addressed the Bench on the facts, and the nominal penalty of 10s. and costs was inflicted. The Bench expressed the opinion that further evidence of the identity of the samples sent with those analysed should be forthcoming, and requested the inspector to bring the matter before the Weights and Measures Committee of the County Council.—Henry Awcock, of the Black Horse, Wilmington, was convicted of selling half a pint of adulterated gin to the inspector on the same date, and was fined £1 and costs, 9s.

COFFEE.

At the Eckington Petty Sessions, Henry Wadham, grocer, Greenhill, was summoned by Colonel W. A. Short for selling coffee which was adulterated with 50 per cent. of chicory at Greenhill.—The case was dismissed owing to the non-appearance of Colonel Short.

ONE SHILLING FINE FOR TWENTY-FOUR PER CENT. OF CREAM EXTRACTION.

At Uttoxeter Police-court, on May 15, before Captain Dawson and Grosvenor Jennings, Esq., Caroline Tortoisshell, milk-seller, Denstone, was charged with selling to Charles Gifford a pennyworth of milk from which a portion of cream had been abstracted, so as to affect injuriously its quality, without making disclosure of such alteration to the purchaser.—Mr. E. W. H. Knight, the inspector under the Food and Drugs Act for the northern division of the county of Staffordshire, appeared to prosecute.—Chas. Gifford proved purchasing the milk from the defendant on April 2 at Rochester, and that he informed the defendant that he purchased it for analysis.—The analyst's certificate showed that 24 per cent. of the cream had been extracted.—Defendant pleaded not guilty, and in doing so said she always mixed the night and morning milk together, and sold it in the morning.—Fined 1s. and 8s. costs.

HOW DISEASE IS SPREAD.

At Woolwich on May 20 Henry Drew, dairyman, 13, Princes-road, Plumstead, was summoned by the Plumstead Vestry for disobeying an order to close his dairy.—Mr. Hughes, clerk of the Plumstead Vestry, said an outbreak of typhoid fever occurred in the streets round the defendant's dairy. A magistrate's order was obtained for the medical officer to inspect the dairy. This was done, a special meeting of the Vestry was held, and an order was made to close the dairy. At the time there were 23 cases of fever. These had been increasing a dozen a day, and now numbered 65, of which 63 had been served with milk from the defendant's dairy. Drew took no notice of the order to close.—Mr. A. Duck, chief sanitary officer, said on the 18th he saw a van containing a churn leave the dairy at a quarter-past seven in the morning, within two minutes he began serving milk to customers, and continued the round.—Edward Turner, in the employ of the Vestry, said he saw the van loaded up at the dairy. A lad was keeping watch outside the street, and on his calling out "All right" the van drove away. Witness saw a man, named Page, in the employ of the defendant, serve six or seven customers.—For the defence, Charles Page said that the milk from the twelve cows of the defendant was turned down the sink. The milk delivered on the 18th was bought from another dairyman.—Mr. Kennedy told Page that he was telling falsehoods, and he fined Drew £5, with a continuing penalty of £2 a day, and £2 2s costs, or six weeks' imprisonment.

SPENT GINGER.

At Malmesbury, on May 7, Albert Kent, grocer, of Oaksey, was summoned for selling ½lb of powdered ginger not of the nature, quality, and substance demanded. Mr. H. Bevir, of Wootton Bassett, prosecuted on behalf of the Wilts County Council, and said the analyst's certificate showed that about 30 per cent. of the soluble ingredients of the ginger had been abstracted. Mr. Sam Smith, Inspector under the Food and Drugs Act, said that on March 25 he went to defendant's shop, and saw Mrs. Kent. He asked for ½lb. of ground ginger, and paid 10d.—a fair price for genuine ginger. He told her he intended to have it analysed, and divided it. He did not see defendant. Mrs. Kent told him she thought the ginger was all right, and that it was bought at Cirencester. Defendant said he bought the ginger, which was labelled as "Genuine Ground Ginger," from a Cirencester firm. He did not receive any warranty. He had not tampered with it. Mr. Bevir elicited that the name of the wholesale firm did not appear on the tin. The bench thought it was a great misfortune for defendant, but had no option but to convict. They imposed a fine of 10s. including costs.

THE SANITARY INSPECTION OF HOUSES.

An important point as to the right of sanitary inspectors to enter premises came before the North London Police-court on May 15. Mr. Walter Florey, of Defoe-road, Stoke Newington, being summoned for refusing to admit Devas Matthews, one of the sanitary inspectors employed by the vestry.—Mr. Webb, clerk to the vestry, conducted the prosecution, and the defendant, who is a vestryman of Stoke Newington and a member of the Sanitary Committee, appeared in person.—Matthews said that no complaint had been made with reference to the premises, but he was authorised by the vestry of Stoke Newington to inspect every house in the parish.—Mr. Marsham: Section 10 of the Act gives the vestry officials power to enter premises.—The defendant said that was qualified by another sub-section, which provided that where under this Act a nuisance had been found to exist a warrant could be applied for.—Mr. Webb said that a penalty was incurred by the mere refusal to admit an officer.—The defendant: I contend not. An Englishman's house is his castle. Of course, I should not think of disobeying an order of the Court.—Mr. Marsham: Section 10 of the Act gives a right of entry at any hour of the day to see if there is a nuisance, and I shall hold that if you refused to admit the officer there has been wilful obstruction.—The defendant was fined 20s., with 2s. costs.

WHITE WINE VINEGAR.

THOS. BAGLEY, chemist, High-street, Wolstanton, was summoned by Edward Knight, inspector under the Foods and Drugs Act, for an offence on April 16. He had sold to one of the assistant inspectors a pint of white wine vinegar which on analysis proved to be simply diluted acetic acid.—The defence by Mr. Bagley was that Bagley had been unable to purchase vinegar made from white wine, and that for the past thirty years this dilution of acetic acid was what was sold as the vinegar. He had always been told that the vinegar was not now manufactured from white wine, and it was only within the last few months that the name of white wine vinegar had appeared on the list of a wholesale supply firm. He had always been aware of the great importance of selling pure drugs, and during his business experience, although about fifty samples of drugs had been purchased from him at different times, not one had been found impure.—The Stipendiary remarked the defence seemed distinctly honest and straightforward, and as that was the first prosecution of the kind he would not inflict a higher penalty than 40s. and costs.

APPEALS.

HAWKINS v. WILLIAMS.

May 20.

This was a special case stated by justices of the county of Southampton sitting at Gosport, who had dismissed an information against the respondent charging him with an offence under section 6 of the Food and Drugs Act, 1875. The charge was dismissed on the ground that the respondent had brought himself within the protection afforded by section 25. The main question in the case was whether the butter, the subject of the charge, was purchased with a written warranty of quality, the words "guaranteed pure" appearing in the invoice sent by the importer. The facts were these. On December 8 the respondent, proprietor of "The World's Tea Company," purchased the butter, which was frozen Australian butter, from the importer. On the 17th the butter was sent to the respondent's warehouse in London. It was forwarded to his shop at Gosport on the 18th. The sale to the appellant was on the 20th, and the justices found that the butter was sold in the same state as it was received. On analysis the butter was found to contain 17 per cent. of foreign fat. An invoice dated December 8 had been sent by the importer with the words "guaranteed pure." It was not stated in the case at what date the invoice was received. The finding of the justices was in these terms: "We, being of opinion that the words 'guaranteed pure' written upon the invoice constitutes a sufficient warranty, dismissed the said information." The important section of the Sale of Food and Drugs Act, 1875, is section 25, which is the following:—"If the defendant . . . prove to the satisfaction of the justices . . . that he had purchased the article in question as the same in nature, substance, and quality as that demanded of him by the prosecutor, with a written warranty to that effect, that he had no reason to believe at the time when he sold it that the article was otherwise, and that he sold it in the same state as when he purchased it, he shall be discharged."

Mr. Chitty appeared for the appellant, the proprietor, and cited these cases:—"Iorns v. Van Tromp" (59 J. P., 246); "Laidlaw v. Wilson" ([1894] 1 Q. B., 74). He urged that the justices ought to have convicted. It was necessary, if the respondent desired to bring himself within section 25, to prove affirmatively that the warranty was part of the contract, and made at or before the time of the purchase from the importer. The invoice was insufficient to prove that. There was no statement in the case as to the date when the invoice was sent or received. Probably it came with the goods on the 17th, whereas the contract took place on December 8.

Mr. David, for the respondent, contended that the invoice pointed to there having been a contract. It was dated December 8 and had on it the initials of the vendor. He cited "Lindsay v. Rook" (10 R., 1894) as a case which showed that the invoice was a sufficient protection.

The Court dismissed the appeal.

The Lord Chief Justice said the respondent was charged under section 6 of the Sale of Food and Drugs Act, 1875. The butter sold had been adulterated, and an offence had been committed by the respondent unless he was able to bring himself within section 25. It was quite true to say that the onus of proving himself to be within that section lay on the respondent. It was admitted that he had proved himself to be within it, but with one exception, for it was said that he had not proved that the purchase of the butter from the importer was made with a written warranty. Now, was there any evidence on which the justices could find that there was such warranty? The natural conclusion which the Court would come to on looking at the invoice was that the vendor would not have put the words of warranty in it unless it was part of the contract. The facts stated in the case justified this inference, and the further facts which had been brought before the Court on the part of the appellant made this clear. The real contest before the justices would appear to have been whether an independent warranty was necessary. It must be held that there was evidence on which they could find as they had done. The appeal must therefore be dismissed.

Mr. Justice Charles concurred.

ACTION AGAINST AN INSPECTOR.

In the Queen's Bench, on May 20, the action of Saunders *v.* the Vestry of St. Mary, Battersea, and Another was heard. This was an action brought against the Vestry of Battersea, and Mr. Purnell, an inspector under the Sale of Food and Drugs Act, to recover damages for malicious prosecution, and the defendants pleaded that they had reasonable and probable cause for what they did.

Mr. Crump, Q.C., and Mr. Lalley were for the plaintiff, and Mr. Murphy, Q.C., and Mr. Earle for the defendants.

In opening the case, it was said that it was one in which there might be some difficulty in respect both of the law and the facts also. In July, 1894, the plaintiff had an oil and colour shop in Northcote-road, Clapham Junction, which a Mrs. Cunningham managed for him. The inspector went to that shop, bought some oil, and afterwards summoned the defendant for having sold as olive oil what was known in the trade as "sublimed salad oil." The evidence before the Magistrate, which was given on the part of the present plaintiff, was that the inspector went into the shop and said that he wanted a pint of olive oil. Mrs. Cunningham said, "We don't keep olive oil." The inspector then pointed to some flasks and said, "What is in those flasks?" Mrs. Cunningham replied, "What we sell as salad oil." What the inspector deposed to before the Magistrate was that, in answer to him, Mrs. Cunningham did not say, "We do not keep olive oil," but said, "We have not olive oil on draught, but we have in flasks what we sell for olive oil." The learned counsel for the plaintiff submitted that, whichever of these two accounts the jury thought the true one, there was nothing to bring the case within the terms of the Sale of Food and Drugs Act.

Upon the conclusion of the evidence for the plaintiff, Mr. Murphy submitted that there was no evidence of any malicious prosecution on behalf of the inspector or the Vestry.

Mr. Justice Hawkins adopted this view, and by his direction the jury found a verdict for the defendants.

DR. DYER AND SOMERSET HOUSE.

SOME time since Chief Constable Winch doubted the purity of certain butter on sale in Truro Market, and submitted a sample to the county analyst (Dr. Dyer), who stated that it had been adulterated. Legal proceedings were instituted, but as the owner of the butter had sent a sample to an analyst at Plymouth, and obtained a certificate as to its genuineness, the case was adjourned. The opinion of the analysts at Somerset House was then obtained, and as they also stated it was pure butter, the case was dismissed. Upon this variation, correspondence took place, and at Tuesday night's meeting of Truro City Council the following letters were read:—

Inland Revenue, Somerset House, London,

April 19, 1895.

Sir,—The Board of Inland Revenue have had submitted to them, and have considered, the letter which you addressed on the 2nd ult. to the principal of the Government Laboratory at this office, and also the four documents which accompanied it. In reply, I am directed to state that, in view of the position held under the law by the chemical officers attached to this department under the Food and Drugs Act of 1875, viz., that of referee, it seems to the Board that it would hardly be expedient of them to indicate any special course of action to Sanitary Authorities, in connection with the Food and Drugs Act. The Board may, however, say that they are unaware that Sanitary Authorities have felt themselves seriously hampered by the occasional differences of opinions which the Board's chemical officers have been compelled to express regarding the genuineness or otherwise of samples referred to this laboratory by the magistrates under the Food and Drugs Act. The Board are well aware that the greatest care is exercised in the Government Laboratory in all the cases referred to them, and in all cases in which the analysts have attended the courts, under subpoena or by request, they have been able to satisfy the Court as to the correctness of their conclusions. In the present case the Board observe that, from the certificates forwarded with your letter, no analytical figures are obtainable on which to form any ground of comparison, and there is nothing to show that the same analytical results may not have been obtained in each case, although different conclusions were arrived at by the several analysts who were connected with this particular case.—J. B. Meers, Assistant-Secretary.

Dr. Bernard Dyer, the city analyst, in a letter referring to the foregoing, stated that if the suggestion that the difference in the certificates was merely a difference of opinion, based on analytical results, which might have been the same, was correct the question resolved itself into the comparative value to be attached to the opinions of the analysts concerned. His decision in this case had been absolutely upheld by Dr. Stevenson, whose authority was second to that of nobody, and also by Mr. Bevan, the Middlesex county analyst. On the other side there was the opinion of two gentlemen in the Inland Revenue Laboratory, whose duties only occasionally involved the examination of articles of food. As far as he knew there had not been more than two or three cases under the Food Act in which the Somerset House analysts had attended the Courts, whereas, on the contrary, there had been many cases in which no opportunity had been offered to the public analyst of challenging the correctness of a conclusion to which magistrates were, not unnaturally, disposed to attach weight that was not necessarily in

proportion to its intrinsic value. Not only the correctness of the judgment, but also the analytical accuracy of the chemists at Somerset House has been over and over again—even quite recently—impugned by public analysts. The Society of Public Analysts had sent a circular to all members of the Legislature, Government departments, and local authorities, setting forth, *inter alia*, the desirability of forming "a duly constituted chemical department of the Local Government Board, with whom the public analysts, as officers of the Local Government Board, should be placed in direct relation," stating that "the present system of reference in the case of disputed analyses is unsatisfactory and ought to be entirely remodelled," that "there appears to be no hope of arriving at a *modus vivendi* with Somerset House, in consequence of the fact that the officials of the department follow courses of procedure which are condemned by the public analysts of the country," and further that it was "highly undesirable that a department whose principal duties lay outside of the Food and Drugs Acts should continue to be the court of references under these Acts." As a Select Committee of the House of Commons was inquiring into the general working of the Food and Drugs Acts they were in hope that before long some means might be devised of avoiding the grave inconveniences arising under the existing state of things.

Alderman Hearn spoke of the awkwardness of their position under such circumstances, and Councillor Buck expressed the opinion that Mr. Bassett, whose butter had been suspected, ought to be paid his out-of-pocket expenses, and compensated for all the annoyance caused him.

THE LANCASHIRE LARD INDUSTRY.

EVIDENCE on behalf of the Manchester Chamber of Commerce and of the Lard Refiners' Association was given yesterday before the House of Commons Select Committee by Mr. N. Kilvert, managing director of the firm of Messrs. Kilvert and Sons, Manchester. The witness produced a resolution passed by the Chamber to the effect that it ought to be lawful to use 5 per cent. of beef suet stearine in lard for stiffening purposes for the six months, say, from April to November. It was thought at that time that beef suet stearine might not be required to be used during the winter months, but the universal experience of the attempt to dispense with that commodity during the cold season convinced the trade that a limited quantity was required all the year round. The principal centre of the English lard refining industry was in Lancashire, and lard itself was an important item in the food supply of the country. The whole production of lard in Great Britain and Ireland sufficed to supply less than half of the consumption. Hardened by the addition of a small quantity of beef suet stearine, lard met the requirements of the public and was a perfectly pure article of food. In the witness's opinion the action of the authorities in using the Act to prevent the sale of lard so hardened was prejudicial to the public, in whose interest the Act was passed. In no single prosecution had any witness been brought forward who held that lard so hardened was in any way injuriously affected or depreciated. Beef suet stearine was required for the production of American lard as an article of commerce. It did not fraudulently increase the bulk, weight, or measure, and did not conceal the quality of the article. The Chamber of Commerce thought the Food and Drugs Act might be strengthened in several particulars, and suggested that in cases where the defendant was acquitted his costs should be refunded, and that analyses of perishable goods should be completed within 14 days, the vendor in every case being informed of the result. His firm was concerned in four prosecutions last year, all of which were dismissed in its favour, yet the firm was involved in an expense of £425 in defending them.

HALIFAX RURAL DISTRICT COUNCIL APPOINT A FOOD AND DRUGS ACT INSPECTOR.

DR. YOUNG and Mr. Roe (Inspector of Nuisances), were appointed inspectors under the Food and Drugs Acts. It was resolved to contribute £3 towards the rent for a cottage at Norwood Green, one portion of which is to be used as parochial offices for the Parish Council, and the other as a store room for the Rural Council.

PLYMOUTH PUBLIC ANALYST FEES.

THE Municipal Offices Committee have made the following recommendation: "That instead of Mr. Bean being paid by fees, he be offered a salary of £130 per annum for his services in respect of analyses, whether under the Sale of Food and Drugs Acts, or otherwise, and also for all attendances at court within the borough, and as borough photometrist and gas tester, and the usual fees and allowances allowed by the Court of Parliament in cases where his attendance is required outside the Borough. Mr. Bean to provide all chemicals and stationery at his own cost. That a sum of £20 per annum be required to be paid by the authorities of Devonport (instead of £10 10s., as at present) for the use of the Borough Laboratory," and said the salary had been fixed on an average of fees paid Dr. Bean during the past three years. The committee,

he remarked, felt that the fee system was rather an unsatisfactory one, inasmuch as it might operate against the interests of the public.

Mr. Pitt, jun., suggested that the Council should follow the course adopted by similar bodies throughout the country, and request the committee to endeavour to arrange with Dr. Bean a reduced scale of fees for analysis made by him of samples that might be sent by private individuals of the town. Mr. Radford undertook to bring the suggestion to the notice of the committee.

CARMARTHENSHIRE COUNTY COUNCIL AND THE FOOD AND DRUGS ACT.

THE Local Government Board wrote to say they deeply regretted that the council did not send more samples to the analyst for analysis. Only six had been sent, and those proved the stuffs to be very highly adulterated. The board suggested that one sample for every 1,000 population be taken every year, which would mean, said the chief constable, about 120 analyses a year at 15s. each.

Mr. D. Stephens moved, and Mr. T. Rees (Dolgwm) seconded that 40 samples be sent every year.

Mr. James John (Carmarthen) proposed, and Mr. John John seconded an amendment that the full 120 be taken.

The motion was carried.

THE SOMERSET HOUSE MILK ANALYSES AGAIN.

AT Cleator Moor Petty Sessions, Thomas Dawson, farmer, Woodend, Bigrigg, was summoned on a charge of selling at Cleator, new milk, with fat extracted, on the 18th March last. The case was partly heard a fortnight ago.—Mr. Chapman appeared for the defence.—The Chairman (Mr. Lindow) said it did not occur to him until now that the defendant was a tenant of his. Did the Superintendent of Police object to him adjudicating?—Supt. Kelly: Not at all.—Mr. Chapman also intimated that he had no objection to the tribunal. The case was adjourned for him in order that additional evidence might be called, and that he might cross-examine.—Dr. Hellon, county analyst, said he received a sample of milk from Supt. Kelly, and after analysis handed him a certificate which was put in when the case was partly heard. There was one certificate referring to a sample marked B, which was the poorer sample, and another referring to a sample marked B2. The latter sample was milked in the presence of the police, and was used as the standard for the "B" sample, from which it appears that the poorer sample contained nothing injurious to health, but it had been skimmed, 31 per cent. of fat originally present having been removed.—Mr. Chapman: Then, taking the case upon that view, it is absolutely essential that the two samples should be taken from the same bulk, that is, milked from the same cows?—Yes, in order to get the exact percentage, in order to get that 31 per cent.—If it could be proved that as a matter of fact these two samples were taken from different bulk, your figure of 31 becomes of no value?—Only the figure 31 becomes of no value. I made another statement that the milk had been skimmed, and that on the whole is not affected by the percentage.—Mr. Chapman said that he must ask that the case be confined to the charge.—The witness said that if the milk was taken from different bulk he could not rely on the exact percentage of 31 having been removed, but he could rely that some percentage had been removed.—Mr. Chapman: What is the poorest natural milk, as regards the percentage of fat, taking Somerset House experiments? What is the lowest estimate of fat for natural milk?—Witness: 2.43 per cent. from an individual cow.—Mr. Chapman: Yes, I agree with you.—Replying to other questions, the witness said that, as a general statement, poor milk was poor in fat, and rich milk was rich in fat; non-fatty solids would not be a test of richness in any way.—The Clerk: The richer of the samples, B 2, has the lowest percentage of solids, not fat.—Cross-examination continued: In experiments made last year, mixed milk of 55 dairies varied in the fat from 2.89 to 5.61 per cent. The latter was a high figure.—Mr. Chapman: Is it not reasonable to infer from those figures that in a great many individual cases the fat fell below 2.89?—For an individual cow I think it very possible.—Is it not more than possible that many individual cases in the fifty-five dairies fell below 2.89?—In those fifty-five dairies 2 per cent. fell below 3 per cent.—That is not the question I am asking you.—I think it is.—Mr. Chapman repeating his question, the witness said he could give the exact percentage from the Local Government Board's report on the Sale of Food and Drugs Act. Many of the cases would be less than 2.89, but not less than 2.50 per cent. of fat.—Mr. Chapman: It must come very near, only a difference of .39 points!—Witness: That is very high.—Answering further questions, witness said that the milk from two cows out of 273 fell below 2.50 per cent. of fat.—The Clerk: Are those 273 cows what make up the fifty-five dairies?—Witness: We are not informed.—Mr. Chapman: There would be a good many ranging about 2.50 on the up grade?—Witness: There were six cows which fell below 2.75.—How far did they fall below that?—2.43 was the lowest, of course.—How many above 2.50 and below 2.75?—Four; they varied from 2.50 to 2.75.—By Supt. Kelly: In regard to the Somerset House experiments he had taken the analyses of all those cows which had calved less than two months, and he found that the average percentage of fat in the milk of recently calved cows was 4.05

The average for the whole 273 cows was 3.99. From that he inferred that the time of calving, as a matter of fact, had no effect upon the analyses.—Mr. Kitchin: You say that the milk of newly calved cows does not contain, practically, less fat than the milk of ordinary cows?—That is so.—Mr. Chapman: That is not your opinion from practical experience of farming? (Laughter).—It is taken from the Somerset House experiment figures.—Mr. Chapman: Quite so; it is taken from figures. (Laughter).—The Chairman said the Bench would like to know if the witness had a standard of fat in regard to which, if any milk submitted to him was below that standard, he would be bound to prosecute. He thought it was in the interest of the public and also of the farmers that they should know what percentage of fat their milk should contain, so that they would not be unwittingly vending milk that was not as it should be.—Mr. Hellon said he had adopted the Somerset House standard.—Mr. Chapman said there was no standard which could be a standard in a court of law.—The Chairman: That is what we want to know.—Mr. Chapman: There is no decision in a court of law as to what is a statutory standard.—The witness said that when he did not get a second sample for comparative analysis, he used the Somerset House standard, which was 2.75 per cent. of fat as stated by Mr. Bannister the chief chemist, in his evidence before the Select Committee on the Food and Drugs Act.—The Clerk: What does the Society of Analysts say?—They have adopted 3 per cent, but I never issue a certificate unless the percentage falls below the Somerset House standard. The witness added that last week the Central Chamber of Agriculture discussed the question of a milk standard, and it was proposed by a considerable majority that 3.2 per cent. of fat should be the standard below which milk should be condemned, but the motion that 3 per cent. should be the standard, as observed by the Analysts Society, was agreed to.—The Clerk: You will get it into an Act of Parliament some day, perhaps.—Witness: That was the object of the discussion. In his opinion milk which contained less than 2.75 per cent. of fat had been tampered with.—Mr. Chapman addressed the Bench, contending that the milk had not been tampered with, and if that was so, and 31 per cent. of fat had not been removed, the charge fell to the ground.—Some argument here ensued as to the figure, he observing that the figure 31 ought not to have been on the summons; that was not the charge.—Mr. Kitchin said he took it the Bench had to adjudicate whether the defendant extracted any fat from the milk at all, without regard to the percentage.—Mr. Chapman called James Dawson, son of the defendant, who said that the milking was done by himself and three brothers. The usual custom was for the milk from the eight newly calved cows to be put in one tin and the milk from the other cows in another tin. The one lot of milk was used for making butter and the other was sent out in the cart. On the 18th March the tin containing the milk for the cart was placed near the kitchen while they were having breakfast, and no one tampered with it.—By Supt. Kelly: His brother John took the milk down to Cleator; he did not know what he did with it on the road.—Mr. Chapman: You don't mean to say he skimmed it in the cart? (Laughter).—By Mr. Kelly: When the inspector came to the place for a sample witness did not tell him that the cows had been newly calved. Witness did not at that time know there had been a sample taken from the tin in the cart.—Joseph Dawson, another son of the defendant, also gave evidence.—By Mr. Kelly: He did not tell his father that the inspector had come to get a sample of milk. When the inspector visited the farm for a sample they put the whole of the milk in one tin instead of in two tins as usual.—Why didn't you do as usual?—He came and said he wanted to see the cows milked and wanted a sample.—Why did you usually put the milk from the newly calved cows in one tin?—Because cows newly calved gave more butter.—Supt. Kelly: Well, I think you are mistaken.—Witness: Well, that is our opinion.—The magistrates retired, and on their return the Chairman said they based their decision entirely on the analysis of the milk, and had decided to convict and impose a penalty of £2 including costs.—Mr. Chapman said he would apply for a case, but would do so in writing in the usual way.

A HARDENED OFFENDER.

AT Liverpool, on May 15, Richard Barnes, milk dealer, living at 1, Chancel street, was summoned for selling milk which was adulterated with water to the extent of 12 per cent., and was fined 40s. and costs.—George Webster, milk dealer, 29, Athol-street, was summoned for selling adulterated milk. Inspector Baker deposed that on the evening of the 24th ult. he called at the defendant's shop and took samples of the milk contained in a can in defendant's float, which was standing outside the shop. Witness was about to administer to the defendant the usual notice, when the latter remarked, "It's a clean cop, Mr. Baker, and I'm fairly dropped on. I am sorry you have caught me. It's no use telling any lies about it. I put half a gallon of water in it myself." Witness observed afterwards that the can which contained buttermilk had been removed. He asked for a small quantity, and gave the usual notice, whereupon defendant exclaimed, "Good God, you want to ruin me!" The analysts now certified that upwards of 16 parts of water had been added to every 100 of the poorest milk, which had also been deprived of part of its cream; and with regard to the buttermilk, it was found that 97 parts of water had been added to every 100 parts of buttermilk. The analysts added that buttermilk might not improperly contain as much as 75 per cent. of

water, in order to facilitate the churning, but 95 per cent. was a very unusual and excessive proportion. Mr. Pisce, who prosecuted, said defendant had been fined on five previous occasions for similar offences. The Stipendiary thought it was a case in which the full penalty of £20 ought to be inflicted. Defendant was not a fit person to carry on the business. He would be fined £10 and costs on the first information, and £5 and costs on the second—£16 10s. in all.

GLUCOSE AND CANE SUGAR AS FOODS.

By E. H. BARTLEY, M.D.,

Professor of Chemistry and Toxicology in the Long Island College Hospital.

GLUCOSE, either in the pure state, as invert sugar, or mixed with cane sugar, is a daily article of diet. It is an important question to determine whether there is a difference in the effects of this sugar and cane sugar. Since glucose has become a cheap commercial article, it has found numerous uses in the arts and as an article of diet. Several foreign chemists, notably Nessler, Schmitz, and Landbeck, have professed to have found in commercial glucose an unfermentable substance having injurious effects.

The experiment has been tried of adding glucose to grape juice before fermenting, to fortify the wine to be produced. This was a failure because of the disagreeable after effects from drinking the wine.

A few years ago enormous quantities were used in the manufacture of beers. Several expert brewers have informed the writer that such beers always have a bad after-effect. In 1882 a committee of American chemists examined the question with great care, and reported that there was no evidence before the committee that maize or starch sugar (glucose), either in its normal condition or fermented, has any deleterious effect upon the system, even if taken in large quantities. While the ability and standing of these chemists cannot be questioned, we may ask what experiments were made by them as to the effects of the long-continued use of glucose. In discussing the effects of an article of diet that is to be used by all the individuals of a community, the sanitarian is obliged to observe the effect upon all classes. Investigating committees are apt to select only healthy subjects for such observations, which may lead to conclusions not consistent with the truth when all classes are considered.

The physician or the sanitary authority is bound to protect the weak and diseased, as well as the robust and sound. This point is frequently overlooked. The real question should be, Are there any considerable number of persons seriously affected by this article of food, and who should be warned against its free use?

Commercial glucose is a mixture of dextrose, maltose, dextrin, and traces of other substances, in varying proportions in different samples. The chief ingredient is dextrose (grape sugar or diabetic sugar). This sugar is not furnished in large quantities by many natural sources of food, and is prepared in the human body only in the intestine from cane sugar taken with food or during the act of absorption of this sugar or the maltose formed by the digestive ferments upon starch. In other words, it is prepared by the intestinal mucous membrane in the act of removing the maltose and cane sugar from the digestive tube. Except in a few substances like honey, raisins, and figs, vegetable foods contain very small quantities of dextrose. The principal forms in which sugar is presented to the stomach by Nature's foods are either milk sugar or cane sugar. These sugars are very different in properties from dextrose, and require digestion before they can be used in the body. They are not capable of assimilation as such, and must be converted into a glucose before they can be used, and this is only done in the intestine. From this it would seem that it was not intended that dextrose and levulose should be taken in any considerable amount in our food. They are not natural but artificial foods.

Commercial glucose as prepared by the action of sulphuric acid upon starch is not a physiological product, and is different from

that produced by the digestive process. Glucose checks the action of the diastase of the saliva as well as the pepsin of the gastric juice. The same can be said of cane sugar in a less degree. Glucose undergoes both the lactic and alcoholic fermentations with great readiness and leads to gastric disturbances, besides the above-mentioned effect in causing salivary indigestion.

These effects are more marked in persons who are subjects of gastric or gastro-duodenal catarrh. Catarrhal mucus seems to cause the glucose to undergo this change with astonishing rapidity. The lactic-acid hyperacidity increases the irritation of the mucous membrane, and thus aggravates the gastric catarrh. The excessive and continual use of cane sugar will often cause the same phenomena, but not so readily. The effects of a continual use of large quantities of sugar, especially of glucose or invert sugar, and to a less degree cane sugar, are general malaise, defective nutrition, anæmia, salivary and gastric indigestion, and gastric catarrh. These effects, for some reason, have appeared to me to be more common in the young and in girls than in adults and boys, probably because of the greater indulgence of the former.

Glucose is taken in the form of candies, in the form of invert sugar—a mixture of dextrose and levulose—in cooked acid fruits, jellies, preserves, and some forms of cake and pies. It is a well-known fact that cane sugar is inverted by heating it in presence of acids. This change takes place when sweetened fruits are cooked. Every physician meets persons who can eat raw apples without stint and without after-distress, while they cannot eat apple sauce or apple pie without distressing after-effects. These same persons can drink lemon juice and water, but are sickened by lemonade or lemon pie. It is not a rare thing to find persons who can eat rock candy or maple sugar with no unpleasant after-effects, but the same amount of ordinary glucose candy will cause distress or produce what is usually known as "bilious vomiting."

The writer has known several cases of death produced in this way, and in every case it was with candy containing glucose. He has never seen a case of serious illness from eating pure cane-sugar candy, although such cases might possibly occur. Attacks of acute gastric catarrh, or acute indigestion, with fever and vomiting, are more commonly met with as the result of over-indulgence in sweets.

The writer has notes of at least two cases of recurring cholera, one in a girl and the other in a boy, which recovered almost without medication by restricting the diet to articles containing no sugar. The boy had the disease for two years in spite of medication, and recovered by restricted diet and the use of pepsin and hydrochloric acid with laxatives.

A young lady who represented that she had vomited three times a day for a year, and who had almost lived on home-made cake, recovered on a restricted diet and a mineral acid after meals. The vomiting returned whenever she ate cake, and ceased when all cooked sugar was withheld, and without medication of any kind.

This young lady illustrated in a marked degree a remote effect of the sugary diet which is often seen—viz., a catarrhal inflammation of the genito-urinary organs and of the throat. I have attributed this remote effect to the uric acid produced by the disturbances of nutrition. In the throat it may be due to an extension upward of the catarrh of the stomach produced by the excessive use of these sugars. The author can produce in himself a severe headache, preceded by marked malaise, at any time by eating apple sauce cooked with sugar, while he can eat raw apples without any such effect. He can eat currants or any of the small fruits with sugar, with no effect; while the same fruits, when cooked with sugar, produce the headache, etc. Commercial glucose produces the same effect. He has never found sugar in his urine. I can conceive of no explanation of these phenomena, except that it is the invert sugar that produces the trouble.

I have so often made the experiment and have so often seen the same result, both in myself and in others, that I am convinced of the difference in effect between raw cane sugar and cane sugar cooked with acid fruits.

Hydrochloric or phosphoric acid seems to materially lessen these effects, probably by checking fermentation in the stomach.

The following facts may, in part at least, explain why we might expect that dextrose or invert sugar would disturb the digestion and nutrition more than cane sugar or milk sugar:—

1. The greater ease with which both dextrose and levulose ferment. Dextrose and levulose undergo lactic fermentation in presence of catarrhal mucus with extreme rapidity.

2. The retarding effect of invert sugar upon salivary and peptic digestion seems to be more marked than that of cane sugar, maltose, or lactose. Salivary indigestion may be produced in this way from an excess of invert sugar or of cane sugar. Epigastric heaviness is often marked in sensitive subjects after sweet desserts, but not when these are omitted.

When cane sugar or starch is taken into a previously washed stomach, only traces of lactic acid can be found in the contents of the stomach in an hour (Ewald). The sense of heaviness in the epigastrium seems to me to be due to the retarding effect of the sugars on stomach digestion, and the liquefying action of the saliva upon the starchy foods.

3. The more ready absorption of the glucoses—four times that of peptone—is a third reason why they should not enter largely into our foods. When commercial glucose, or invert sugar, is taken as food, its absorption begins in the stomach and continues until it is all absorbed. This rapid pouring of dextrose into the portal blood may prove too great a tax upon the liver, and a portion of it pass this organ. Functional disturbance of this organ will be the result. The blood may be overcharged with dextrose, and a little of it find its way into the urine.

This, however, is a less serious accident than the tax it entails upon the oxidizing power of the blood. The blood is only able to carry a definite amount of oxygen, and if it is flooded with too much easily oxidizable material, this appropriates the oxygen that ought to be used to oxidize the waste products from the physiological action of tissue cells. These waste products must, in such circumstances, either be excreted in a half-oxidized state or accumulate in the blood. An excess of uric acid is certainly produced, with a highly acid urine and an artificial uric-acid dyscrasia, with all the symptoms of this condition.

A common and rational symptom of the deficient oxidation in the tissues is the marked feeling of malaise which such persons suffer, and which is common in diabetics. That this malaise is due to this cause is evident from the marked improvement when sugar in all forms is withheld from the diet.

When a condition such as I have described has once been established, cane sugar, maltose, lactose, and even starch often seem to aggravate the symptoms. Either from the action of the gastric mucus or the ferments lodged in the membrane, the fermentative changes in the digestive canal are produced almost as readily by cooked starch as by the sugars. It is certain that catarrhal mucus can partially invert cane sugar. For this reason, little difference can often be seen between the action of cane sugar and invert sugar in subjects of gastric catarrh; but in the production of this condition there seems to be a marked difference.

I have attributed the injurious action of invert sugar to the dextrose rather than the levulose, because the latter is so much

more readily assimilated than the former, and does not ferment so readily.

It is also uncertain whether levulose is absorbed as such, or is converted into dextrose during absorption. We do know, however, that levulose can be eaten in considerable amount by diabetics without increasing the sugar in the urine.

We may summarise the differences in the action of cane sugar and dextrose (or invert sugar) when taken as food as follows:—

1. The former is a natural food while the latter is exceptionally so.
2. The latter undergoes lactic fermentation much more readily in the stomach and duodenum than the former, and interferes more with salivary and gastric digestion.
3. The latter is more rapidly absorbed than the former, owing to the gradual formation of dextrose from the latter during absorption. This rapid absorption may overtax the liver and oxidizing process in the tissues, preventing the proper destruction of waste products of cell action.
4. Clinical observations coincide with these deductions. The only doubt to be raised in this respect as to how far the author has been able to separate the effects of the over-eating of cane sugar from those believed to be due to invert sugar or dextrose. The observations began long before the reasons for the difference in the action of the sugars was known to the observer. These reasons are brought out here to explain the clinical phenomena.

YARMOUTH TOWN COUNCIL APPOINT AN ASSISTANT SANITARY INSPECTOR.

THE House-to-house sub-committee, on the 19th ult., went through the list of applications for the above appointment, and directed four candidates to attend a meeting the following week. These gentlemen attended, and were examined by the chairman of the Sanitary Committee, with the result that Mr. Samuel Hassall, assistant sanitary inspector, Leicester, was unanimously appointed.



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Food and Sanitation.

SATURDAY, JUNE 1ST, 1895.

RUBBISH TIPPING.

OUR statements of some months ago as to the way the Select Committee on Adulteration was being humbugged brought us several protests from readers who believed the committee was really in earnest. The last three weeks, however, have so far disillusioned those who had any belief in Sir Walter Foster and his methods that those who protested the most now frankly admit that the committee is being used merely as a rubbish tip, and that it is Sir Walter Foster's game to weary the members with a mass of useless evidence as to adulteration the existence of which requires no proof, and cause the committee to close in weariness without taking any real evidence as to why the Acts are in so great a degree a dead letter, or investigating the analytical incompetence of Somerset

House, which is at the root of the failure of the Acts. The truth is that Sir Walter Foster is acting in collusion with the discredited Inland Revenue department, and he means, by hook or crook, to "burke" any enquiry into that branch of the subject. He will doubtless succeed, as he has already contrived to make the committee entirely devoid of interest or public value.

It is a great pity that the direction of the committee was not placed in the capable hands of Mr. Channing or Mr. Kearley, for it is little short of a national curse that questions so vitally affecting our trade and the health of the public should be at the mercy and the juggling of political hacks anxious to screen incompetent and mischievous public departments.

MR. LEGG *VERSUS* THE VESTRY OF STOKE NEWINGTON.

(Before Mr. Justice DAY)

In the High Court of Justice, on May 27, this important action affecting the interests of sanitary inspectors was tried.

Mr. Samuel Charles Legg, a sanitary inspector in the employ of the Hackney vestry, sued the vestry of Stoke Newington to enforce an award made under the Metropolis Management Act, 1893. Defendants denied liability.

Mr. Lawson Walton, Q.C., and Mr. C. Herbert Smith appeared for the plaintiff; while Mr. Bucknill, Q.C., and Mr. Willes Chitty represented the defendants.

It appeared that down to 1893 the parishes of Hackney and Stoke Newington were administered by the Hackney District Board, and in that year an Act was passed dissolving the board, and constituting each parish a separate district. It was thought that by the new scheme some of the officers of the District Board would lose the whole or a portion of their emoluments, and a clause was inserted in the Act entitling each officer so affected to make a claim for compensation. The plaintiff, who occupied the position of a sanitary inspector under the old board, sent in a claim to the parish of Stoke Newington, which had to pay any compensation awarded under the Act. The claim was resisted on the ground that plaintiff was not an officer within the contemplation of the statute. It was referred to an arbitrator appointed by the Home Office, and plaintiff was awarded £139 11s. 9d. To enforce this award plaintiff brought the present action. On behalf of the plaintiff it was contended that he was an officer within the meaning of

the statute, that the Hackney District Board had described him as an officer in official documents, and that he was entitled to the compensation awarded by the arbitrator. Defendants, on the other hand, submitted that plaintiff was not an officer within the meaning of the section dealing with compensation, and that therefore he was not entitled to make a claim under it. They further said that since the dissolution of the old board servants of that board who were now in the employ of the Hackney authority had made claims exceeding £6,000, and they felt it was their duty to resist those claims.

Mr. Justice Day held that the plaintiff was an officer within the meaning of the statute, and gave judgment for him with costs.

There were eleven other actions against the vestry, and in each case the learned judge held that the plaintiff was an officer and entitled to judgment for the amount which had been awarded by the arbitrator.

We congratulate Mr. Legg on the result.

ADULTERATION PROSECUTIONS.

UN SOUND FRUIT.

AT Penge, on May 21, Henry Leach, of 33, Arpley-road, was summoned for exposing apples and lemons which were unsound, for sale. There were two distinct summonses, one for the apples and one for the lemons. The proceedings were taken by the Lewisham Board of Works, for whom Mr. Wright, the clerk, appeared. Mr. Shelton, sanitary inspector, said he saw the apples exposed in defendant's window on May 4. In his opinion they were totally unfit for human food, and he told defendant he should seize the apples and take them to a magistrate. This he did, and the apples were condemned and destroyed. On the same day he saw 22 lbs. of lemons in defendant's shop window, and half of them were bad. He saw defendant in the shop, and told him the lemons were unfit for human consumption, and he also told him he should seize the lemons and carry them to a magistrate. He did so, and the lemons were condemned and destroyed. The Chairman said this was, so to speak, the beginning of the fruit season, and it was well it should be known that the sanitary officers of the district would exercise their power and take care that every such case as this was brought before them. Defendant was fined 5s. on each summons and £1 costs.

POISONOUS BAKING POWDER.

A CASE which was watched with interest by the local grocery trade and the public was investigated by the Newport (Mon.) coroner and a jury. Elizabeth Hardwick, a married woman, died from the effects of poisoning, being seized with illness after having tea at which she partook of some cake. This was made by deceased's sister, and contained, among other things, flour and "Canadian" baking-powder.

Mr. George R. Thompson, public analyst, deposed to examining the powder. He found that a portion of the powder at the opened end was pure oxalic acid. The other portion was absolutely free from acid. After mixing the whole of the powder he found the mixture gave 6 per cent. of oxalic acid. Other packets of the same powder brought to him by the police and selected at random were analysed and found to be perfectly free from oxalic acid.

Evidence as to the sale having been given, Mr. James Thomas Hosking, the manager of the Canadian Baking Powder Company, said the oxalic acid (produced) would not pass through the sieve used in the manufacture of the powder. He had never had any complaints regarding the powder made by his firm.

The Coroner said the jury would agree that, after hearing the evidence, the baking powder must, to use a common expression, go from that court without an aspersion upon it. He thought it clear that the powder did not contain oxalic acid when it left the works. The question was whether the acid was put in by accident or design. He saw no alternative but to return a verdict to the effect that the deceased died from oxalic acid poisoning, but that there was no evidence to show how it was administered.

The jury concurred, and added a rider exonerating the wholesale and retail dealers in the flour and baking-powder from any blame in the matter.

DISEASED MEAT.

AT Aberdeen, on May 22, George Innes, butcher, Spring-garden, and Hugh Walker, butcher, Longacre, were charged with having, on 10th inst., had in their possession 25 pieces of beef, weighing about 14 stones 5 lbs., which were intended for human food, and which were unfit for such food. Innes denied the offence, and Walker pleaded guilty. The Procurator-Fiscal accepted this plea. Ballie Scott said one was always surprised to see attempts of this sort being deliberately made by men who were intelligent enough to know that the public interest must be protected by the highest hand. Now he must, notwithstanding that it was accused's first offence, deal with the case on the same footing as other cases that

were dealt with which had been brought up under the Public Health Act. The full penalty would be imposed—namely, a fine of £5. the alternative being thirty days' imprisonment.

AT Salford, on May 23, before Mr. J. Makinson (stipendiary magistrate), Charles E. Clarke, butcher, 104, Chapel-street, Salford, was summoned by the Health Authorities of the borough for having in his possession and exposing for sale a quantity of beef, mutton, etc., which was unfit for human food. Mr. A. Holmes (the Deputy Town Clerk) appeared to prosecute. Inspector Fordham (belonging to the Health Department) said he visited defendant's shop on the 16th inst., and found a large number of pieces of beef, all of which, with the exception of ten pieces, were exposed for sale. The meat not on sale was lying on a board in the rear of the shop, and was partly covered with paper. The whole of the meat was seized and destroyed. Dr. Paget (the medical officer of health for the borough) had examined it and found it totally unfit for human food. Some of it was quite green and putrid, and had it been sold and eaten it might have caused an epidemic of disease. Defendant said the bulk of the meat was intended for the "bone man," and it was not intended for sale as human food. The stipendiary characterised the case as one of the worst he had ever had before him, and sent the defendant to gaol for six weeks.

BUTTER.

AT Ashford, James Henbest, grocer, South Ashford, was summoned for selling butter adulterated with 95 per cent. of foreign fat.—Sergeant Kirby purchased one pound of butter at 1s. 4d. and another pound at 1s. 5d.—Supt. Wenham produced the certificate of the analyst, which stated that the sample analysed consisted of five parts of butter and 95 parts of margarine.—The defence was that the boy who served the police made a mistake.—The Bench imposed a fine of £2 and 14s. 10d. costs.

BEER.

JAMES CHRISTIE, landlord of the Skinners' Arms public-house, Cannon-street, was summoned on May 27, at the Mansion House, at the instance of the Inland Revenue authorities, for having diluted beer, which was on draught sale to the public.—Mr. Alpe prosecuted.—On March 11 last an officer of the Inland Revenue called at defendant's premises and obtained a sample of beer which was on draught to the public as "mild ale." It was found to be diluted by the addition of 2½ gallons of water to every thirty-six gallons, after taking into account one gallon of finings, which publicans are allowed to add for the purpose of clarifying their beer.—Defendant's manager and cellarman were called, and said that Mr. Christie's orders were that nothing was to be added to the beer.—The cellarman, when called, admitted that, during the manager's absence, he had added a gallon of water without informing Mr. Christie until after the excise officers had called.—The Lord Mayor thought the case a bad one. He was satisfied, however, that Mr. Christie did not know of the addition of water, and therefore, instead of imposing the full penalty of £50, he would inflict one of £20 and £4 costs.

MILK.

AT Southampton, Henry Kimber, milkseller, of Maybush, Old Shirley, was summoned under the Food and Drugs Act for having in his possession, on May 5, a quantity of milk from which cream had been extracted, and for selling milk which was not of the quality demanded, and which contained 10 per cent. of added water.—The Town Clerk appeared to prosecute, and Mr. Lampert defended.—The summonses were taken out at the instance of Mr. Maurice Batchelor, Inspector of nuisances.—The Town Clerk produced the analyst's certificate, which showed that 11 parts of fat had been removed and 10 parts of water added.—Defendant pleaded guilty, but it was urged in extenuation that he was ill in bed at the time the milk was sold, and knew nothing of the transaction.—A penalty of 20s. and costs was imposed.

WILLIAM SHERITON, milkseller, of 111, Bevois Valley-road, was summoned for retailing milk on Sunday, the 5th inst., from which 27 parts of fat had been extracted.—The Town Clerk prosecuted, and Mr. Batchelor gave evidence in support of the charge.—The defendant said he had purchased the milk as new, but was fined £1 7s. 6d.

AT Manchester, on May 22, before Messrs. Milne and Wilson, John Bourke, 15, Tame-street, Ancoats, was fined 10s. and costs for selling, on the 25th April, milk which on analysis by Mr. Estcourt, the city analyst, was found to have had 20 per cent. of fat abstracted. Mr. Rook prosecuted on behalf of the Corporation.

AT Derby, on May 24, John Sherwin, provision dealer, Allentown, was summoned by Captain Sandys, inspector under the Food and Drugs Act, for selling milk deficient of at least 40 per cent. of its natural fat, at Alvaston, on April 25.—The case was not defended.—It appeared that the milk was sold to Mr. Hewitt, county sanitary inspector.—Mrs. Sherwin, who was in court, said that Captain Sandys had previous to this remarked upon the good quality of the milk sold at defendant's shop.—Fined 5s. and costs.

At Sittingbourne, Mrs. Emily Jarrett, of Bell-road Dalry, was summoned by Superintendent Capps, for selling adulterated milk. The county analyst certified that the milk had been deprived of seven per cent. of cream, the remaining 93 per cent. being perfect. For the defence it was stated that the milk came from a Dutch bred cow and was sold in its original state. Thomas Moor, dairyman, of Milton, was also summoned for a similar offence. In this case the sample was certified to have been deprived of nine per cent. of cream, the remaining 91 per cent. being perfect. The bench dismissed both summonses.

At Wednesbury on May 28, William Turner, milk dealer, Bloxwich-road, Walsall, was fined 4s. 6d. for selling milk from which 20 per cent. of the cream had been extracted, and to which water had been added.—The defence was that the milk was sold in the same condition as when taken from the cows.

At the Norwich Guildhall last week, Fred Minns, milk seller, of Magdalen-street, was summoned, on the information of Joseph Brooks, Inspector of Nuisances, for having in his possession milk, "from which a portion had been abstracted so as to affect injuriously its nature, substance, and quality, without making disclosure of such alteration," on April 17. The Town Clerk appeared in support of the information, and stated that Shafto Chapman purchased a pint of milk at the defendant's shop. A portion of the milk was sent to the public analyst, who analysed it, and had sent a certificate that 40 per cent. of cream had been abstracted. Shafto Chapman, assistant to Mr. Brooks, said he went into the defendant's shop and saw Mrs. Minns. He bought a pint of new milk for 1½d., and directly afterwards Mr. Brooks came in. Mrs. Minns did not ask him whether he would have fresh milk.

George Brooks, the chief Sanitary Inspector, said he waited outside while the last witness went in. Afterwards witness followed him in, and saw he had some milk in a jug. Witness told Mrs. Minns the milk had been purchased for analysis, and divided it into three parts, one portion of which he left with her. The next day he took one portion to the office of the public analyst, Mr. Crook.

Defendant admitted selling the milk, and stated that not one atom of cream was abstracted from it while it was in his shop, except in the way of trade. It was the last of the morning's milk, and the cream which always came to the top was sold as it rose with the other milk. Some customers thus got more than their share of cream and some less. He allowed of no cream to be abstracted from the milk, and always endeavoured to sell a pure article. Further than that he was not a cowkeeper, but only sold the milk as he bought it. It was an impossibility to sell new milk during the afternoon.

The Town Clerk quoted a case in which it was held that the defendant's contention of the cream rising to the surface was no defence.

The magistrates, after a consultation in private, said they were unanimously of opinion that the defendant had acted in good faith, but from the case the Town Clerk had quoted there was no doubt the law had been broken. Defendant had technically broken the law, and he would be fined the nominal sum of 2s. 6d.

GEORGE KING WOODS, milk seller, of Botolph-street, was summoned on the information of Joseph Brooks, Inspector of Nuisances, for a similar offence. The Town Clerk prosecuted, and Mr. Heaton (from Mr. Bavin's office) defended. The Town Clerk stated that in this case the public analyst certified that 24 per cent. of cream had been abstracted. Shafto Chapman, assistant to Mr. Brooks, said he went to the defendant's shop on the afternoon of April 17, and asked for a pint of new milk. Defendant served him and witness paid 2d. for it. Mr. Brooks deposed to following the last witness into the shop, and telling the defendant he was an inspector under the Food and Drugs Act. He divided the milk into three portions, and took one part to the public analyst's office. In defence Woods was sworn and stated that he got the milk at half-past seven in the morning, and it lasted till four o'clock in the afternoon. Before he sold any milk he swished the can round because the cream rose to the top. In answer to the Town Clerk, witness said if a person came to his shop in the morning for a pint of milk and again in the afternoon, he would get a better pint in the morning. He sold the milk the same as he bought it. Re-examined—There was only about two pints and a-half left in the can when Chapman came in. The magistrates inflicted a fine of 2s. 6d., without costs.

SPIRITS.

At Wolverhampton, on May 24, Annie McManus, landlady of the Royal Oak Inn, Stafford-street, was fined 40s. and the costs for selling rum containing 14 per cent. of water beyond the quantity allowed to reduce the strength below proof.—The Manchester Brewery Company, who own the house, were summoned for a like offence, and were ordered to pay the costs.—Mr. Allwood, borough inspector under the Food and Drugs Act, prosecuted, and Mr. E. B. Thornycroft appeared for the company.

At Nottingham, on May 25, Thomas Sears, licensed vintner, of Lowdham, was summoned for selling adulterated whisky. Col. Story, inspector of food and drugs, stated that on the 23rd ult. he went to defendant's house, the Plough Inn, and asked to be supplied with a quart of whisky from a stone jar labelled "whisky" which was in the room. Defendant, however, was proceeding to supply the whisky from a bottle, and when witness said he wanted

some from the jar defendant said "That's Irish whisky." Witness said he would have Irish whisky, and accordingly defendant supplied him with the quantity ordered. Witness then told him what he wanted it for, and having divided the sample into three parts he left one part with defendant, sent one to the analyst, and kept one himself. The report of the analyst on the sample submitted to him was that the whisky contained 85 parts of added water. Defendant, who said he had been in business for twenty years, and that this was his first offence, was fined two guineas.

At the Gainsboro' Police-court, on May 28, Wm. Thompson landlord of the Bridge Inn, Gainsboro', was ordered to pay £1 and costs for selling a pint of whisky to Superintendent Edgley, inspector under the Food and Drugs Act, containing 32½ parts of water, the quantity allowed by law being 25 per cent. The defence was that defendant's wife did not use the testing apparatus, but put the water in by guesswork.

At Deal, Thos. Walter Desormeaux, of the Harp Inn, was fined 10s. and 8s. 6d. costs for selling whisky adulterated 315 degrees below the legal limit of strength. He stated that he had his whisky from two firms, one supplied at proof and the other 10 per cent. under proof, and by mistake broke down the wrong.

COFFEE FROM FIGS.

ALMOST the entire crop of figs grown in the Greek province of Messina is shipped to Trieste, and is there roasted, ground, and converted into—coffee! So we read in a recently-published Foreign Office paper. Ever since coffee was drunk it has received a large share of the attentions of the adulterator. Accum records that pease, beans, gravel, and sand have been employed in the work of sophistication; and burned dandelion roots, horse-liver, and other nasty stuffs have served the same purpose. But the introduction of figs is a novelty.

GLUCOSE AS FOOD.

In a comprehensive article read before the New York Section of the American Chemical Society (*New York Medical Journal*, April 20th, 1895), Dr. E. H. Bartley justly criticises the long-accepted opinion that commercial glucose is suitable as a food. This opinion was promulgated some years ago by a committee of American chemists appointed partly under Government auspices, and has been made the basis for justification of much substitution and adulteration. In the same way the opinions of some eminent chemists in favour of oleomargarin have been extensively quoted in defence of that article. Dr. Bartley points out that mere chemical knowledge or even experiments on the lower animals or healthy subjects for a brief period are not sufficient to establish the harmlessness of a substitute food. Glucose made from starch by the action of acid is not the same as the product of digestion by animal ferments, and it is not likely that it will be a satisfactory substitute for the forms of sugar that arise in the process of normal digestion.

THE FOOD AND DRUGS ACTS IN STOCKPORT.

At the Stockport Borough police-court, last week, a number of summonses under the Food and Drugs Act were heard. Henry Morten, of Waterside Farm, Bredbury, was the first case called. Mr. F. Newton appeared for the defendant, and Mr. Dobson prosecuted. The charge was that the milk in question was adulterated with water to the extent of 1½ per cent.

Inspector Billingham said he met a servant of defendant's in Lancaster-street, Portwood, on the 21st April, delivering milk to Silas Garner, and took a sample, which was forwarded to Mr. W. Thompson, analyst, Manchester. Witness afterwards met John Ashmore in Parkwood, and purchased a pint of milk for 1½d., informing Ashmore that he had bought it for the purpose of analysis. Witness divided the quantity purchased into three parts, one of which was forwarded to the public analyst on the following day, from whom he received an acknowledgment stating that the sample contained at least 1½ per cent. of water.—Examined by Mr. Newton: He was quite certain that he informed Ashmore the milk was for analysis.

Silas Garner, milk seller, Portwood, said he had a contract with defendant for daily deliveries of milk. The size of the cans were six dozen, but one of them had only 511.

The Chairman asked what price witness paid, as in previous cases the price had been varied from 1s. 9d. to 2s. 4d. per dozen. In some instances, the quality of the milk varied according to the price paid.

Witness stated that he paid the highest price for the winter months.

Mr. William Thompson, F.R.S., Edinburgh, Member of the Council of Great Britain and Ireland, and public analyst for the borough, said he was satisfied that a number of the milks analysed were adulterated, the lowest record being 1½ per cent., but the probability was that the milk in question had been adulterated to the extent of 10 or 15 per cent. The milks of Stockport were of good quality as a general rule. The analysis of the milk was 8.5 of solids, 3 per cent. of water, and 1½ per cent. of added water; 9.5 of solids and 3.5 of fat would constitute ordinary milk—it was a low

standard. From a good dairy of milk 13.5 to 14.5 of solids would be obtained, and 3.5 to 4.5 per cent. of fat; 8.5 was a standard of milk which might not be sold, and the animal ought to be slaughtered. Witness could not distinguish the difference between added water and the water as a constituent part of the milk.

Mr. Newton, in defence, said that he was instructed to apply to the magistrates that the sample of milk in question should be sent to the Commissioners of Inland Revenue at Somerset House to whether the analysis was correct.

The Chairman said they would deal with the case that day.

When the magistrates returned from an adjournment for luncheon, Mr. F. Newton addressed them for the defence. He said defendant had 17 cows at Waterside Farm. On the particular morning in question the men had not taken the "drippings" from the cow, a part which had a material effect upon the quality of the milk. His client was quite prepared to bear the expenses of an analysis by the Somerset House authorities. He then called Henry Morten, who stated that he was the tenant of Waterside Farm, Lower Breddbury. On the day in question his milkman complained of being short of milk. He had supplied Garner with milk during the past seven years, and had never received any complaints. Witness was not at home on the 21st April. He had been informed that the milking was done in a hurry.

Michael Comer corroborated counsel's statement that the cows were not "milked dry." The milk was subsequently handed over to John Ashmore. There was no water added.

Fined 40s. and costs.

SHOREDITCH VESTRY AND MILK FOR PAUPERS.

THE clerk reported that the Friern Manor Dairy Farm, Limited, 20, Farringdon-road, the contractors to the Guardians for milk, had been summoned at Worship-street for supplying milk 30 per cent. deficient in fat. As the Guardians have the power to fine the contractor £10, a fine of 10s. and 12s. 6d. costs was inflicted.

AN AMATEUR FARMER'S BUTTER.

A CURIOUS explanation was given in a summons heard at Highgate on May 27 against Messrs. Leverett and Frye, Limited, grocers and provision dealers, for selling butter which was adulterated with 20 per cent. of foreign fat, and with exposing margarine for sale which was not labelled. Mr. W. T. Ricketts, who defended, said the manager of the Finchley branch of the firm had, in order to oblige a customer—an amateur farmer—agreed to sell for him his surplus butter, and they were quite surprised to hear that they were selling adulterated butter. The Bench held that the firm was responsible, and fined them 40s. and costs on the butter summons, and dismissed the others.

PROCEEDINGS UNDER THE PHARMACY ACTS.

At the Bloomsbury County Court, on May 23, John S. Armitage, dentist, etc., 1, Colva-street, Dartmouth Park Hill, N., was proceeded against for penalties under the Pharmacy Act for keeping open shop and selling chlorodyne and Powell's balsam, he not being a registered chemist and druggist. Mrs. Lavinia Hill, of 91, Lower Marsh, Lambeth, was similarly proceeded against for keeping open shop and selling Powell's balsam, and J. A. Hogg, 45, Walworth-road, S.E., for selling Hogg's rodentium vermin killer, containing a very large proportion of arsenic.

BAD CASES IN LIVERPOOL.

At Liverpool on May 22, T. Robinson, Wavertree-road, was fined 20s. and costs for having exposed margarine for sale without it being properly labelled; and James Parkinson was ordered to pay penalties of 10s. and costs and 20s. and costs for selling new milk adulterated with six per cent. and skim milk adulterated with 14 per cent. of water.

WILLIAM FORRESTER, Mill-street, was summoned for having exposed for sale two pieces of corned beef which were unfit for human food. Inspector R. H. Jones visited the defendant's shop on the evening of the 11th inst. and found two of a number of pieces of corned beef on the counter in a stinking condition. They were seized and destroyed. The defendant said it was an oversight on the part of his assistant in not examining the meat when turning it out of the tins. A fine of £3 and costs was imposed.

THE ANTISEPTIC VALUE OF MILK.

EVIDENCE of the antiseptic power of milk has been supplied by M.M. Gilbert and Dominici. An adult man, whose fæces contained 67,000 germs per milligramme, was restricted for five days to milk, and at the end of two, three, four and five days respectively the germs had fallen to 14,000, 5,000, 4,000 and 2,500. Here we have evidence of the antiseptic value of milk in contrast to the other side, so much of late discussed, viz., "Milk as a Vehicle of Disease."—*Inventions*.

THE BUTTER TRADE.

SIR WALTER FOSTER received a deputation of members of the butter trade industry at the House of Commons on May 22, their object being to ask him, as Chairman of the Food Products Adulteration Committee, to issue an interim report as to butter and margarine.—Sir Walter Foster, in reply, said it was impossible to accede to the request, inasmuch as the various subjects being dealt with by the Committee were very much involved.

IMPORTANT TO PUBLIC ANALYSTS.

THE Sewers and Sanitary (Public Health) Committee of the Camberwell Vestry, the largest ecclesiastical district of London, has had under its consideration a subject of interest and importance to public analysts. At a recent meeting of the Vestry, in consequence of attention having been drawn to the subject, it was resolved that the resolution of 1875, fixing the number of samples to be taken and the amount to be received by the public analyst, be altered, that the number of samples to be taken annually be increased to a minimum of 500, and that the public analyst (Dr. Teed) be paid, subject to the approval of the Local Government Board, a salary of £200, for analysing 500 samples. Since then Dr. Teed has written to the committee, pointing out that he has had no opportunity of being heard on the Vestry's fresh proposal, which meant that 300 extra samples had to be analysed for the sum of £42 10s. more than he had been receiving, or at the rate of 2s. 10d. per sample, out of which sum he had to provide gas, chemicals, appliances, and laboratory. He further points out that he has been analyst to the Vestry for some years, during which time his analyses have never been upset, and that a single mistake on his part, resulting from carelessness or want of skill, might have cost the parish half his yearly salary. In asking the Vestry to reconsider its decision, Dr. Teed states that if 500 samples were submitted to him on the existing agreement the salary would be £275 12s. 6d., and that he hopes the proposed reduction of this sum to £200 is not to be taken as showing that the Vestry is dissatisfied with his services in the past. The Local Government Board has been informed of the resolution passed by the Vestry at its last meeting with reference to the matter, and in reply draws attention to Section 10 of the Sale of Food and Drugs Act, 1875, which states that the remuneration of an analyst is not subject to the approval of the Board, but is to be such "as shall be mutually agreed upon" between the officer and the Vestry, which has not been done as regards the present proposal. If an average is taken for the past five years of the whole of the metropolis (with the exception of Battersea, which pays its analyst £200 for analysing 300 samples), it will be found (the report of the committee states) that a fee of 14s. 9d. is paid for each sample which is analysed, whereas this Vestry only proposes to pay its analyst a sum of 8s. for each sample analysed. The amount formerly paid to Dr. Teed was £157 10s. for 200 samples, or 15s. 3d. per sample, and the committee's recommendation is that 11s. shall be paid for each sample. The average fee of 14s. 9d. quoted above takes no account of laboratories and appliances, or assistance provided in certain cases, nor of a sum of £25 given by Hammersmith Vestry in lieu thereof. The committee, having carefully re-considered the whole matter, were of opinion that their original recommendation was a fair and just one, and asked the Vestry to adopt the following recommendation: "That the number of samples to be taken annually be increased to a minimum of 500 as and from the 26th day of March, 1895, the Public Analyst, Dr. Teed, to be paid a salary of £275 for analysing 500 samples, and a further sum of 7s. 6d. for every additional sample analysed; and that the resolution of the Vestry of the 10th April, 1895, fixing the number of samples to be taken and the amount to be received by the Public Analyst, be varied and altered accordingly." At a special meeting of the Vestry on Wednesday, May 8, this recommendation was moved, but negatived, inasmuch as the necessary two-thirds majority to rescind the previous resolution did not vote.—*Chemical Trade Journal*.

RETAIL TRADERS' VIEWS ON THE ADULTERATION ACTS.

IN order to obtain the opinions of retail dealers upon the subject of margarine legislation now under the consideration of a Select Committee of the House of Commons, the *Manchester Guardian* says:—"The Liverpool and District Grocers' Association recently addressed a number of interrogatories to its members. These were sent to 213 traders having 503 shops, and the following is a synopsis of the resulting answers. On the question whether or not the sales of blended butter and margarine, known as 'mixtures,' should be abolished, 103 firms answered 'No' and 29 'Yes,' whilst 17 were against and 115 for the giving to margarine a different colour from what it bears at present. Against the compulsory making up of margarine in 1lb. and ½lb. blocks there were 116 answers, 15 being in favour. Against the repeal of the section of the Margarine Act making assistants as well as employers liable for offences under the Act there were 108 answers, and 21 in favour of the repeal, whilst 96 desired its extension to the Food and Drugs Act and 19 were against the extension. On the question of requiring retailers of margarine to take out licences 103 firms voted in the negative and 23 in the affirma-

five. In favour of making an invoice a sufficient warranty of genuineness 128 were in favour and only three against. Where mixtures are sold with a printed statement describing them as such 107 firms were of opinion that no verbal declaration to that effect should be required by statute, whilst 24 thought it should be. Upon the question whether or not summonses for the sale of margarine when butter is asked for, but when the provisions of the Margarine Act have been compiled with, should be issued under the Food and Drugs Act, there were 107 answers to the effect that they should not, whilst 24 said that they should be so issued."

CASES UNDER THE IRISH PHARMACY ACT.

ON Monday, May 20, at Roscommon Petty Sessions, Mr. W. Lowden Browne presiding, Messrs. Daniel Walsh and Patrick Walsh, of Castle-street, Roscommon, appeared to answer three summonses at the suit of the Pharmaceutical Society of Ireland, the first of which charged them with having, on March 1 last, sold arsenic in a packet labelled "Cooper's sheep dipping powder" to the complainant, George A. Phillips, they not being properly qualified to do so; the second for keeping open shop for the retailing and dispensing of poisons without being qualified to do so; and the third with selling poison not labelled in the manner required by Section 2 of the 33rd and 34th Victoria, the Poisons Act. Mr. James Jones, of Castle-street, in the same town, also appeared as the defendant in four summonses at the suit of the same society, charging similar offences, the articles alleged to have been sold to the same complainant being "Bigg's sheep dipping composition" and "Cooper's sheep dipping powder."

Mr. John M. Whelan, solicitor, of Roscommon, prosecuted on behalf of the society. Professor Tichborne, one of the members of the council of the society, was in attendance.

Mr. Joseph Burke, solicitor, appeared for the defendants Walsh.

Mr. Whelan said he appeared for the Pharmaceutical Society of Ireland to prosecute in these cases which were brought under Section 30 of the Irish Pharmacy Act of 1875 and the Poisons Act.

Mr. George A. Phillips, the Inspector of the Pharmaceutical Society, was sworn, and Mr. Whelan was about examining him when Mr. Burke said he had a preliminary objection. It had been stated that these prosecutions were brought at the instance of the Pharmaceutical Society, but the complainant named in all the summonses was Mr. Phillips. Under Section 4 of the Act of 1875, the Pharmaceutical Society were made a corporate body capable of "suing and being sued." He submitted that the summonses should be dismissed.

After a considerable amount of argument, the Magistrate decided to adjourn the hearing of the summonses for not properly labelling poison until the next court day, and to dismiss without prejudice the other summonses.

ABERDEEN ANALYSES.

THE following report and recommendation by the Public Health Committee have been adopted by the Aberdeen Town Council:—"The Committee beg to refer to the remit from the Council in regard to the letter from Messrs. John Wallace and Co. and Messrs. R. and J. Salmond, grocers, confectioners, and aerated water manufacturers, complaining of the reports by the city analyst (Mr. Thomas Jamieson) in connection with certain analyses made by him. The Committee have heard the complainers and their agent, but regret that the city analyst has declined to meet them or a sub-committee, or to hold any communication with them on the subject except by letter. After full consideration the Committee beg to report to the Council as follows:—(1) That in November, 1892, proceedings were instituted against the complainers by the sanitary inspector on reports and analyses furnished to him by the city analyst. These reports and analyses were on this occasion checked by the official analyst at Somerset House, to whom a number of specimens of aerated waters were sent. The city analyst's report showed fully seventeen times as much lead in the aerated water as did the Somerset House report. Proceeding were thereupon dropped. (2.) That in the opinion of the Committee the city analyst's error was a serious one. The fact of proceedings having been instituted might tend unjustly to damage the trade of the complainers. The Committee therefore beg to recommend that the Council should warn the city analyst to exercise greater care in his analyses, so that there may be no risk of a similar error in future."

BOVINE TUBERCULOSIS COMMISSION REPORT ON THE CIRCUMSTANCES DETERMINING DANGER FROM MILK.

THE Committee say:—"Proceeding to consider the milk of tuberculous animals, our problem about the presence or absence of tuberculous matter becomes simpler. We are not then examining solid structures about which tuberculous matter, when once admitted in the body, has to travel by a slow growth of its bacilli among the solids, or by tardy convection along microscopic lymph channels; but we have to do with a secretory apparatus, giving off quantities of a liquid perfectly adapted for the maintenance of tubercle bacilli, and specially adapted for their transmission to other soils. Dr.

Martin's tests are now far more easy of application; moreover, the complications introduced by operations of slaughtering and dressing do not here exist; so that the question of the conditions for any prejudicial effect resulting from the use of milk from tuberculous cows can be determined with correspondingly greater ease and accuracy.

Dr. Martin made experimental observations on milk taken (with an abundance of care) from 17 cows: from 15 suffering, as he judged—and as was afterwards proved *post mortem*—from tuberculous disease; and also on that taken from two other cows which were found, after slaughter, to have no tubercle, but to be suffering under some other complaint.

He gives the following account of nine cows out of the total 17, and his account is of wider interest than for the experiments under our immediate consideration.

"During the course of the investigation, nine cows with disease of the udder were purchased by the Commission. . . . They were all purchased with the idea that the disease of the udder was tuberculous, the diagnosis being made by a veterinary surgeon, and on the ground that the cow was tuberculous from the wasting or cough, or was probably tuberculous, and that the udder was diseased, and therefore tuberculous. Of the four cows in which the udder disease proved to be non-tuberculous, two showed tuberculous of the internal organs, and two showed no tuberculous anywhere, one of these latter having a sub-diaphragmatic abscess, the other a thin cow with the first calf, showing no disease anywhere in the body, except in the udder. If reliance be placed therefore on the general condition of the cow, and on the physical examination of the udder, an accurate diagnosis of tuberculous disease of the udder is not possible." [§ 159, pp. 41 and 42.]

The milk yielded by the 17 cows under observation was found, in the case of some, to have the characters of normal milk, in the case of others to have various abnormal characters. Dr. Martin could not trust, for evidence of the presence or absence of tuberculous matter in the milk, to any indications obtained from the appearance of the milk or from his chemical examination of the milk.

Of his 15 tuberculous cows, eight had their udders in a healthy condition; two (as above recorded) had udder disease, which was proved after slaughter not to be tuberculous; and the remaining five had udder disease, proved *post-mortem* to be tuberculous in nature.

Applying to the milk furnished by the 17 cows the three tests before described as being available for the detection of tuberculous matter, Dr. Martin obtained the following results from his different groups of cows:—

- (a) The eight tuberculous cows which had healthy udders, showed him no tubercle bacilli whatever in the milk of any one of them; 41 test animals fed with their milk remained perfectly free from tuberculous disease; 28 test animals inoculated with their milk also remained quite free from tuberculous disease.
- (b) The two tuberculous cows which had udder disease found *post-mortem* not to be tuberculous in nature, showed him no tubercle bacilli in their milk. Three test animals, fed with their milk, and 14 other test animals, inoculated with their milk, remained, all of them, perfectly free from tuberculous disease.
- (c) Of the five tuberculous cows which had udder disease found *post-mortem* to be of tuberculous nature, three showed him tubercle bacilli in their milk. He could not find tubercle bacilli in the milk of the other two. With milk from the three cows 15 test animals were fed, with the result of producing tuberculous in every one of them. With milk from one or other of the same three cows, 13 test animals were inoculated, with the result of all 13 acquiring tuberculous disease. The milk of the fourth cow (one of those which had not shown tubercle bacilli) was used to feed 10 test animals, and produced tuberculous in four of them. Inoculated into six test animals, all of them became tuberculous. The milk of the fifth cow (in which also no tubercle bacilli had been seen) was used to feed two animals, but without result. Yet, when it was used to inoculate two other animals, both of them acquired tuberculous disease.
- (d) It remains to note these tests as applied to the milk of the two cows found after slaughter to be suffering under another disease, but not tubercle. The results were: no tubercle bacilli found in the milk of these cows; inoculated into 17 test animals, it did not produce tuberculous in any one of them; milk from one of the cows, however, in some test animals gave rise to various abscesses.

According to our experience, then, the condition required for ensuring to the milk of tuberculous cows the ability to produce tuberculous in the consumers of their milk, is *tuberculous disease of the cow affecting the udder*. It should be noted that this affection of the udder is not peculiar to tuberculous in an advanced stage, but may be found also in mild cases.

Further, with reference to this disease, Dr. Martin writes: "The milk of cows with tuberculous of the udder possesses a virulence which can only be described as extraordinary. All the animals inoculated showed tuberculous in its most rapid form. (§148. p. 39.)

Dr. Woodhead, investigating, for his own purposes, the effects of unbolled milk, speaks in similar terms of this virulence of milk derived from tuberculous udders and inoculated into test animals.—The two observers had occasion to use milk from a cow that had tuberculous disease in one quarter only of the udder; and they

found the milk from the other three-quarters to be perfectly harmless on inoculation; but the mixed milk taken from the four teats was to all appearance just as virulent as the milk from the diseased quarter.—Butter, skimmed milk, buttermilk, obtained from the milk of a cow having tuberculous udder (by the usual processes, but with complete precautions against accidental contamination of articles used in the manufacture) all contained tuberculous matter actively injurious to test animals.

¶ And not only this virulence, but the rapidity with which milk can obtain its harmful quality, attracted Dr. Woodhead's attention. He reports:—"A most important point is that the spread of tubercle in the udder goes on with most alarming rapidity; this I was able to observe in the cows constantly under observation, but I have also noticed on several occasions during the interval between fortnightly inspections carried on along with a veterinary surgeon, that the disease has become distinctly developed. It may be, of course, that the earlier evidence has been overlooked at the previous inspection, but whether this is the case or not, the spread of the disease was so rapid as to afford very good ground for alarm. The very absence of any definite sign in the earlier stage is one of the greatest dangers of this condition" [§104, p. 143]. And both Dr. Martin and Dr. Woodhead insist that no tuberculous animal of any kind should be allowed to remain in a dairy.

The withdrawal from dairies of every cow that had any disease whatever of her udder would form some reproach to security against the serious danger incurred by man from the use of tuberculous milk, but it would not be an adequate security. The presence in a dairy of a tuberculous cow, as Drs. Martin and Woodhouse have shown, is a decided source of danger to the public, especially having regard to what we have learnt respecting the rapid development of tuberculosis in the udder, and the degree of danger to milk consumers incurred by the invasion of the udder in tuberculous cows.

It follows from the observations here recorded, that it is of supreme importance to the consumers of milk that the existence of any tuberculous disease of the udder should be ascertained without delay. Now there is no difficulty whatever about recognising the presence of some abnormal condition in a cow's udder, and the presence of such condition—whatever it be—demands that the judgment of a responsible expert should forthwith be obtained about its nature; unless, indeed, the owner prefers to slaughter the cow without delay. If the expert find tubercle bacilli in the milk, the cow has dangerous tuberculosis of the udder. If he does not find them, he may apply the further test of inoculating some susceptible animals with the milk, and thereby learn the nature of the udder disease. By this test he will very rarely be misled. Obviously the cow must be in seclusion, and every particle of her milk must be treated as highly dangerous during any delay that can be permitted for diagnostic purposes, and until the disease has been proved not to be tuberculosis.

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In his "Farm Notes" Professor Long wrote:—With reference to the remarks made in these columns by a correspondent upon my description of the awarding of a prize in a butter contest in America to a sample of Chicago margarine, I would observe that, while admitting the food value of margarine and the fact that it might become a very considerable boon to the poor, yet it is now sold in such a sophisticated form, admittedly in imitation of butter, that it is substituted for it to the destruction of the pure butter trade and—apart from the sentimental view of the question—to the loss of the purchaser. The margarine advocates—and I have no fault whatever to find with the argument used by the correspondent in question—will not deny that butter costs in production practically all that it realises in the market, and that there is really no margin of profit in the great majority of cases. Thus, if butter is undersold by a sham material which cannot be identified, one interest is crushed for the benefit of another. So far as I have been able to see, the margarine manufacturer is honest in what he produces; he makes a material for an ostensible purpose; but there is this fact about it, that it is made to imitate butter and to supplant butter on the tables of those who are unable to detect the difference. Thus it is that both maker and retailer are enabled to realise much higher prices than the material is actually worth, putting its value at the cost of the raw material, the process of manufacture, and a fair profit. If margarine were sold, as butter is sold, at a price approximately near the cost of its production, the consumer would be enabled to obtain it at some pence per pound less than it realises; and it is the fact, as I believe, that it bears a very large profit as compared with butter that has created the enormous interest in its retention in its present form. The butter consumer of to-day is so easily and so often deceived that he is rarely sure whether he ever buys butter or not. I include myself among the number, having on several occasions purchased what appeared to be mild Danish or mild Normandy, but which, upon analysis, proved to be a mixture. Many similar samples are sold every day, and without the shadow of a doubt the majority are as much sophisticated as those referred to. I am not an opponent of margarine as a food if it is sold in its natural condition and colour, and have more than once been freely criticised for advising farmers to combine and manufacture it themselves. But when my critic suggests that margarine is a substitute for butter as flannelette is a

substitute for flannel, then, unintentionally, he gives the margarine case away; for it is not possible for any intelligent person to be deceived in the purchase of flannelette, and this is the crux of the whole question. Prohibition of mixing and prohibition of colouring will alone settle this very difficult problem.

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I admit that the dairy and butter interest are wise in their day and generation in trying to strangle margarine. It is the repetition of the hand-loom weavers' protest against the power loom. The same alarmed cry comes from every established industry against a growing and formidable rival. The chemist will beat the dairyman; the cow is the groundwork of both their operations. Professor Long has shown where margarine has taken two prizes against twenty samples of dairy butter. That is the academic test. Let us for a moment look at the practical test. Turning to your own commercial columns, I find that with the exception of strictly choicest butters, the best margarine mixtures realise a better price than every other description of butter except the best. A fine edible article is being sold in the leading retail shops at 5d. per lb., ticketed plainly in the windows. This commodity is wholesome and palatable. What a boon to the struggling poor! Yet under the pretence of protecting the consumer a certain school in the dairy or butter interest would wish to see margarine sold the colour of tallow, or green, or blue, or pink. The agriculturist is a born Protectionist. By one ingenious method or another he tries to evade our Free Trade policy, on which our manufacturing and commercial supremacy has triumphed over universal hostility and State-aided competition. He has opposed successfully the importation of live cattle from Denmark in order to protect the health of his flocks. Denmark's enterprise being shut out she is compelled to increase her make and export of butter from those home-staying cattle. Now, Holland, Denmark and Sweden are beginning to export milk and cream to England. Our agricultural interest again cry out, "Stop this, or our people will be infected with impure milk, as we cannot inspect foreign shippings." Is it not strange that no one, not even our sanitary officers, manifest such a lively care for our health as the agriculturists? We know they would put a tax on imported corn—only to equalise fiscal burdens, you know. If they could get bread up one halfpenny per loaf, and butter one penny per pound, and meat twopence, the artisans to pay the farmer and the latter the landlords, what a happy nation we should be! Had we listened to those arguments, this kingdom, with its population approaching 40,000,000, bearing an imperial taxation of £100,000,000 and a local taxation of half as much more, could never have expanded to its present power or rank in the world. We could not have fed half of our people. The land might have been a paradise for farmers and landlords, but at the cost of the misery and semi-starvation of our town population. The artisan would be the serf of the farmer. Impose what penalties you may on dishonest trading, but let free competition in every direction develop our genius and enterprise. If excessive competition begets manifold evils, it will also correct them. Let the nation govern, and not a class or an interest, however powerful. Butter is not the line of salvation for the British dairy farmer. In a poor country like Sweden one sees cream in every hotel, restaurant, and private house at every meal. Something resembling sky-blue milk is too universal in England. Nothing can pay the dairy farmer like milk and cream. In parts of Sweden the peasant proprietors pay nothing but rates and taxes—no rent. They used to sell butter at 5d. per lb., and the payment was looked on as pin-money for the housewife. Finland and Russia are becoming exporters of butter, as well as our Australian colonies. 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—and until the reduction of that high duty to 10s. per cwt. and its subsequent abolition. The poor were deprived of the power to buy at a low price genuine butter when once it fell below that quality which would bear the heavy duty. Thousands of casks of butter were kept in bond, and were ultimately exported to the West Indies, and before the remainder could be sold to the northern farmers for smearing the sheep in the winter months the butter had to be spoilt for human food by hot tar being stirred into each cask. The year of the first exhibition in London, 1851, was, contrary to all expectation, the cheapest year for butter that was then ever known. Best Dutch was sold at 56s. per cwt. wholesale as it landed from the steamer on to Brewers' Quay, Lower Thames-street. The freedom of trade and the growth of the population compelled a greatly increased supply of butter, and as neither the Irish nor the English farmers did much, if anything, to improve their methods of making butter, the great demand was supplied from abroad; and as the better qualities were beyond the reach of any of the lower, middle, and working classes, the manufacture of adulterated butter for sale at moderate prices was promoted very largely on the Continent, especially in Holland. If Professor Long could have seen the wretched stuff which was imported—of which the most innocent adulterant was water—he would know, as I do, what an enormous boon to the consuming millions has been the discovery of margarine by a distinguished French chemist a year or two before 1870. The French farmers were innocently the first to suffer from the invention of margarine, and its gradual perfecting as butterine in Holland, for in 1871, during the short reign of the Commune in Paris, riots took place at French ports against the exportation of butter, eggs, and poultry to England. The Administration in France prohibited the export of any food, and in the two months during which that prohibition lasted the first mischief was done. The merchants engaged in the Dutch butter trade in Manchester sent to Holland empty French butter packages, and the manufacturers immediately copied them, and even put on their outside French words such as "Normandie"; until 1887 that name could be seen on thousands of packages of Dutch butterine.

It was Professor Long who gave the very highest testimonial to the perfection of margarine, in his "Farm Notes" in the *Manchester Guardian* of April 9, which I have ever seen in print. For he therein stated that a public official and a scientific expert had awarded two prizes to exhibits of margarine over 20 samples of dairy butter, and "after three weeks' consideration and analysis he deliberately reaffirms his decision and declares that the verdict was a right one." Mr. Long, however, went on to say that "this matter deserves close attention at the present time, especially as it is too well known that there are samples, and plenty of them, in the market which it is practically impossible even for an expert to distinguish from butter." And then he "calls on members of Parliament and others who are responsible for the law . . . to do all in their power to make the mixing of butter and

margarine illegal" in the United Kingdom or abroad. He expects that inspectors under the Margarine Act should be able to do what the Professor has just stated is practically impossible for an expert and an analyst in one to do—namely, to distinguish the good imitation from the best dairy butter. Mr. Long is the British farmer's friend or he is nothing. He knows, too, there are many margarine factories established in England, Ireland, and Scotland, and that for their manufacture they require the milk of many thousands of cows. Would it not be more consistent in a farmer's friend to encourage margarine manufacture, which is the only thing which can overcome the *inertia* and prejudice of farmers in Ireland and England, and get them out of the old ruts into which their ancestors allowed their mode of butter-making to fall? I have had an object-lesson to-day on the Manchester market which may interest Professor Long. Last week choice Tipperary butter could not be bought there at less than 70s. on rails, equal to 76s. if sold in Manchester with a small profit. A buyer of Irish butter, being asked 76s., would not pay it, and went elsewhere and bought an equal quality of Tipperary butter at 65s. Professor Long, in his "Farm Notes," in your impression of to-day says your previous correspondent "will not deny that butter costs in production practically all that it realises in the market, and that there is really no margin of profit in the great majority of cases." What I have just stated of Tipperary butter, which cost to produce probably more than 70s., and which was sold in Manchester at 65s.—equal to about 58s. to 59s. in Ireland—shows clearly that the value of anything is what it will fetch, and not what it has cost to produce. One would have thought the Professor, in his zeal for the farmers, would not have lost sight of this very elementary truth. For more than 20 years I have been selling French butter for a very honourable man, who has repeatedly been asked by his French *confirms* to adulterate or improve his genuine butter by the admixture of margarine, but he has replied that he would go out of the trade altogether rather than do such a thing. What has been the consequence to him and to me? He has been unable to ship anything to speak of since the great fall took place in Denmark, when the Copenhagen monopoly broke down, and his last quotation to me was 106s., when the best Danish butter was selling at 86s. to 90s., which is the current market price to-day. The Danish producers must have lost enormously ever since November 8, 1894.—Yours, &c.,

HENRY B. WILKINSON.

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—*Times.*

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Food and Sanitation.

SATURDAY, JUNE 8TH, 1895.

DISEASE AND DISINFECTANTS.—VIII.

SOME months ago Dr. F. J. Allan, Medical Officer of Health, Strand Board of Works, examined a room which had been disinfected by a sulphur dioxide preparation, and was somewhat surprised to find some specimens of Norfolk Howards which appeared not only very much alive, but seemed to have thoroughly enjoyed their "annihilation" by S.O₂.

Dr. R. Sydney Marsden, Medical Officer of Health, Birkenhead, has recently had a curious experience which he related at the meeting of the North Western Branch of the Society of Medical Officers of Health, held in the rooms of the Chemical Club, Manchester, on May 10. Dr. Marsden said:—

"It is not my intention in these notes to go into the theory of disinfection by means of sulphurous acid, as I take it for granted that my hearers are perfectly acquainted with its chemical properties and its supposed action as a disinfectant.

"You are probably also all well acquainted with the new form of sulphurous acid in the liquefied condition,

which is now being supplied to sanitary authorities in large quantities, and is receiving the eulogia of many medical officers of health and others for its efficacy, cleanliness, and various other advantages which it is supposed to possess. I had, however, a somewhat remarkable experience a little time ago with this substance which I have thought it desirable to bring before you for your consideration.

"The chief inspector of nuisances in my district happened to have a couch which had become infected with moths, and this offered an excellent opportunity for trying the effect of this sulphurous acid. The couch was therefore put into a room containing 1,116 cubic feet, or just the size which one tube of the gas is said to disinfect; a tin having been put in and opened, the room was securely sealed up and allowed to remain for twenty-four hours. On opening the room the next day the moths were found alive and well, apparently none the worse for the stoving. The room was again treated in a similar manner, but with no better result. The couch was treated mechanically to get rid of the moths, but a month after its removal downstairs the nits again came out, and the couch was as bad as ever, so that neither the moths nor the nits were affected by the gas.

"If, then, this substance has so very little effect upon moths and their nits (when articles affected with them are treated in the ordinary way), is it likely that it will be of much use in dealing with microscopic germs, such as we require to kill during the process of disinfection of rooms and clothing after cases of infectious disease?"

ADULTERATION IN BIRMINGHAM.

DURING 1894 there were (says Dr. Alfred Hill) 1,129 samples analysed, 124, or 11 per cent. of which were adulterated. This was a rather lower figure than usual, the percentage in the previous year having been 13.

It is pleasing to find that the percentage of adulterated milks was so much lower than in any former year, 10 per cent. comparing very well with the best figures previously recorded. Of the 33 adulterated samples, 14 contained too much water, 12 possessed too small a quantity of fat, and 7 had presumably been both watered and partially skimmed. The amount of adulteration varied very greatly; one sample had as much as 27 per cent. of water in excess of the natural quantity, and, at the same time, was deficient of 19 per cent. of the proper amount of cream. I think it must be admitted that the sale of such a milk merited a much heavier fine than 10s. and costs, the amount imposed by the magistrates. In

another instance, 20 per cent. of cream had been abstracted, and the milk had been coloured to hide the offence.

Thirty-one, or 14 per cent., of the butters contained fats not found in the genuine article; in other words, they were really margarine, some containing a little butter fat, and some none at all. Such articles may be quite wholesome as food, but their sale as butter is a distinct fraud.

Of lard there were 35 samples, and of cheese 3, all of which were genuine.

Thirty-six samples of bread and 12 of flour were examined. They all proved to be genuine, so that it would appear that these staple articles of diet are not adulterated, at least to any serious extent, in Birmingham. All the 12 samples of oatmeal also were of good quality.

Of the condiments and spices 6 per cent. were adulterated. One sample of white pepper contained a little powdered olive stone, and a sample of black pepper contained a small quantity of poivrete. Four ground ginger were not of the proper quality; 3 of them contained over 75 per cent. of ginger which had been previously used and had lost its potency, while the fourth was adulterated with 5 per cent. of mineral matter. One sample of mustard was found to contain 20 per cent. of wheaten flour.

Twenty-four samples of tea and 57 of coffee were examined. All the teas were genuine, but 4 of the coffees contained chicory, the amounts being 10, 50, 70 and 80 per cent. respectively.

Of the samples of beer, wine, and spirits 28 per cent. proved to be adulterated, a much higher figure than had been recorded of late years. Eleven samples of ale contained more than 50 grains of salt per gallon—the maximum quantity approved by the Excise authorities. Seven out of 22 whiskies had been diluted to a greater extent than is allowed by law. One brandy also contained too much water, but the samples of sherry and port wine were of good quality.

The drugs were of rather better quality than in the two preceding years, though 20 per cent. of them were adulterated. Four tinctures of rhubarb were not compounded as specified by the British Pharmacopœia. Two precipitated sulphurs contained about 50 per cent. of sulphate of lime. One sample of tincture of iodine was deficient in both iodine and iodide of potassium. Water had been added to two syrups of rhubarb. Two sweet nitres contained far too much ethyl nitrite, an objectionable feature in a drug which is required to have a definite strength; three other samples had much too small a quantity of the same constituent. A sample of yellow beeswax and three of white wax were adulterated with paraffin; a fourth sample of white wax consisted entirely of Japan wax, which is a vegetable product. All the six samples of cream of tartar contained traces of lead. One tincture of senna did not contain the proper quantity of solid ingredients, and another was deficient of 18 per cent. of proof spirit. A sample sold as light magnesia had only 80 per cent. of that article in it, and one purchased as heavy magnesia consisted entirely of carbonate of magnesia.

A sample of sugar, sold as Demerara, proved to be white crystals dyed to resemble the real article.

Your committee cautioned the vendors of 27 adulterated samples, and in 68 other cases legal proceedings were instituted, convictions being obtained in 62 instances. A tradesman who had sold milk containing 12 per cent. of added water was let off because the word "added" was accidentally omitted from the certificate. The vendors of a ground ginger containing 75 per cent. of exhausted ginger, and a coffee in which there was 70 per cent. of chicory, were acquitted, on the ground that no intention to defraud the customer was proved. Moreover, the magistrates refused to state a case for a higher court in both these prosecutions. Another prosecution for selling adulterated milk collapsed through the production of a warrant, and one for selling margarine for butter was dismissed because the vendor had already been fined on the same day for a similar offence. One case was dismissed on the ground that, though an offence had been committed, it was too trivial to convict upon; this was in respect of a ground ginger containing 5 per cent. of extraneous mineral matter, or a total ash of 12 per cent.

In the cases in which convictions were obtained, the fines imposed amounted to £120 6s. od. and the costs to £29 4s. od.

PHARMACY ACT PROSECUTIONS.

THE PHARMACEUTICAL SOCIETY *v.* STORBY.

At the Bloomsbury County Court on Thursday, May 23, the Pharmaceutical Society sued John Story Armitage, carrying on business as a chemist at No. 1, Colva-street, South Highgate, for two penalties of £5 each, for having on two separate occasions sold a scheduled poison, he not being qualified to do so within the provisions of 31 and 32 Vic. c. 121. Mr. Grey appeared as counsel for the Society, and stated that the articles sold by the defendant in this case were Powell's Balsam of Aniseed and Dr. Collis Browne's Chlorodyne, which both contained morphine.—Mrs. Partridge proved the purchase by her, on February 20, of a bottle of Powell's Balsam of Aniseed from the defendant's wife, Mrs. Armitage, and on the 23rd she was served by the defendant with a bottle of Collis Browne's Chlorodyne.—Mr. Partridge, husband of the previous witness, deposed to having gone to the defendant's shop in January last, when he tried to purchase a bottle of chlorodyne, but the defendant declined to serve him, although he (witness) saw some bottles in the shop. Mr. E. J. Eastes, analytical chemist, said he had analysed the two bottles in question. The bottle of Powell's balsam of aniseed contained a fluid ounce, which

on analysing he found to contain '27 of a grain of morphine. The bottle of chlorodyne contained one grain of morphine. Mr. Daldy, who appeared as counsel for the defence, called Mr. Armitage, who said he had a Wisconsin Medical Degree, besides which he was a Licentiate of the Royal College of Dental Surgeons, Dublin, an Associate of the Society of Apothecaries, London, and a Member of the United Society of Chemists. He was not qualified under the Pharmacy Act. He denied that he had for over two years sold, or kept for sale, Collis Browne's chlorodyne. Neither of the bottles produced by Mrs. Partridge came from his shop. Cross-examined: His shop was called a doctor's shop. He was away from it the greater part of the day, being a dispenser at a hospital. When Mr. Partridge came to his shop he had not a bottle of chlorodyne in the place, though he believed he had an empty bottle, the contents of which he had used himself when ill. He had "dummy" chlorodyne bottles in his case. Mrs. Armitage was then called, and said she was a certified midwife. She denied having sold a bottle of Powell's balsam, as alleged by Mrs. Partridge.—Mr. Daldy said it was purely a question of whether the articles had been sold by the defendants as alleged or not, and it would be for his Honour to say which side he believed. His other point was that Section 15 did not impose a penalty for an isolated sale. The language of the section seemed to require something more than that. The words of the section were: "From and after the 31st day of December, 1868, any person who shall sell, or keep an open shop for the retailing, dispensing, or compounding poisons," which clearly pointed to a systematic procedure.—His Honour: Do you mean that he must sell both arsenic and prussic acid before he makes himself liable to a penalty?—Mr. Daldy, said if the words were "shall sell any article of poison" the matter would be beyond doubt; but when the words were "any person who shall sell poisons," that referred to a practice of selling poisons.—His Honour, in giving judgment, said there was no difficulty in it, though, no doubt, the point raised was a very ingenious one. It was clear to his mind that the articles in question did contain poison. He was also satisfied upon the evidence that the two sales were effected, though he had great doubt whether it was judicious on the part of the Pharmaceutical Society to employ people to go about and get up evidence: still they might say that, having got this Act, what they did was for the protection of the public. The defendant's explanation of the presence of a bottle of chlorodyne in his shop, which he admitted, was a very lame one. There would be judgment against the defendants for two penalties and costs.

THE PHARMACEUTICAL SOCIETY *v.* HILLS.

In this case, the defendant, Mrs. Lavinia Hills, carries on business at 91, Lower Marsh, Lambeth. The Pharmaceutical Society sued for one penalty in respect of a sale of Powell's balsam of aniseed on February 25 last. In answer to the usual letter from the Society's solicitor a letter was received stating that the business was conducted by a Mr. W. M. Thompson. Mrs. Hills wrote on March 15 saying that she was a widow, and promising to get a qualified assistant. Mr. Grey contended that unless Mrs. Hills was herself properly qualified she could not keep open shop for the sale of poisons. Mr. Ray, solicitor, who appeared for the defence, said Mr. Thompson was a qualified apothecary, and cited section 16 of the Act, under which he submitted that the executor of a deceased chemist was entitled to carry on the business under the management of a legally qualified chemist. After some discussion the further hearing was adjourned to June 20 for the defendant to produce evidence as to the qualification of the late Mr. Hills.

THE PHARMACEUTICAL SOCIETY *v.* HOGG.

In this case the defendant, J. A. Hogg, who carries on business at 45 Walworth-road, S.E., as a manufacturer, did not appear. Mr. Partridge proved the purchase on Dec. 15 from the defendant of a packet of rat and mouse poison called Hogg's "Rhodentium." Mr. E. J. Eastes deposed to having analysed the article in question, which he said contained 52 per cent. of arsenic. In the whole packet there was 250 grains of arsenic. Mr. Grey put in the Register of the Pharmaceutical Society to show that the defendant was unqualified. His Honour gave judgment for the penalty of £5, and costs.

WILTS COUNTY COUNCIL AND ADULTERATION.

SIR CHARLES HOBHOUSE called attention to the number of cases of adulteration mentioned in the report, and asked the chairman of the committee what steps had been taken to bring offenders before the magistrates and with what results.

Mr. Buckley said there were particulars in the return presented by the Chief Constable.

Mr. Story Maskelyne argued that the magistrates should more stringently deal with cases of adulteration that were proved against them. Many justices were influenced by the pleas of offenders that they were not to blame, but that the wholesale people were. They should remember, however, in many cases these retailers dealt with wholesale firms who sold them inferior articles which they sold cheaply, whereas they would have to pay more for goods from more respectable wholesale firms. They should deal with the matter as though the retailers were—as they really were—alone responsible.

The Rev. H. B. Bardwell said that before now the committee had been complained about for being too stringent. In many cases warnings had been given, and those warnings had been as effectual as if proceedings had been taken.

ADULTERATION PROSECUTIONS.

MILK.

At Cheltenham, Geo. Bandy, 1, Painswick-parade, was summoned for selling adulterated milk. P.C. McCarthy proved purchasing a pint of new milk at the defendant's shop on May 6th, paying 2d. for it. Defendant's wife served him. Witness offered to divide the milk and give defendant a portion, but this he declined to accept, adding that if there was anything wrong with the milk it was not his fault. Witness thereupon sealed the milk, and on the following morning handed it to Mr. Geo. Embrey, county analyst, whose certificate he now produced. [This certificate was now read by the Clerk (Mr. Wagborne). It stated that the sample contained 92 per cent. of genuine milk and 8 per cent. of added water.]

Mr. Steel submitted that this was a hard case. The authorities at Somerset-house had, as a result of experiments, found 7½ per cent. of water in milk fresh from the cow; and in this case the extent of the adulteration was only alleged to be 8 per cent. The defendant sold only one or two gallons of milk a day, and the gain from the adulteration—which he denied—would be infinitesimal.

The Chairman remarked that it was difficult in these cases sometimes to know if the water had been added or if the quality of the milk was due to the condition of the cow; but in this instance the analyst's certificate stated 8 per cent. of water had been added. The defendant would be fined 1s., with £1 4s. costs, and for his own protection he had better provide himself with testing apparatus.

Mr. O. J. Williams—The magistrates do not think the certificate very satisfactory. It does not show how much cream or other constituents the sample was composed of; it merely states that it contained 92 per cent. of genuine milk and 8 per cent. of added water, and the analyst is not here to give evidence.

Mr. T. E. Williams (to defendant)—Your great safeguard would be to provide test tubes in your business. You can't tell how much water there is in the milk without some such test. All sellers of milk would do well to provide these test tubes, because some cows adulterate their milk with water themselves. We have, however, in this case convicted on the certificate, which states that there was 8 per cent. of water added to the sample.

At St. Helens, on May 31, Henry James Feeney, cowkeeper and milk purveyor, Raglan-street, was summoned for selling milk as new which Dr. Robertson, public analyst, certified to have had 4·7 per cent. of cream abstracted. The Town Clerk prosecuted. Mr. Riley, who defended, sought to disprove Dr. Robertson's analytical conclusions, and stated that subsequently milk taken from the same cows in the presence of Inspector Steel was certified to be good average milk. Mr. Riley asked Dr. Robertson if, supposing the milk was placed in the vessel direct from the cows and the cream came to the top and then quantities were taken by dipping in a vessel, the last part of the milk would contain less cream than the average sample of the bulk? Dr. Robertson said it had been proved not to be so, or, if at all, it would be infinitesimal, and not more than ½. Fined 10s. and costs.

At Kensington, on May 28, James Williams, of Princes-road Notting-hill, was summoned at the instance of the Hammersmith Vestry for selling milk adulterated to the extent of 10 per cent. added water. The purchase was proved by Charles Doubtfire, a lad, residing in Greenside-road, and Mr. Oatley, an inspector under the Sale of Food and Drugs Act. Mr. W. P. Cockburn, clerk to the Hammersmith Vestry, who appeared for the prosecution, said the defendant had been previously convicted and fined 20s. He was also informed that the defendant was in the habit of moving from place to place. The Bench inflicted a fine of 40s. and costs.

At Gravesend, on May 27, Geo. Goldsmith, milk-seller, of Cutmore-street, was summoned for selling milk adulterated with added water, on the 25th April. Arthur Henry Lukes, inspector under the Food and Drugs Act, prosecuted. George Bailey, assistant to Mr. Lukes, gave evidence as to purchasing milk from defendant, a sample of which was submitted to the borough analyst, Dr. Gramshaw, whose certificate showed that there was 15 per cent. of added water. Defendant denied that he had adulterated the milk. It was in the same state when sold as when he purchased it. Defendant, who had previously been fined for a similar offence, was fined 10s. and 12s. costs.

At Liverpool, on May 29, William Goss, 7, Warwick-street, was fined 40s. and costs for selling new milk which contained upwards of nine parts of water to every 100 parts of the poorest milk from a shandry in Beaufort-street. David Davies, 115, Northumberland-street, was also summoned for similarly adulterating poor milk with eight parts of water, and was fined 40s. and costs. On the application of Mr. Masters, the Stipendiary consented to rehear the case against Goss on May 20, it being stated that the defendant would call the evidence of an analyst.

WILLIAM MATTHEWS, of Loscoe Farm, Wellington, was summoned at Birmingham on May 31 for supplying milk which was found to be 18 per cent. deficient in fat. The defendant pleaded that the milk was despatched by him as it came from the cows. The Magistrate's Clerk, Mr. Carter, said the magistrates were obliged by law to fine farmers in these cases for offences they had not committed. It was for the farmers to make arrangements with the railway companies to prevent the milk being tampered with in transit. They had their associations and their chambers of commerce, and if they did not choose to do something the magistrates could not help it.

It was stated that one sample was poor, but was passed as genuine. Another, taken from another churn, was the one on which the prosecution was based. Defendant was fined 10s. and costs.—Several small dealers in town were fined for selling milk from which cream had been abstracted or which contained added water.

BUTTER.

At Belfast, on May 28, Robert Watt was summoned by David M'Master, inspector of food, for that he on the 9th inst. did sell, to the prejudice of the purchaser, an article of food—to wit, butter—the same not being of the substance and quality demanded by the purchaser. The evidence of the inspector showed that he was on the Malone-road on the evening in question. He saw the defendant coming up the Malone-road and turning down Eglantine-avenue, and along the Lisburn-road until he came to Thomasville-terrace. He went up to the house No. 4, and was in the act of delivering butter. The inspector followed him, and asked him if that was butter he was delivering there, and he said it was. He then asked him if he had any more butter in his basket. He said "No," his basket was empty. The inspector then lifted the lid, and saw another small lump. He then informed defendant that he was an inspector, and was going to buy the lump to have it analysed. Defendant said he knew who he was, but said it would disappoint his customers. Witness purchased the lump at 10½d. per lb., divided it into three parts, gave him one, took one to Professor Hodges, and kept the other. The analyst's certificate was to the effect that the sample was margarine, and not pure butter. A fine of £5 and costs was imposed. The same defendant was also summoned for selling margarine as pure butter in the butter market on the 10th inst. A fine of £5 and costs was also inflicted in this case. Mr. Spiller prosecuted, and Mr. M'Gonigal appeared for the defendant.

At Derby, on May 31, Isaac Wragg, provision dealer, Allentown, was summoned by Capt. Sandys, the Inspector under the Food and Drugs Act, for selling butter which contained 19 per cent. of water, and only 73 per cent. of actual butter fat. Mr. Clifford, solicitor, supported the summons, and called witnesses to prove the sale of the butter and the inferior quality of it, Capt. Sandys saying that the minimum fat in butter ought to be 80 per cent., while the minimum of water should be 16 per cent. Mr. Stone appeared for the defendant, and contended that the butter did not contain an unusual quantity of water, making this assertion on the authority of Dr. Bell. Fined 5s. and costs.

MARIAN KEMP, grocer, of Higher-road, Urmston, was charged, under the Food and Drugs Act, with selling adulterated butter, at Manchester, on May 30. Inspector Keys said that he bought a pound of butter from the defendant on the 25th April, which was sent to be analysed, and the report of Dr. Campbell Brown was to the effect that more than 11 per cent. of the article was water and 60 per cent. fat other than butter. The defendant said she bought the butter as "best Kjel." The case was adjourned for a fortnight.

At Southwark, on May 30, Arthur George Lawrence, of 18, Long-lane, was summoned by the Southwark Vestry for selling as butter an article containing only 15 per cent. of butter, and 85 per cent. of margarine.—The defendant said it was a mistake, and his manager said it was the only mistake of the kind which had been made in the shop for five years.—The magistrate inflicted a fine of £3 and 12s. 6d. costs.

COFFEE.

At the Thames Police-court, before Mr. Mead, on May 28, Robt. Wright, grocer, of 38, Swaton-road, Poplar, E., was summoned for selling coffee adulterated with chicory to the extent of 70 per cent. Mr. Fred J. Anthony proved buying the coffee at 1s. a lb. He told the assistant it was purchased for the purpose of analysis. The analyst's certificate showed the adulteration to be as above. Defendant, in answer, said he was not in the shop at the time and knew nothing about it. It was impossible to sell pure coffee at 1s. a lb. On the outside of the tin was a paper showing it to be "mixture." Mr. Mead ordered him to pay a fine of 30s.—Wm. Thomas, grocer, of 62, Devons-road, Poplar, E., was summoned for selling "butter" containing not more than 5 per cent. of butter. Mr. Anthony said that on May 2 he sent a man into the shop to purchase "a half-pound of tenpenny butter." Witness, on going into the shop, said the butter was for analysis. He now produced the certificate showing it was margarine, containing not more than 5 per cent. of butter. The stuff was taken from a half-firkin tub which was not labelled "margarine." Defendant said the inspector's man was served by his sister who had just come up from the country and knew nothing about the business. As the purchaser was not in attendance Mr. Mead adjourned the case.

At Grimsby, on May 30, Jas. Allen, grocer, of Cleethorpes, was summoned under the Food and Drugs Act for having sold coffee adulterated with 60 per cent. of chicory.—He pleaded not guilty.—P. C. Hodson stated that he visited defendant's shop at Cleethorpes on May 8, and asked for three ounces of coffee, with which he was supplied, and for which he paid threepence. After witness had intimated that he wanted it for analysis, defendant said "Wait a bit," and went to a drawer from which he took a label with "coffee and chicory" on it.—Supt. Stennett produced the analyst's certificate, which showed that the mixture contained 40 parts of coffee, and 60 parts of chicory.—Defendant said he told the constable he had

no coffee. He added that he had not been long in the business.—The magistrates said they would take the latter fact into account, and would only inflict a fine of 15s. with the costs 5s. 6d.

DISEASED MEAT.

At Birmingham, on May 31, Henry Stephens and Peter Finchett, outchers, trading at 24, Hurst-street, and 104, Ashted Row, were summoned for having in their possession meat unfit for food.—Mr. A. Wiltshire, inspector, stated that last Thursday week he seized on the premises at Ashted Row eight pieces of mutton, two pieces of beef, three of veal, and about 6lb. of meat in small pieces. This was all condemned by Dr. Hill, medical officer of health, and destroyed by order of a magistrate.—Eight pieces of beef found in the Hurst-street shop were condemned.—For the defence it was stated that at the Hurst-street shop, where imported meat was sold, the manager had been summarily dismissed on the previous Saturday, and the new manager had neglected to report to his employers, as he should have done, the fact that the meat had gone bad. In the other case it was stated that the meat was of first-class quality, having been bought from a leading butcher in the market on the Tuesday, but that it had gone bad in consequence of the hot weather. It was also stated that Stephens had been in business as a butcher for 28 years, and that the other defendant had only been in the firm two months.—The Bench fined defendants £5 and costs in one case, and £7 and costs in the other.

At Glasgow, on May 31, John Kirkland, farmer, Grange-place, Alloa, pleaded guilty of having on Thursday sent by passenger train to Queen-street Station the carcase of a sow for consumption as human food which was unfit for that purpose. It was stated on his behalf by Mr. J. M. Campbell, writer, that though he had committed a technical breach of the Act he had no intention of the flesh being sold unless it was passed as sound. This was the first carcase he had sent to Glasgow. Police Judge Morrin ordered the carcase to be destroyed, and imposed a fine of £5 with the option of 30 days' imprisonment.

GINGER.

At Manchester, on May 30, Sarah Wilshaw, of Moss-road, Urmston, and Arthur Barton, of Higher-road, Urmston, were charged with selling adulterated ginger. In one case the ginger sold as "genuine" consisted entirely of "spent" ginger, and in the other case 50 per cent. of the ginger was "spent." Both defendants stated that they had got the ginger from wholesale dealers in tins marked "genuine ginger." The cases were adjourned for a month.—Mr. Yates said he would like to get at the people who sold the ginger in the first instance. Some steps ought to be taken to punish the manufacturers who palmed off such stuff on retail dealers.

At Lancaster on May 30, Richard Towers, grocer, was summoned for selling, on April 2 last, a sample of ground ginger which was alleged to have been adulterated with spent ginger. The case was before the Court three weeks ago, and the borough analyst, Mr. Estcourt, of Manchester, by certificate, stated that the sample was adulterated to the extent of 25 per cent. with spent ginger. The grinders of the ginger, Messrs. Wright, Crossley and Co., of Liverpool, took up the case, and submitted the portion of the sample retained by Mr. Towers to Dr. Campbell Brown and Dr. Collingwood Williams, of Liverpool, who certified that it was pure high-class ginger. A sample was also submitted to the same analysts from the tin in Mr. Tower's shop, and the certificate was to the same effect. Dr. Brown added: "No one who knows anything about ginger can contend that the samples are other than high-class ginger." Upon that the magistrates ordered the remaining third portion of the sample to be submitted to Somerset House, and the certificate of the Government analysts, Messrs. R. Bannister and J. Holmes was produced on Thursday. They declared that in their opinion the sample consisted of genuine ground ginger.—Mr. Tilly, for the defence, thought they were entitled to some explanation from Mr. Estcourt as to the mistake or blunder he had made.—The Chief Constable stated that he had intimated to Mr. Estcourt that he need not come to support the prosecution's case, as after the analysis from Somerset House he felt sure the magistrates would dismiss the case.—The magistrates' clerk said he was surprised, after Dr. Brown's letter, that Mr. Estcourt was not present to defend himself.—Mr. Tilly stated that Messrs. Wright, Crossley and Co. had taken up the case because they gave a guarantee to all their customers that the ginger supplied by them was absolutely free from spent or exhausted ginger.—The case was dismissed.

At Durham, on May 29, Esther Carr, grocer, of Quarrington Hill, was summoned under the Food and Drugs Act for selling adulterated ginger on May 2. Mr. Scott Elder, the chief inspector of weights and measures, who appeared to prosecute, said that defendant was one of the largest grocers in Quarrington Hill. One of his inspectors purchased a sample of ground ginger at the shop of the defendant, and when analysed it was found to contain nothing but exhausted ginger. This spent ginger was what had been used in aerated water manufacturing. They had often had ginger adulterated to the extent of 10 or 12 per cent., but never previously 100 per cent. In this case the stuff was not ground ginger at all.—George Wilson, the inspector, spoke of purchasing the sample of ginger, which had been divided into three portions,

one being left with the defendant, and the others were taken away for the purpose of analysis. Witness purchased three ounces and paid 3d. for it.—Mr. Scott Elder also gave evidence as to sending one of the portions of the sample to the county analyst (Mr. Stock) for analysis. The report upon the analysis stated that the sample was composed entirely of spent or exhausted ginger.—Defendant was also summoned for exposing margarine for sale without the necessary label contrary to the provisions of the Margarine Act, on May 2.—George Wilson said that while he was in the defendant's shop he noticed a box containing what appeared to be butter. On examination he found the box contained margarine, and that upon it was not exposed the statutory label. When witness asked what was in the box, she replied "butter mixture," which she afterwards explained was margarine. He found a small label underneath some paper, but it was not large enough, nor was it exposed.—Mr. Scott Elder said that according to the Act there must be a label placed upon margarine in such a way that it was easily seen by an intending purchaser.—The Chairman said the public must be protected; it was a very important matter that the foods sold in shops should be pure.—Fined 5s. and costs for each offence.

OATMEAL.

At Aberdeen, Mr. William M'Connachie, grocer, Fountainhall-road, was recently charged before Sheriff Brown in the Aberdeen Court with having sold 7lbs. of oatmeal which was not "of the nature, substance and quality of the article demanded," in respect that it contained foreign granules to the extent of not less than 3 per cent., contrary to the Sale of Food and Drugs Act, 1875, as amended by the Act of 1879. Mr. John Craigen, solicitor, who appeared on that occasion for Mr. M'Connachie, stated that he was a respectable grocer, who purchased the oatmeal from an old-established firm of millers, and sold it exactly as he got it. Sheriff Brown on the evidence found that a breach of the Act had been committed. The oatmeal contained a certain percentage of barley meal, and the Sheriff imposed a fine of £3. Mr. M'Connachie thereupon entered proceedings in the Sheriff Court against the firm of millers for payment of the fine and expenses. The case, we understand, has now been withdrawn from Court on payment to Mr. M'Connachie of £4, the amount of the fine and modified expenses.

BEER.

At Worship-street, on May 30, John MacKell, beerhouse-keeper, Winchester-street, Bethnal-green, pleaded guilty to adulterating his beer to the extent of 1½ gallons per barrel. Bad trade and hard times were pleaded in extenuation. It being a first offence, Mr. Fenwick imposed a penalty of £20, with £4 11s. costs.—William Stanley, Kerbella-street, Bethnal-green, pleaded guilty to diluting beer sold to the public.—Mr. Dennis, for the Excise authorities, said the dilution in this instance had been somewhat extensive, amounting to 4½ gallons per barrel.—Mr. Margetts, for the defence, pleaded poverty on behalf of his client.—He was fined £20 and costs.—Jno. Slater, New Tyssen-street, pleaded guilty to adulterating his beer, and was fined £30 and costs.

SPIRITS.

At Birmingham, on May 31, William Tomlins, of the Burbury Arms, Burbury-street, was summoned for selling adulterated whisky on April 30. Mr. Hiley, from the town clerk's office, prosecuted, and Mr. Ashford defended. A woman bought a pint of whisky, which on analysis was found to be 37 degrees under proof, having 16 per cent. of added water. The defence was that the whisky was bought as being 24 degrees under proof, the legal minimum being 25 degrees under proof. The bond permit was produced, and it was contended that this constituted an invoice guaranteeing and identifying the whisky in question. Mr. Hiley contested this view, and the magistrates decided against the defendant, being of opinion that it was not proved that the permit referred to the whisky that was the subject of the summons. A fine of £5 and costs was imposed.—George Price, of the Bell Inn, Great King-street, was summoned for a similar offence on the same date. Mr. Bickley defended. In this case the whisky was certified by Dr. Hill to be 28½ per cent. under proof—that is, to contain 4½ per cent. of added water. A fine of 20s. and costs was imposed.

At Sevenoaks, Alfred Pattenden, landlord of the Lamb Inn, Sundridge, pleaded guilty to selling adulterated whisky on the 7th of May. P.C. Farrier said that on the day in question he went to the Lamb Inn, Sundridge, in company with Supt. Holman. He purchased half a pint of whisky, and he divided it into three parts, and gave one part to Supt. Holman. He told the defendant he had purchased it for the purpose of having it analysed. Supt. Holman said, on the 8th of May he submitted one-third of the whisky to the County analyst, and he had since received a certificate from him to say it was four degrees below the legal standard. Defendant, who said the whisky had evaporated, was fined £2 and 10s. costs.

At the Brentford Petty Sessions, on May 31, John Albert Freeman, landlord of the John Bull Hotel, High-road, Chiswick, was summoned by Inspector Tyler for having sold gin diluted to the extent of 38 5 per cent., contrary to the Act, which only allowed 35 per cent.—The Inspector stated that after the gin had been pur-

chased he went into the bar, when he found that the customary notice was not posted up. He called attention to the fact and was informed that it had slipped from its usual place.—Ada Griffiths, a barmaid, testified to the latter fact. The notice was usually suspended in full view of the customers but had slipped down while she was dusting.—Inspector Tyler said it was the first time he had found anything irregular. The house was exceedingly well conducted as to measures, etc.—The Chairman said that as there had evidently been no carelessness, the defendant would be only required to pay the costs, and there would be no conviction.

At St. Augustine's Petty Sessions, on May 25, Henry Bently, landlord of the Westbere Butts, Sturry, was summoned for selling adulterated whisky.—Defendant's nephew appeared in answer to the summons, and stated that his uncle was seriously ill and could not attend. He also said the whisky had stood on a shelf for a considerable time.—P.O. Kennett proved purchasing the whisky and handing it to Superintendent Wood.—Superintendent Wood, inspector under the Food and Drugs Act, presented a report from Dr. Adams, the county analyst, which showed the whisky to be 10 per cent. below the legal limit.—The Bench imposed a mitigated fine of 10s. and 11s. costs, in consequence of defendant's previous good character.

APPEALS.

BUCKLER V. WILSON.

In the Queen's Bench Division of the High Court of Justice, on May 28, before Mr. Justice Charles and Mr. Justice Wright, the case of Buckler v. Wilson came on for hearing by way of appeal from the decision of the Justices of Louth, Lincolnshire. Mr. Bonsor was for the appellant, and Mr. Stanger was for the respondent. Mr. Bonsor said that this was an appeal against a conviction under the Margarine Act of 1887, Section 6, for delivering a quantity of butter in packages which were not marked as required by the statute. The appellant, a provision merchant and grocer in Louth, entered into a contract with the guardians of the Louth Union to supply them with butter, and on December 10 last he delivered thirty-nine pounds of butter in pursuance of the contract.

On December 10 the Guardians examined the butter, took one pound and divided it into three parts. One part was sent to the appellant, one was retained, and the third was sent to the public analyst. It was found that the butter contained 25 per cent. of margarine, and, being margarine, it was contended that it ought to have been delivered in packages marked margarine in compliance with the section of the Act of Parliament. The first point raised in the court below was that the county justices had no jurisdiction, because, under the Sale of Food and Drugs Act, 1875, it was only when a borough had not a separate court of quarter sessions that the case could be tried by the county justices sitting in the borough. The second point was whether the Margarine Act of 1887 required the same steps to be taken as under the Sale of Food and Drugs Act. Section 10 of the amending Food and Drugs Act of 1879 provided that in all prosecutions under the principal Act the summons must be served on the person charged within a reasonable time, and, in the case of a perishable article, within 28 days from the time of the purchase, the summons not to be made returnable in less than 10 days. In this case, the summons was not taken out within 28 days, and it was made returnable in five days. The contention was that, margarine being a perishable article, the summons was irregular within the meaning of the Act. There was some evidence in the case to show that it was perishable, though the magistrates held that it was not a perishable article.

On the point of the irregularity of the summons there was a decision of the Court in a milk case coming from Birmingham, in which it was held by the Court that such irregularity was fatal. Mr. Justice Charles pointed out that this was not a prosecution under the Food and Drugs Act but under the Margarine Act. Mr. Bonsor contended that the latter Act incorporated the section of the Food and Drugs Act. Another point was that the clerk of the Union who was the prosecutor, was also clerk to the justices, and had retired with them in consultation. A further question was whether section 14 of the Food and Drugs Act, 1875, applied to a case where a person had supplied articles for consumption and not merely for analysis. The respondents had contended that the section did not apply where the article was purchased in the ordinary way for consumption, as this was, and not for the express purpose of analysis. If the section did apply, then its provisions had not been complied with, because when a person purchased with the intention of submitting the article to analysis he must at once inform the seller of his intention and offer to divide the article, and give the seller a third part at once, send another part to the analyst, and retain the other third. That had not been done in this case. Mr. Stanger, for the respondent, having argued the various points raised, the Court decided that these were of an importance which justified their being heard by a Court composed of more than two members. The case was accordingly adjourned till next sitting, their lordships intimating that a day would be fixed for it after consultation with the Lord Chief Justice.

THE ADULTERATION ACTS IN KILMARNOCK.

At Kilmarnock, on May 31, several cases were disposed of at the instance of Mr. Thomas Currie, sanitary inspector of Ayrshire,

who is also inspector under the Food and Drugs Act, Mr. W. S. N. Patrick acting as prosecuting agent. Andrew Gilchrist, publican, New-street, Dalry, was charged with selling four gills of whisky which contained an admixture of water, whereby it was reduced 27 degrees under proof, the statutory maximum limit being 25 degrees. He pleaded guilty, stating in extenuation that the whisky was known as "sixpenny," that it was less than 25 degrees under proof when put into the cask some months ago, and that the spirit must have evaporated. The prosecutor remarked that it was almost grog when 25 degrees under proof. The Sheriff imposed a penalty of 10s., or seven days' imprisonment. Several grocers were convicted of breach of the regulations affecting the sale of margarine, and were fined in penalties of 10s. and £1. Inadvertence was in every case pleaded. In one instance it was stated to be a common practice for people to ask for butter when they wanted margarine. The Sheriff observed that if that was so that was a very objectionable practice.

THE ADULTERATION OF COFFEE.

It is stated that the addition of roasted and ground figs to coffee is not a novelty. Those who are fond of a fine, aromatic cup of coffee add as much as a knife's point of the above to it whilst boiling. This prescription once formed the secret of the much-renowned Karlsbad Coffee, but by and by it leaked out, and now is much used by all "gourmands" on the Continent.

A DISEASED MEAT MARKET.

It has long been known, says the *Daily Chronicle*, that a good deal of indifferent meat is on sale at the meat market held in Charterhouse-street, Cowcross-street, and St. John's-street, which is outside the City of London Meat Market, and is not subject to the supervision of the inspectors of the City Commissioners of Sewers, but few Londoners are aware that meat absolutely unfit for food is sold here in enormous quantities. Yet this is the case; and our authority is no less a person than Dr. Sedgwick Saunders, medical officer of health and food analyst to the Commissioners of Sewers. In a letter to that body, dated March, 1895, he says:—"The sale of meat which would be at once condemned as unfit for food by any experienced and competent meat inspector, goes on openly and unblushingly in the shops above referred to." More-over it largely militates against the efficiency of the supervision exercised in the City Market, for, says the same authority, "I have no doubt that meat which has escaped the vigilance of my inspectors has been taken to and sold on the other side of the way"—meat, be it remembered which would, if retained in the market, be, in all probability, seized later on. The testimony of Dr. Hoyle, acting medical officer of health for Holborn, is to the same effect:—"The outside meat market is," he says, "the chosen resting place of stuff which is sometimes charitably called shabby, but which is, not to put too fine a point on it, absolutely stricken with disease." Why is this state of things allowed to continue? The explanation is a simple one. The outside market is under the control, not of the City authorities, but of the Holborn Board of Works. But a market on such a scale, and, as Dr. Saunders says, "enormous quantities" of meat pass through it, requires for its efficient supervision a large staff of highly-trained inspectors, and this the Board is, from the magnitude of the task, unable to supply. The market trade is consequently, as Dr. Hoyle points out, frequently unwatched for two, three, or four hours at a time. This crying evil has received considerable attention from various authorities, and a proposal has been made to the Holborn Board by Dr. Saunders. It is that the Commissioners of Sewers should appoint an extra inspector, and that the supervision of the whole staff should be extended to the outside market, the Holborn Board making a contribution, estimated by Dr. Hoyle at from £250 to £280 a year, to the cost of maintenance. The outsider would assume that such an offer would be jumped at. But unfortunately the Holborn Board of Works is not a Progressive body, and it has regarded the efforts of the small section of reformers, to whom the initiation of the scheme is due, with suspicion. As a result a decision has been postponed again and again, and last Monday it was determined to hold the matter over till the appointment of a medical officer of health. This the supporters of the plan on the Board regard as a preliminary to shelving the whole thing indefinitely. It is to be hoped, however, that public opinion will refuse to sanction the burking of a reform so vital to the health of the people. "The market is," says Dr. Hoyle, "in its functions really a metropolitan market, serving not purely local purposes," while Dr. Saunders pleads for the scheme "on the ground of public policy, and with a view of protecting the poorer working classes, who, tempted by the price, are the chief purchasers of bad meat." The ostensible ground of objection to the plan on the part of the majority is that it would mean a surrender of the Board's authority. As a matter of fact no such surrender would take place, for the Board would have joint rights with the Commissioners of Sewers in the appointment of inspectors, their own medical officers would condemn the meat, and, were a prosecution necessary, the Board would undertake it. Even were a complete cession of power necessary to an efficient system of inspection, it should be made. The dignity of the Holborn Board of Works should not be allowed to stand in the way of a reform of such large public interest.

ADULTERATION IN PORTSMOUTH.

Dr. B. H. MUMBY reports:—

"During the year 1894 I analysed 238 samples of food and drugs, of which 227 were taken by your Inspectors under my direction, and eleven samples submitted by private individuals.

"Of the total number of samples 27, or 11·34 per cent., were found adulterated. The percentage of adulterated articles taken by the Inspectors was 8·37, and the percentage of adulterated articles submitted by private individuals was 72·73.

"The following is a list of the samples analysed:—Milk, 126; butter, 28; coffee, 6; bread, 1; pepper, 12; whisky, 8; rum, 4; gin, 8; beer, 29; mineral waters, 6; drugs, 10.

"The samples of milk analysed numbered 126; of these 17 per cent. were found sophisticated. The standard I am obliged to adopt is that in use by the chemists at Somerset House, which is a very low one, so low that in my opinion it is unfair to the honest milk-seller who does not either take from nor add to the milk he sells. For four years the Guardians of the Poor have stipulated in their contracts for milk of a much higher standard than that I can adopt, yet only once has this high standard not been reached. The peculiar result is that the paupers in the workhouse get much better milk than the ratepayers who support them. The standard adopted by the Board of Guardians is: Fat 3 per cent., and solids, not fat, 8·5 per cent. In 28 samples taken in course of delivery at the Union many have been much above this standard, and only one below it, in which 20 per cent. of water was added. If this standard can be maintained by the contractor to the Union it ought to be possible for other milk-sellers, who have the mixed milk of a number of cows, to provide milk of an equally good quality for their customers. Unfortunately there are many whose milk falls much below this standard, and yet I am obliged to let the samples pass, but working within a low standard 17 per cent. of the samples are found either skimmed or watered. This is the reason that milk forms such a large proportion of the samples taken."

THE IMPORTATION OF ADULTERATED BUTTER.

SIR R. PAGET asked the President of the Board of Agriculture, in the House of Commons, yesterday week, whether his attention had been called to the case of "Hawkins v. Williams," reported on the 21st ult.; whether the charge failed in consequence of the retail vendor claiming the protection of section 25 of the Food and Drugs Act, 1875, and proving that the adulterated butter sold by him had been purchased with a written warranty of quality, the invoice sent by the importer bearing the words "guaranteed pure," and whether he would, with a view of protecting the public, insure that examination should be made at the Custom-house of all butter imported, in the same manner that examination was now carried on at the Custom-house in the case of tea.

Mr. Gardner: I have read the report of the case to which the hon. baronet refers. With reference to the suggestion made in the concluding paragraph of the question I may say that arrangements have recently been made by which samples of butter will be taken at the ports of importation and analysed by the principal chemist of the Government laboratories, who is also the chief agricultural analyst. A certain number of samples have, in fact, already been taken, and I am in communication with the Treasury and the Board of Customs with a view to the settlement of the course to be pursued in the event of its being found that any offences under the Sale of Food and Drugs Act, the Margarine Act, and the Merchandise Marks Act have been, or are likely to be, committed.

Sir R. Paget asked whether the right hon. gentleman would inform the House as soon as he had received the information for which he had asked.

Mr. Gardner: I will, of course, lay before the House any information which I think it my duty to give.

BRANDY IMPOSTURES.

WRITING on the trade of the consular district of La Rochelle, the British Consul endeavours to direct attention to the operations in the brandy trade, by which the British consumer is most generally supplied with German potato spirit and similar stuff under the name of cognac. For the perpetration of this fraud a certain class of English dealers are chiefly to blame. They require from the French producers an article under the name of cognac at a price so low that it is utterly impossible for the merchants to supply them with anything but potato or beetroot spirit for the money. They know that it takes eight gallons of wine to make one of brandy, and the first cost of this gallon is about 7s. It is not fit to use until it has been kept for some years, and by that time its value is about double the original estimate. Yet, knowing this, those dealers ask the French merchants to supply them at from 2s. 6d. to 4s. per gallon, and the offer of such a price is tantamount to giving them their choice between making up a spurious article or losing their custom, and many respectable French merchants are obliged to comply with these terms. The dealers argue that there is no deception on their part, as the buyer at home knows very well that what they give him at this price cannot be genuine cognac. The Consul adds that "there is plenty of pure cognac to be got in the district old enough for consumption at from 15s. per gallon and upwards, according to age and quality, by applying to

the best merchants, who would be only too glad to supply it, as they deplore the injury done to the reputation of the old brandies of the district by the sale of the unwholesome mixtures which have displaced them of late years."

SWINDLING THE PAUPERS AT BAILLIEBORO'.

AT Baillieboro', Sergeant Keane, R.I.C., Inspector of Food and Drugs, summoned R. Flack for supplying buttermilk, as a contractor to Baillieborough Workhouse, which proved under analysis to be adulterated with 14 per cent. of added water in addition to 25 per cent. allowed for churning purposes.

Sir Charles Cameron's certificate stated—"I am of opinion that said sample of buttermilk, which was in a proper condition for analysis, was adulterated with 14 per cent. of added water in addition to 25 per cent. allowed for churning."

Sergeant Keane—I produce certified copies of five previous convictions. On December 31 he was fined 5s. and costs; on January 7, 10s. and costs; on March 23, 10s. and costs; on April 2, 20s. and costs; and on May 7, 20s. and costs.

Mr. Irwin—That will take away a lot of the profit.

Defendant—There must be some mystery about the analysing of the milk.

Mr. Gibson—You may remember we told you on last court day to send your sample to Professor Tichbourne or some other analyst.

Defendant—The bottle was burst when it was brought home. I am positive the milk cannot be analysed after ten days' churned.

Mr. Gibson—You should have sent your bottle to another analyst.

Defendant—I did not know where I would find one.

Mr. Gibson—You should have made inquiries. We are bound by the certificate of Sir Charles Cameron.

A fine of 20s. and costs was imposed.

We should think that Mr. Flack, with five previous convictions, has every inducement to continue the adulteration with such ridiculous penalties.

WAKING BRIGHOUSE UP.

AT the Halifax West Riding Court on June 1, Betsy Farrar, landlady of the Black Swan Inn, Brighouse, was mulcted in the sum of 27s. fine and costs for selling whisky excessively diluted with water. Inspector Crabtree proved the case.—Mary Ellen Wood, refreshment-house-keeper, Brighouse, pleaded guilty to the charge of keeping open after hours on Sunday, the 26th ult. A fine of 5s. and costs was imposed.—John Wesley Hillard, of the Lion Grocery Stores, Brighouse, was charged for exposing for sale margarine which was not properly labelled.—Inspector Crabtree said that he purchased a pound of what seemed to be butter, and paid 9d. for it. An analysis showed that it only contained a trifling quantity of real butter.—Mr. Waddington, of Cleckheaton, defended, and stated that at the moment of the inspector's entry a boy was engaged in washing the margarine tickets behind the counter.—The magistrates, whilst believing the defendant's explanation, held that a technical offence had been committed, and imposed a fine of 17s. 6d., including costs.—Robert Collins, grocer, Brighouse, was charged at the instance of Inspector Crabtree with having on the 26th of April sold a quantity of coffee which contained 60 per cent. of chicory. The magistrates regarded the case as a serious one, and imposed a fine of 20s. and 19s. costs.

CUPAR AND ADULTERATION.

AT a meeting of the County Council at Cupar-Fife on May 28, a discussion arose as to the appointment of an additional official to work the Food and Drugs Act. Mr. R. Cathcart pointed out that they had five inspectors already, and surely they were able to do all the work that was necessary. He moved that no appointment be made. Mr. Ritchie Welsh seconded, but at the same time he was very decidedly of opinion they should, if possible, have an inspector to take samples of whisky and beer. He was satisfied that in many instances intoxicating drinks that were supplied in the county were not what they ought to be. A few years ago, when the beer from a public-house was analysed, it was found that there was a large proportion of pepper amongst it. This had the effect of making the customers very dry. (Laughter.) Mr. Cathcart's motion was carried.

THE SANITARY INSPECTORS' ASSOCIATION AT WORTHING.

THE provincial meeting and conference of the Sanitary Inspectors' Association, held this year at Worthing, was brought to a close on Saturday. Sir B. W. Richardson, the president, was unable to be present, and in his absence from the conference at the Town Hall, the chair was taken by the Mayor of Worthing (Councillor W. H. B. Fletcher). An address that had been prepared by Sir Benjamin Richardson was read. In it he stated that the continued activity of the Sanitary Inspectors' Association and the increasing success of it was a source of great gratification to

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all who were seriously impressed with the course of true sanitation. The great points which it seemed to him were essential to their continued progress—first, unity of purpose and endeavour, so that they might, as a body of men scattered widely through the country, have a common object, insisting on their own proper recognition, remuneration, and consolidation. Their second great point was of an educational character. It would be advisable for them to have a school in which systematic instruction should be regularly carried out in the directions of their practical work. Short papers were afterwards read to the conference as follows: "The Dwellings of the Poor," read by the Deputy Mayor (Alderman R. Pipe) for Alderman Captain Cortis (Chairman of the Sanitary Committee of the borough); "Death Rates," by Dr. Charles Kelly (Medical Officer of Health for West Sussex, and Professor of Hygiene at King's College); "The Sanitary History of Worthing," by Mr. C. T. Gardener (sanitary inspector of the borough); and "The Sanitary Inspectors' Association: a Review and a Forecast," by Mr. West (Vice-Chairman of the Council of the Association, and sanitary inspector of Walthamstow). At the close of the conference the Mayor and Corporation were thanked for the cordial welcome extended to the Association, and then the members were photographed in a group outside the Town Hall. Afterwards, members and their wives were entertained at luncheon by the Mayor and Corporation at the Assembly Rooms, and the proceedings concluded with drives in the country and a steamboat trip to Brighton.

LONDON'S MILK SUPPLY.

WITHIN a ring-fence of one hundred miles of London some 10,850 milkers sit down every morning and evening and milk over 87,000 cows for the purpose of supplying London with its daily milk, says a writer in the *Newcastle Daily Chronicle*. The great bulk of this is then carried from the 3,480 farms on which it is produced to the nearest railway station, from whence it is conveyed to one or other of the great London termini, whence it is collected by the London milk firms and distributed amongst the 614,300 families, who occupy the 548,300 houses in the 2,000 miles of streets which constitute the "little village." This takes place twice every day, and there are thus some 614,300 deliveries or sales of milk twice each day in the year, or a total of 1,228,600 each day. The actual quantity sold is about 953,000 pints per day, or an average of 1½ pints for every family of seven persons, while the annual consumption is 43,500,000 imperial gallons, or an average of 10 11 gallons per head of the population, and of 71 gallons for every family of seven persons in the metropolis.

Such, very briefly, is the story of the milk supply of London, the figures being based on an enquiry which I have just made for some American milk producers, and for which the various railway companies have very kindly given me the figures and facts relating to the traffic in 1894 and the manner in which it is carried on. These figures show that in 1894 some 41,000,000 imperial gallons of milk were brought to London by the various lines, the Great Western heading the list with over 12,400,000 gallons, while the smallest quantities were brought by the smaller southern and south-eastern lines (such as the London, Chatham and Dover and the London, Brighton and South Coast, etc.), which—together with the small quantities delivered at a few of the 245 London railway stations which are not termini—can only be estimated at about 1,000,000 gallons a year, there being no actual figures for these. The total quantities brought into London in 1894 by railway, in round figures, are as follows:—

	Imp. gals.
Great Western	12,400,000
London and South-Western	7,200,000
Midland	5,800,000
Great Northern	5,188,000
Great Eastern	4,700,000
London and North-Western	4,500,000
Southern and South-Eastern lines, estimated	1,000,000
Total	40,788,000

We must allow, in the above, for the odd tens of thousands of gallons omitted from the returns given me by the railway companies and which would bring the total well up to 41,000,000 gallons. Besides this quantity brought by rail, there were, in 1894, in the county of London (*i.e.*, the district embraced in the area of the London County Council), 6,173 cows and heifers "in calf or in milk," and these may be put down as giving 500 gallons each per annum, or a total of 3,086,500 gallons, of which 2,500 may be assumed as being sold as milk. These additions give us a total of 43,500,000 imperial gallons as the annual supply of milk to London in 1894, or 3,625,000 gallons per month, and 119,070 gallons per day.

Having this total before us, we are enabled to form an adequate conception of the enormous business it represents. In round figures the population of London may be put down at 4,300,000 head, and for these the supply comes to just over 10 11 gallons per

head per annum, and just over 0·22 pints per day. But in dealing with the subject of the milk supply, it is more usual to deal with families, and if we take seven as the average number of these, we shall find that the population of London represents 614,300 "families," and in this case the supply represents 71 gallons per family per annum, or a fraction over 1½ pints per day. As each family would have its milk delivered twice a day, this would mean that there are two deliveries of three-fourths of a pint each, on the average, to each of these 614,300 families, or a total of 1,228,600 deliveries or sales per day, or 548,439,000 sales per annum.

If, again, we take houses in London, we find that at the last census there were 548,318 inhabited houses in the county of London, and for these the total supply in 1894 would give an average of about 1½ pints per house per day. At the same time there were just under 2,000 miles of streets in the same area, and this again enables us to give some idea of the magnitude of the task of distribution.

The whole of this milk is, practically brought to London twice a day, although on Sundays and some holidays the system is not quite so completely worked. Without noticing these exceptions, however, we may fairly describe the usual routine as follows:—The milk delivered to London householders in the morning is that from the evening's milking, while that sold in the afternoon has been obtained from the cow in the morning. To supply the total quantity required, the total milk yielded by 87,000 cows is required, and these must be of a stamp good enough to yield 500 gallons of milk each per annum. These have to be milked twice a day, and as one milker could not be expected to conveniently milk more than eight cows at each milking, no less than 10,850 milkers must be employed in this operation twice every day. We may also take it that about 25 cows would be the average number used for this purpose on each farm sending milk to London, and this would give 3,480 farms as the number of those from which milk is received every day for the supply of London.

Each morning and evening, immediately after the milk is drawn from the cow, it is strained and cooled, and put into 18-gallon "churns" (or cans, such as are commonly seen on the railways everywhere, and of which about 26,000 are in constant use for the supply of London alone), and at once conveyed to the nearest railway station for transit to the metropolis. It then goes out of the hands of the farmer, or actual producer, and a careful enquiry shows that, after deducting the amount which he pays for carriage, and to which I shall allude later on, the price he receives for his milk, taking all the year round, as it is delivered at the railway station, is not more than 6d. per imperial gallon net. For the 43,500,000 gallons of milk consumed in London the actual producer thus receives the sum of £1,087,500, and for this sum he has not only to produce a milk of a higher quality than the margin allowed by law, but has to deliver it to the railway, this, in many instances, involving carriage several miles twice a day.

The railway companies convey the milk to London in special milk vans either by ordinary passenger trains or by special milk trains. The main feature of the milk vans are that they have passenger buffers to avoid bumping and shaking, while the sides are ventilated by lattice-work which slopes inwards and upwards, the object of which is to keep out the descending dust and dirt. In all other respects they are ordinary guards' vans. The quantity of milk carried by special milk trains cannot be ascertained except in the case of the Great Western Company, in which case 85 per cent. is carried by ordinary passenger trains, and only 15 per cent. by specials. On the South-Western, the proportion carried by special trains, which run twice a day from Yeovil, would probably be larger. For the carriage of the milk the companies charge varying prices, from one halfpenny per gallon for short distances to three-halfpence a gallon for distances of over 100 miles, but one penny per gallon may be safely taken as the average price paid per gallon for carriage of the milk brought to London. Thus for 1s. 6d. a churn of 18 gallons of milk, weighing, with the churn, very nearly 2 cwt., is conveyed a distance of some 60 to 80 miles, and the empty churn returned free. At 1d. per gallon we find that the railway companies in 1894 received about £170,830 for carrying 41,000,000 gallons of milk to London.

On arriving at the various London termini the milk is taken away by the various dealers to whom it is consigned, and is by them distributed over the Metropolis. Space will not permit me to deal with the details of a London milk business, or to do more than deal with the leading features of the milk supply, and I therefore go on to the price paid for the milk, which we have traced from the farm to the consumer. We may take it that no pure milk is sold in London at less than 4d. per quart, or 1s. 4d. per gallon, and at this price the amount realised for the 43,500,000 gallons would be £2,850,000, or a difference of £1,591,670 over the £1,087,500 paid to the producer and the £170,830 paid for carriage. This sum represents the cost of distribution, allowance for waste, and the profits of the dealer and retailer. There can be no doubt but that the cost of distribution is very heavy, or that waste must be a very costly item, but for all that it seems very extraordinary that the consumer should pay £1,591,670 as the cost of distribution and profit on an article which is delivered in London for £1,258,330. And this difference is based on the assumption that all the milk is sold pure and as it is received, whereas we know that cream is largely abstracted, and the separated milk largely added to whole milk, and this adds considerably to the price paid by Londoners.

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—Times.

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Food and Sanitation.

SATURDAY, JUNE 15TH, 1895.

POISONOUS BAKING POWDERS.

BAKING POWDER, by a decision of the High Court, is not an article of food, and that being so, it can be made of substances injurious to health. In commenting on the decision of Mr. Justice Hawkins and Mr. Justice Lawrence establishing this preposterous ruling, we pointed out that such a verdict would inevitably lead not only to the use of alum, but of other cheap and dangerous substitutes for tartaric acid. We have, unhappily, lately had full justification for our strictures on the debauchery of the public food supply, the past few weeks having brought to light several cases of poisoning by baking powder, one of which at least has had a fatal ending at Swansea. Charles Hill, living at 11, Waunwen-terrace, Carmarthen-road, and his family were attacked on Sunday with sickness, followed by

vomiting, resulting in the death of Mr. Hill. The medical attendant called in stated that death was due to deceased eating some cake prepared with baking powder.

Now, as baking powder, according to two eminent judges, is not an article of food, it is a most flagrant contempt of High Court law that Charles Hill should have died from that article, and that the cause of his death should actually have been that he used the article as a food when Mr. Justice Hawkins and Mr. Justice Lawrence roundly declared it was nothing of the sort. The medical attendant too, who, in the face of the decision of two judges, dared to consider baking powder an article of food and to attribute poor Hill's death to its use, is guilty of a very grave implied insult upon the intelligence of two of our foremost legal luminaries, and of the common sense of the law.

But facts are stubborn things, and despite law and judges they have thus proved baking powder an article of food by visiting with grave illnesses several users of the cheap trash called into existence by the High Court decision, and have caused the death of, at least, one person. If our judges are not obdurate to facts they should see from these cases reason to alter their views as to what are and what are not articles of food. It is at least certain that were it not for the unhappy decision named the sale of alumed baking powders would be entirely suppressed, and it is not in any way satisfactory that High Court decisions should lead not only to the establishing of a legalised dangerous fraud upon the public but to poisonings and death. The function of the law is to protect the public welfare, health and morals, not to give *carte blanche* to poisoning or poisoners.

SIR WILLIAM HARCOURT, THE BREWERS, AND THE BEER SWINDLE.

A FEW weeks ago we wrote of Sir William Harcourt's statement anent pure beer, with the result that a St. Austell brewer in the *Western Morning News*, of June 4, says:—

‘Under the heading of ‘Notes and News’ in your to-day's issue a correspondent quotes from FOOD AND SANITATION the assertion that ‘not a twentieth of the beer sold is brewed from malt and hops,’ and ends up by his own comment that ‘probably it is not over-drawn.’ It is only exaggerated sixteen times, that's all!

“The Chancellor of the Exchequer, in his reply to Mr. Quilter's ‘Pure Beer’ amendment on the Budget, on May 10th, is reported as follows:—‘I have a practical objection to the amendment; it is that it will not allow the tax to yield any money at all, because four-fifths (*i.e.*, sixteen-twentieths) of the beer is brewed from malt and hops. (An Hon. Member: Four-fifths!) Yes, those are the figures given me by the Inland Revenue.’

“Moreover, I have never seen it proved yet that the substitutes for barley comprising the other fifth, *viz.*, maize, rice, wheat, and sugar, have been proved to be less pure than barley itself. It appears any stick will do to wallop the wicked brewer with, and any sort of damaging insinuations are eagerly seized by some writers and published with embellishments, chiefly on the score of using chemicals and other ingredients. If the public are being so badly treated by the brewers, what are the police and county analysts doing?

“I find, however, that Mr. R. Bannister, of the Government Laboratory, Somerset House, gave evidence a short time ago before a committee of the House of Commons that out of 17,604 samples examined since 1884, not one of them contained noxious ingredients or compounds of any kind. What industry can show a cleaner record than this?

“A BREWER.”

“St. Austel, June 3rd, 1895.”

We are sorry we cannot oblige this brewer by admitting that Sir William Harcourt spoke the truth upon the question, or that the testimony of the eminent Mr. Bannister, of the Government Laboratory, has any weight in support of Sir William Harcourt's mis-statement, for it is owing to Mr. Bannister and his colleagues that Mr. Gladstone was guilty of the monstrous injury to English barley-growing and the degradation of beer to chemical swipes. We do not expect that Mr. Bannister will confess that he is in part responsible for the enormous swindle the brewers practice, but we are not willing to suffer either his mis-statements or the Chancellor of the Exchequer's casuistries to pass unrefuted.

It is not the truth that *four-fifths* of the beer brewed is composed *solely* of malt and hops, and it is a fact that not one-twentieth of the beer on sale to the public, which is purchased by consumers under the belief they are buying pure malt and hop beer, is

brewed from malt and hops without the addition of maize, rice, sugar, etc. It is, further, the fact that not even the Burton brewers any longer brew genuine beer. As to the bosh of Mr. Bannister, that of 17,604 samples examined since 1884 not one contained any noxious ingredient, we can only say “How could they?” seeing that, according to the testimony of a public analyst who understands what analysis really is, and can do it, which Somerset House cannot, beer enjoys the privilege of being a legalised swindle.

This is what the analyst in question says:—

“Owing to the excise authorities, the present state of regulations concerning beer is truly deplorable. For fiscal purposes one substance after another has been allowed to be put into beer. There is no need to add malt, nor to use hops; there is no regulation as to the minimum strength; you can add as much salt as you like, and injurious preservatives in any amount, to counteract the effects of bad brewing. In fact, beer at present, thanks to Somerset House, may be any alcoholic decoction which the ingenuity and dishonesty of a brewer may suggest, and if a public analyst takes proceedings against a particularly bad sample, he is met in Court by interested brewers' chemists, who swear that all is as it ought to be, and Somerset House appears with all its official weight and defends anything and everything. As a public analyst, I frequently am called upon to analyse beer for the authorities under which I act, but I have invariably to report that, according to excise regulations, such samples are genuine. My authorities, who know in many cases that the samples sent me are of vile quality, no doubt think that they have either a fool or an incompetent chemist as public analyst.”

The St. Austell brewer, we are sure, knows this as well as we do, and this adds to the impudence of his attempt to humbug our contemporary, *The Western Morning News*, but what Parliament ought to know, and what advocates of English agricultural prosperity ought to insist upon an answer to, is, how it came to pass that the Chemical Laboratory officials deliberately lied upon this question to the lineal descendant of the Plantagenets and heir to the English Crown who honours his country by taking a magnificent salary to act as Chancellor of the Exchequer, and delivers himself of such distortions of fact to Parliament as that of four-fifths of the beer sold being brewed from malt and hops only. He cannot substantiate it; Somerset House cannot substantiate it, for a very sufficient reason—it is an impudent lie. That lie, however, has caused *one million five hundred thousand* acres of barley land to go out of barley cultivation mainly into permanent pasturage, employing two-thirds less labour; it has driven into starvation or crime English men and women once honestly earning a living upon the land, and has made our House of Peers the resting place of some swindling brewery company promoters who ought to be with Hobbs, serving Her Majesty. It has given increased use to sugar, maize, rice (which are grown by niggers) and chemicals, and has made the brewer a purveyor of chemical swipes instead of the honest English ale, that honestly made is a wholesome beverage, but which, as now made, is a fraud upon the public, and a testimony to the ignorance and anti-English working of the Somerset House Laboratory officials. Truly the enemies of England and of English agriculture are those we pay highly to conserve our interests.

A FAT APPOINTMENT.

THE Spalding Urban District Council should take care or extravagance will bring it to ruin. At a recent meeting of the Sanitary and Allotments Committee there were twelve applications for the post of Sanitary Inspector and Allotments Manager, at a salary of £30 per annum. The applications were from Mr. A. L. Seymour, tobacconist, Hall-street; Mr. R. H. H. Hand, architect, Moulton; Mr. A. C. A. Nainby, carpenter; Mr. C. Quarmbly, Spring-street; Mr. W. Jepson, architect, Hawthorn Bank; Mr. C. N. Bower, Mr. J. W. Parkinson, Mr. R. Buffham, watchmaker, Station-street; Mr. E. Guy, Pinchbeck; Mr. J. Noble, London-road; Mr. G. Woodthorpe, Crescent; and Mr. W. Proctor, School Attendance Officer. The Committee weeded out Messrs. Seymour, Hand, Nainby, Quarmbly, Jepson, Bower and Parkinson to meet them at a second meeting, and Messrs. Seymour, Hand and Nainby were eventually selected to meet the council. Judging from the professions of the competitors, we should say that no matter which of the applicants be selected the salary will be worth his services. But who is there who would not study sanitary science when such fat appointments are to be had?

DANISH BUTTER AND THE ENGLISH PRESS.

THE Danes in general and Mr. Harald Faber, the agent of the Danish Government engaged in pushing the sale of Danish butter in England, in particular, are about as knowing in the art of securing cheap advertisement as was even the great Barnum himself. The folly of certain Irish butter factors, and the untrue evidence given at Manchester in the prosecutions for excess water in butter, where so-called Irish experts were found defending even as high a percentage as 20 of water in butter as a reasonable amount, gave Mr. Faber, exactly as we said at the time would be the case, a chance to hocus English journals into another series of gratuitous puffs for Danish butter, and secure a commensurate abuse of English and Irish produce. We are weary of the asininity of newspaper editors who solemnly write upon artful advertisement dodges of the Copenhagen Laboratory for Agricultural Research, as though they were important contributions either to scientific knowledge or to the public welfare. Our readers know more about loss of weight by evaporation and the average percentage of water in Danish and other butters than Copenhagen free advertisement hunters can teach them. They also, we think, know that it is about time some very strong language was applied to the fools who are stupid enough to be gulled by the Danish reports into panegyrics of Danish butter at the expense of home produce. We produce as good, and we ourselves suspect purer butter in the United Kingdom than we can get from Denmark, and in addition to being a decidedly unpatriotic act, it is not even common sense of English newspapers to be hounded by these advertisement hunting reports into praising Danish butters and penning diatribes about our native butters. What, after all, had the Danes to tell us? Nothing more than that in summer time 14 per cent. of the casks gave off brine, and in winter 44 per cent. gave off brine; only 5 per cent. of the number of casks gave off more than 1lb. of brine, while 10 per cent. gave between 4oz. and 1lb., and over half the number of casks giving off brine gave less than 4oz. Taking only those casks which gave off brine, the average amount of brine drained off was:—In summer 33 hundreds, or 6oz. per cask; in winter 48 hundreds, or 8½oz. per cask; and for the year 46 hundreds, or 8oz. per cask. If the amount of brine be calculated on the total number of casks exhibited it amounted to:—In summer 5 hundreds, or 1oz. per cask; in winter 22 hundreds, or 4oz. per cask; and for the year 14 hundreds, or 2½oz. per cask. The average amount of brine which drained

off these 1,862 casks when left standing for 18 days was, therefore, 2½oz. per cask. Mr. Faber makes the following comment: "It will at once strike the reader that the loss of weight of the butter due to evaporation of the water, even through the wood, is greater than the loss of weight from brine running off, and even so for the group of casks giving off more brine than 4oz. Of course, these figures are averages, and there would be no difficulty in picking out a cask with a larger loss of weight in the shape of brine than the loss by evaporation. But averagely for Danish butter, under the stated circumstances, there is a loss of weight due to evaporation which, in eleven days in a cold room, is 5oz., and which for casks giving off brine is nearly 8 to 10oz. The average loss by evaporation is three times greater than the loss of brine, when taking all casks together, being respectively 5oz. and 1½oz. (29 and 9 hundreds) per cask of 1cwt. (for eleven days)."

There is no wonderful discovery in the above to justify the silly gush about Danish butter and its quality any more than there is in Mr. Faber's statement that 48 shows were held during five summers and four winters, from the summer 1890 to the summer 1894; the last show was judged on October 1, 1894. The average amount of water in Danish butter, sampled and analysed under such conditions, is 14.36 per cent.; 2,774 samples, or over 70 per cent. of the total number, contained between 13 and 16 per cent. of water, and this is, therefore, considered to be the normal and proper amount in Danish export butter, and in a report from the laboratory it is said that there is little doubt that the dairies, in nearly all cases, are able, when following proper methods of butter-making, to keep the yearly average amount of water in their butter below the 16 per cent. When higher percentages of water occur they do not justify an accusation of "adulteration," if by that term is meant a fraudulent incorporation of water in the butter, which hardly any Danish dairy has ever attempted. But some dairies produce at times butter with too much water on account either of unsatisfactory local conditions or of faulty make and manipulation. With reference to this branch of the subject, Mr. Faber significantly adds: "The amounts of water found by the analyses of the laboratory at Copenhagen must necessarily be larger than what is found in Danish butter by almost any other analyst. There may, therefore, be less discrepancy than at first sight appears between the results obtained by some English public analysts analysing Danish butter (or what is said to be Danish butter, not always correctly) and the results given in the report of the laboratory at Copenhagen. But while it is claimed that 14½ per cent., or between 13 and 16 per cent. of water is the true average for Danish salt butter made for export, when sampled freshly made, it is not for a moment claimed that these figures are equally applicable to the butter made in other countries."

There are home dairies that produce butter containing even less water than this amount, and before English editors write down English and Irish produce to benefit the foreigner they ought to give some thought to the grave question, if such procedure is not only disgraceful and unpatriotic conduct on the part of English newspapers, and a fouling of our own nest to benefit the enemies of English industries. But, so long as they are foolish enough to open their goose beaks to Mr. Faber's cramming, they may rest assured the Copenhagen laboratory will keep them well supplied with goose food of the richest sort.

CARAMELS CONTAINING PARAFFIN WAX.

Food and Drugs Act Inspectors have not hitherto given much attention to confectionery, and the chewing gum case was not one to encourage them to do so, but if chewing gum is not an article of food caramels, undoubtedly, are. An injunction sought for and obtained

not long ago, by Messrs. Clarke, Nickolls and Coombs, brought to light some ugly facts. It appears that unscrupulous persons have passed off caramels as Clarke, Nickolls and Coombs' manufacture which were in reality made by other firms, notably American houses who are exporting to this country. Some time ago, says *The British Baker and Confectioner*, Messrs. Clarke, Nickolls and Coombs' warehouseman was passing the defendant's shop, when he saw a ticket in the window bearing words, "Milk Caramels." This ticket was placed amid a box of caramels which he knew for a fact were not of the plaintiffs' manufacture. Acting on the instructions of Mr. Alexander Horn, managing director of the firm, he subsequently went to the defendant's shop, and in company with his brother's wife asked for three-penceworth of Messrs. Clarke, Nickolls and Coombs' caramels; the goods handed to him were not of that firm's manufacture. He pointed out that the name on Messrs. Clarke, Nickolls and Coombs' card, which rested on the caramels exposed in the window, had been torn off, leaving only the trade mark of the firm and the words "Milk Caramels." The goods were afterwards handed to Dr. J. Goodfellow for analysis. This gentleman found in the caramels submitted to him a quantity of paraffin wax, while in Messrs. Clarke, Nickolls and Coombs' own caramels he failed to trace any wax whatever. In his affidavit Dr. Goodfellow expressed opinions that the caramels bought of the defendant were injurious to health.

Mr. Alexander Horn in his affidavit swore that numerous persons had been retailing caramels as "Milk Caramels" manufactured by the plaintiffs, but which, he said, were of an inferior character to those turned out by the company. He likewise pointed out that his firm had sustained considerable loss in consequence of such sales.

Defendant's solicitor admitted that the caramels were made by an American house, and as there was no defence of the action the court granted an injunction perpetually restraining the defendant, his servants and agents, from "selling caramels or other sweetmeats or goods not manufactured or sold by the plaintiffs as and for caramels, sweetmeats, or goods made or sold by the plaintiffs, and from showing any of the plaintiffs' labels or tickets in connection with the sale of any caramels, or other sweetmeats or goods not made or sold by the plaintiffs, and from infringing the plaintiffs' trade mark."

Doubtless this latest game of the gentry of the land of wooden nutmegs will receive some attention from our readers.

A WEIGHTS AND MEASURES CASE.

At Tavistock on June 5, Mr. James Hill, oil merchant, was summoned by Frederick Edwards, inspector, who deposed to finding a gallon measure deficient to the extent of two liquid ounces, the half-gallon four ounces, and the pint three quarters of an ounce. Each measure bore the county stamp. Witness acknowledged having a dispute with the defendant, who threatened to report him to his employers, but said that had nothing to do with the action. It was submitted that the conduct of Edwards towards Hill was to be inquired into by the County Council, the inspector having refused to pass certain weights and measures belonging to defendant, which had been subsequently passed by other inspectors as correct. Mr. Pearce, for defendant, asked their worship to appoint an independent person to test the measures, as he contended Edwards was not a fair authority to say whether Mr. Hill had infringed the Act or not. It was also pointed out that Edwards had been reported not only to the Devon County Council, but the Cornish County Council; but Edwards refused to reply to certain questions. Mr. Pearce told the Bench that he regretted Mr. Edwards had refused to reply to certain questions. He would, however, draw his own conclusions. The issue involved in the case would come before another tribunal. He contended that the fact of the measures having been impressed with the Government stamp exonerated his client from blame, and that the decision given in the case of *Whittle v. Bernard* precluded his conviction. He had no desire to injure Mr. Edwards, but he hoped the opportunity would be afforded him of substantiating in every detail the charges made against Mr. Edwards.—In imposing a fine of 5s. and costs, the Bench remarked that they were satisfied Mr. Hill had no intention to defraud, but probably relied on the stamp and overlooked the measures, which might, in use, have become bulged.

INVENTIONS.

THE HUBBARD PATENT SECTIONAL STEEL OVEN.

THE insanitary bakehouse has long been a curse, and despite Dr. Waldo's exertions, seems likely to continue to be so, for the obstacles to reform are many. Every vestry is crammed with slum property owners or obliging pals well up in the art of burking any reform that will cost them anything. It may therefore be too much to look just yet for sanitary bakehouses everywhere, so far as situation and the house itself are concerned, but an invention recently brought to the notice of English bakers by Mr. Hubbard, and now to be seen at Felix street, Westminster Bridge-road, S.E., ought to appeal to even the owner of an insanitary bakehouse, if anything can lure him into righteousness, for it consumes only half the fuel that an ordinary oven does, is ready to bake in half an hour after lighting, can be instantly regulated to whatever degree of heat is required, and in it onions, fish, and meat can be cooked at one and the same time without the one tainting the other with its odour. It can be taken apart and moved anywhere at will, and one can bake or cook anything with it in any place where fuel of any kind is to be had, for it will burn anything, and will work as well in an open field as in a perfectly fitted bakery; in a word, it is the ideal oven for cooking. The prince of London caterers and cooks, Benoit, has given it his *imprimatur*, and when he decides to use it, that alone may be taken as a *nihil obstat* to its general use. We saw it in work. It did all that was claimed for it with ease, and as it costs far less than any brick oven, and requires only half as much fuel, it is worthy the attention not only of bakers, but of hospitals, workhouses, and every kind of large institution where catering needs to be promptly, well, and economically done.

The Hubbard oven is constructed on the principle of the rapid circulation of fresh air within the oven during the operation of baking, which is effected in such a way that the heat is maintained at a small expenditure of fuel, and is perfectly uniform in its operation. In this circulation of fresh air, it differs radically from other ovens, where, the heated air remaining stationary, the natural gases and odours from the articles cooked cannot be carried off.

From a sanitary point of view, this is the only perfectly healthful system known, it being impossible for the products of combustion to come in direct contact with the food, as is the case in the ordinary brick oven, where the sulphurous gases and fumes enter into and contaminate every article.

MEAT INSPECTION IN CHICAGO "A FARCE."

ACCORDING to the Chicago correspondent of the *New York World*, the Bureau of Animal Industry of the Agricultural Department has its meat inspectors here, but their work is a mere farce. *The World* correspondent, by an exhaustive investigation of the system in vogue of the big packing-houses here, has discovered the purely perfunctory character of the bureau's inspection. It is admitted that the tagging and stamping are merely used by the packers to advertise their meats.

In all the packing-houses here the pork is treated precisely as *The World* has stated it is done in North's establishment in Boston. But it is not only the pork inspection that is defective. The Government tag upon a quarter of beef is supposed to vouch for its quality, but the men who put the tags on are not experts, and don't know whether the meat is wholesome or not. All they are experts in is in the art of tagging, for which they are paid 60 dols. a month.

The dressed-meat examination carried on at the slaughter-house of "Nelse" Morris, one of the "Big Four," is not at all thorough.

When the Morris establishment was visited by *The World* correspondent, he found 200 cattle in the building about to be slaughtered. Other droves were corralled outside. These cattle, it was said, had been inspected by one of Secretary Morton's agents before they had been driven in, but no one could point out the agent, and there was some doubt as to his existence in that vicinity. A post-mortem inspection of the cattle is supposed to be made in the slaughter-house, but the inspector who is supposed to make it was not there. When a *World* reporter asked an employee of the house where the inspector was he replied:

"Oh, he's not got here yet. He'll be around soon."

INSPECTORS KNOW NOTHING.

At that time about 80 of the cattle had been slaughtered and dressed, their internal organs, which the inspector should examine, being thrown down the chute and carried off to the different tanks. If the inspector went hunting among these organs and pieces of organs for symptoms of disease he would certainly have his hands full, and he does not do it. Even if he found a diseased organ he could never tell from which of the steers it had been removed.

Veterinarians do not consider it possible to certify to the wholesomeness of the meat of an animal without making a post-mortem examination. That is what the Government employs the inspectors for, and the Government tag upon a quarter of beef is supposed to guarantee to the buyer that all the requirements of the law as well as the rules of the bureau have been complied with. But in every department of the inspection there is this absence of method and lack of discipline. The employees consider that if they did their duty they could not properly examine one-tenth of the meat that they now have to certify to, and demoralization ensues. The

worthlessness of the inspection, under the circumstances may be well imagined.

The great packers all throw their influence against any kind of inspection at all, except that at present conducted by the Government on the lines laid down by them. They heartily endorse this, because it certifies to the wholesomeness of their good beef, as well as to a lot that is not good, without compelling the destruction of that which is diseased. Dealers in meat, however, who do not buy live animals, and therefore run no risks, are in favour of the most rigid inspection, because the more thorough it is the better they are protected. And, of course, no examination could be too rigid to suit the consumer, who wants all the protection he can get.

It was proposed some time ago that since the Government has determined to maintain a so-called inspection bureau, it would be a good idea to inaugurate a system of stamps showing its quality from a health standpoint. In Germany, where the inspection methods, it is said, are most thorough, the inspectors have tags which classify the meat. Meats that are just wholesome enough to pass inspection, but which the inspector considers are not prime, are stamped second-class. This warns the consumer what he is getting, and he is less likely to be cheated.

ONLY ONE TAG HERE.

All the meat that can squeeze past the United States' inspectors is marked with the same kind of a tag. There is no classification. If the inspectors worked their hardest, day and night, they might inspect about one-third of the meat to which they affix tags. Meat men say that it is an outrage for the Government to certify to meat which it knows nothing of.

There are in Chicago, as in the vicinity of New York, many abattoirs doing an interstate trade with their products, at which there is no inspection at all. Secretary Morton's rules and orders as to disinfecting the yards, chutes and buildings are absolutely a dead letter, and so are all the rules for disinfecting cars engaged in interstate commerce. The rules are most elaborate, and a layman who read them would be delighted at the sanitary protection exacted by a stern Government.

As it is, the stockyard men and packers do absolutely as they please in the matter of disinfecting, just as if there were no laws and no rules.

The city and State health authorities here have the same sublime confidence in the Government inspection as *The World* has shown exists among similar centrals in Boston and New York.

One way in which a meat-eater can absolutely insure himself against disease is to import his American meat from Europe. The Government carefully examine all the meat that goes there at the expense of the American consumer. Besides that the European markets will only take the very best American beef. But the American can probably buy his American meat in London and bring it to this country at the same price that the same thing would cost him in New York, because, owing to the operations of the Chicago Beef Trust, the best American beef is one cent. a pound cheaper in London than it is in New York, in spite of the big freight, port charges, insurance, etc.

There is always two sides to a story, and the other side of this inspection business is told by Dr. D. E. Salmon, chief of the Bureau of Animal Industry, in a letter to the *New York Provisioner*. After denying seriatim pretty nearly everything the *World* man says, Dr. Salmon sarcastically concludes:—

If the editor of the *World* will only take something for his liver, and then calmly read the law and regulations, and review the facts, he will be able to place this matter before the readers in a much more consistent and credible form.

Is it not strange that this meat inspection should go on for four years without irritating the sensitive nerves of the *World*, and that this savage attack should come after many improvements have been made, and should follow so soon after the published announcement of an investigation concerning the alleged beef trust? This investigation has caused trepidation in certain quarters, and the officials engaged in it have discovered that they have enemies in unexpected places. There have been sudden outbreaks of hostilities in many directions, with threats of legal complications to obstruct the inspection of various places. The occurrence of all these things at this time may be a mere coincidence, but, whether a coincidence or a concerted attack, the investigation will go on just the same, and the final report will be made without regard to such influences.—*Meat Trades Journal*.

OBITUARY.

DR. A. SWANN, Medical Officer of Health for Batley, has died from apoplexy, at the early age of 44 years. He was appointed Medical Officer of Health for Batley in 1884, and is widely known from his researches and writings upon lead-poisoning, an intimate knowledge of which insidious disease he derived from observing the effects of the soft water of Batley upon the lead service pipes, and its consequent *poisonous action upon the human body*. Dr. Swann also held the offices of Government certifying surgeon to the factories, surgeon to the local Volunteer Corps, to the Police, and to the Great Northern Railway Company. In his last hours he was attended by his friends Dr. Mayo Robson and Dr. Churton, of Leeds, whose efforts were, however, unavailing.

ADULTERATION PROSECUTIONS.

MILK.

AT Liskeard Petty Sessions, before Mr. W. H. Stanton (Mayor), Messrs. T. Lang, S. Bone, Wm. Sargeant, and Wm. Nettle, on June 7, James Lobb, of Roseland, Menheniot, was summoned by Superintendent Philp for selling adulterated milk.—The Superintendent stated that he purchased a pint and a-half of raw milk of defendant, who was selling from door to door on the 13th of May. He told defendant he was going to have it analysed. He produced a certificate from Mr. Kitton, London, public analyst, which showed that the milk contained 7 per. cent. of added water, and was 10 per cent. deficient in fat.—Mr. A. W. Venning, who appeared for defendant, raised a technical objection to the certificate, on the ground that the milk had not been weighed, stating a case in support of his argument.—Superintendent Philp urged that the objection raised was new to him, although he had dealt with many such cases.—Mr. Venning: "All the more credit to me for discovering it."—The Bench, after careful deliberation, dismissed the summons.—Mr. Penney, of Green-lane, Liskeard, was also summoned for a similar offence, the certificate showing his milk to be 21 per cent. deficient of fat.—This case was also dismissed, on the same ground as the former.—Superintendent Philp gave notice of appeal.

AT Wolverhampton, on June 5, Walter Amos, of Tipton, was charged at the instance of the inspector under the Food and Drugs Act with selling milk with 93 per cent. of cream abstracted. William Grasson proved buying the milk and submitting the same to Inspector Van Tromp, who had it analysed. Defendant was fined 20s. and the costs, £1 5s. 6d., or in default one month's imprisonment.

AT Bridgend, on June 8, William Merriman, of Tynowydd, milk dealer, was fined £1, including costs, for selling adulterated milk.

ON June 6, H. J. Dickens, of Avenue Farm, Cricklewood, a member of the Hendon District Council, was fined £5 at Harlesden for selling new milk (to which a warranty in writing had been given which was false) to the West London Dairy Company. The milk was certified to have had 10 per cent. of fat extracted.

AT Warwick, on June 10, at the Borough Police-court, Joseph William Archer and John Millican Archer, farmers, Budbrooke, were summoned by Mr. F. P. Trepass, sanitary inspector, for selling through an employee milk not of the nature, substance, and quality demanded.—Mr. Trepass said that Dr. Bostock Hill's analysis showed that the milk was deficient in 30 per cent. of its natural fat, and that no change had taken place in the constitution of the article which would interfere with its analysis.—Mr. Crowther Davis, for the defence, contended that the customer had obtained what he asked for, viz., new milk without adulteration. He suggested that the deficiency of fat was due to the jolting of the cart, which would cause the cream to rise to the top. It was then sold, and as only six quarts were left it would not have its full share of cream.—The Hon. R. H. Lyttelton said that the defendants might not have meant any wrong, but the customers did not get what they had a right to expect. The magistrates must convict, but they were willing to state a case. A fine of £1 and £1 5s. 6d. costs was imposed.

AT Birmingham Police Court on June 7, the Elmhurst Dairy Company, Lionel-street, milk salesmen, were summoned for selling milk adulterated with 19 per cent. of added water.—Mr. Hiley (from the Town Clerk's office), who prosecuted, stated that on April 23, Thomas Davis (inspector under the Food and Drugs Act) met the defendant company's cart at the corner of Benacre-street, and found one of their servants (Frederick Edwards) delivering milk to a man named John Porter. He took samples, which were found to contain 19 per cent. of added water.—Davis and Porter corroborated this statement.—Edwards was also called, and said that Mr. Rogers, defendant's manager, gave him express instructions to take some "splash" with him and put into the milk. He put water in the milk on April 23. It was the custom to take out the water in the morning when they went to the farm for the milk.—For the defence Mr. Hazel called Mr. Rogers, who denied that he ever gave such instructions to Edwards.—The defendants had been previously fined for a similar offence, and the Bench now imposed a fine of £10 and costs.

AT Lichfield, John Cartmale, Hill Farm, Streethay, was summoned by Harold Von Tromp, inspector under the Food and Drugs Act, for selling milk, from which 10 per cent. of its original fat had been abstracted.—Mr. H. Russell, Lichfield, defended.—Samuel Toy, assistant inspector under the Food and Drugs Act, said that on May 2 he purchased half-pint of milk from a lad employed by defendant, and told him he had purchased it for public analysis.—Mr. H. Von Tromp said that on May 2 he received two samples of milk, one of which he forwarded to the county analyst. He subsequently received a certificate from Mr. Jones (the analyst) stating that 10 per cent. of the cream had been removed from the milk, which was also slightly watered.—Mr. Russell said he would prove conclusively that the milk had not been touched by defendant

from the time it was taken from the cow until it was sold to the assistant inspector. Mr. Cartmale was a very respectable man, and had never been summoned before.—Samuel Cartmale, son of defendant, was then called, and stated that as the cows were milked the milk was emptied straight away into a churn, from which it was taken out by the servant girl and supplied by her to the boy, who took it out to the customers. As far as he knew no cream was abstracted.—George Taylor, in the employ of Mr. Cartmale, was also called, and stated that the milk, as far as he knew, was delivered to the customers in the same condition as it came from the cows.—Other evidence was given for the defence.—Mr. Von Tromp quoted two cases, in which it had been held on appeal that although the person summoned had no knowledge of any offence this was no answer to the charge.—The Mayor said the Bench could not get over the analysis, and could do no other than inflict a penalty of 10s. and £1 11s. 6d. costs.—Thomas Chapman, farmer, Gaia Fields, was summoned for selling milk on the same date from which 20 per cent. of the cream had been abstracted.—Evidence was given by Samuel Toy and the inspector, the latter stating that the certificate of the county analyst, with respect to the sample sent to him, was that 20 per cent. of cream had been abstracted, and there was 10 per cent. of added water.—Defendant was fined 10s. and costs.

At Stone Police-court, on June 4, John Kendrick, farmer, Stone Park, was charged by Mr. Knight, county inspector of food and drugs, with selling milk which was not of the quality required by law.—Mr. Henry Walters appeared for the defence.—Mr. Gifford gave evidence to purchasing three samples of milk from Frank Higginson, a youth in the employ of Mr. Kendrick, on the 4th ult. He divided each sample into three parts, left one of each with the boy, and handed the others over to the county analyst.—Cross-examined by Mr. Walters, he had previously taken samples of Mr. Kendrick's milk, and this was the first complaint to his knowledge.—Mr. E. W. T. Jones, county analyst, said he had analysed the samples of milk in question. Two of them were of poor quality, but they were not below the standard. The third sample was not only poor, but was 15 per cent. below the standard.—Witness was cross-examined by Mr. Walters, who wished to show that it was a vexed question among analysts as to what was a proper standard for milk, but witness said it was not a vexed question. No water was found in the milk, but something had evidently been extracted from it, although he did not believe, knowing the high character of Mr. Kendrick, that he was aware that such had been done.—Evidence was called for the defence to show that the cows were milked at six o'clock in the morning, and that all the milk was mixed together, put in the churns, and sent into Stone at seven o'clock, a space of time which did not allow of cream to arise, so it was impossible for any to have been extracted. No old milk from the previous night was sent out in the morning. It was the custom to send out in a tin along with the churns about four pints of milk from one cow for persons who wanted it for their babies. That, too, was pure milk, just as it came from the cow.—Mr. Copeland said the Bench thought the case proved. There was no doubt, as Mr. Jones said, something had been extracted from the milk. Mr. Kendrick should look after his business better.—Fined 5s. and costs. 〰

At the Govan Police Court, on June 10, before Ballie Copley Scott Martin, a dairyman, carrying on business in Fleming-street, Govan, was charged with selling a quantity of sweet milk to the Sanitary Inspector of Govan which was not of the nature and quality demanded, as it was deficient to the extent of 74 per cent. of natural fat.—Accused was defended by Mr. Gavin Braidwood, instructed by Mr. Oatts, writer, Glasgow.—Mr. G. Dunne, the sanitary inspector, stated that on the 20th May he asked for sweet milk in the accused's shop, and was served by Mrs. Martin. On offering to divide the milk for analysing purposes, Mrs. Martin refused to take a third portion, after being advised by her husband. Witness then poured the milk into a bottle, and while he was doing so Mrs. Martin said she had made a mistake and had given him skim milk instead of sweet milk.—By Mr. Braidwood—The counter had just been washed. He was well known by the accused. He was certain that he stated what he wanted the milk for before the mistake was pointed out. Skim milk had about the same percentage of fat as the sample.—The assistant sanitary inspector corroborated.—Witnesses were called for the defence to prove that a mistake had been made. Mrs. Martin stated that she found the mistake out before the inspector said he was going to have the milk analysed. She poured the milk into the glass, and was thereby able to detect the difference. The counter had just been washed and the dishes shifted, and that was how the mistake was made.—The magistrate said he could not think but that the best milk would have been given to the inspector, as he was known to the accused, and that bore out the defence that a mistake had been made.—The Fiscal: One woman who knew he was an inspector gave him cream instead of sweet milk. (Laughter.)—The magistrate said that as there was a doubt in the case the accused would get the benefit of it, and he therefore dismissed him. It was clearly the duty of the inspector to bring the matter before the Court.

ONLY A SLIGHT DEFICIENCY.—David Garry, Hamilton-street, Govan, was similarly charged in respect to sweet milk which was deficient in fat to the extent of 7 per cent.—Mr. D. U. Dickie, of Messrs. Dickie and Simons, writers, Glasgow, appeared for the defence.—The defence was that the milk had not been tampered with,

and that intermittent abstraction of small quantities out of the whole amount in the dish accounted for the deficiency, which was trifling. Witnesses were called to prove that morning milk was poorer than afternoon milk, the result of forced feeding.—The Fiscal: The cows had a heavy supper. (Laughter.)—The charge was found not proven.

At St. Helens, on June 7, before Messrs. Chadwick (chairman), Dromgoole, W. Gamble and Rawlins, Henry James Kenny, 77, Raglan-street, cowkeeper and milk dealer, was summoned for abstracting cream from a pint of milk. The Town Clerk (Mr. Jeeves) prosecuted on behalf of the police, and Mr. H. L. Riley defended.

The Town Clerk said the prosecution was taken under section 9 of the Food and Drugs Act, which provided for a penalty of £20. The facts in the case were that Inspector Steele, by the instructions of the Chief Constable, visited defendant's house on the 16th May, and purchased a pint of new milk for analysis, for which he paid 1½d. He told the defendant's wife, who supplied him, what he wanted it for, but she refused to have a portion of it back, saying that it was pure milk as it had come from the cow, and she had no doubt it would be all right. The sample was submitted to the Borough Analyst, who certified that upwards of 47 per cent. of the fat had been removed. The certificate was binding on the Bench, although the analyst was not in court. After defendant received the summons he came to the police-station and asked the Chief Constable that somebody should be sent down to see his cows milked, and that a sample should then be taken. This seemed a perfectly fair proposition, and on the 29th Inspector Steele went down, saw the cows milked, and took a sample, which Dr. Robertson certified to be average milk. Compared with the second sample, the first sample showed that nearly 20 per cent. of fat had been removed.

Mr. Riley: No, '58.

The Town Clerk said it was a matter of figures, and he was prepared to stand by them. The difference between the 2·62 of fat of the first sample and the 3·20 of the second was '58.

Mr. Riley: But the analyst had certified that the first sample had lost nearly 44.

The Town Clerk said that '58 per cent. was 1·26th, roughly speaking, of 3·2, and he was therefore correct in saying that 20 per cent. of the fat had by some process been removed, and to that extent the purchaser was defrauded.

Inspector Steele stated that on the instructions of the Chief Constable he went on May 16 to the defendant's house, at 77, Raglan-street, to get a sample of milk. He purchased a pint of new milk for 1½d. from defendant's wife. He told her he had purchased it for analysis, but she refused to take a portion back, and she said she had no doubt the milk was pure, just as it had come from the cow. He sent a sample to Dr. Robertson. On the 24th, after he had served a summons on defendant, the latter came and asked that somebody should come and see the cows milked. Witness went down, saw the seven cows milked, and the milk all mixed in one can, and took a sample.

In reply to Mr. Riley, witness said it was about a week after the first sample was taken that defendant came and said he had had a sample analysed, and was afraid that it was under the normal standard, so he wanted someone to see the cows milked. He knew defendant and his wife had lived in St. Helens all their lives, and that he had been in business 10 years without being charged with any offence. He did not know that the normal variation in the amount of fat in milk was from 2·80 to 4·50. He entirely relied on the certificate of the analyst.

For the defence, Mr. Riley said the temerity with which the prosecution had been proceeded with and the disrespect shown to the Bench in not having Dr. Robertson present, should not encourage them to proceed to a conviction. It was true that if defendant had chosen to deposit the fee of two or three guineas he could have insisted on the analyst being present, but that did not remove the obligation of calling him from the prosecution. He thought it desirable that Dr. Robertson should be called to explain the variation between the two certificates. The first one asserted that 47 per cent. of fat had been removed, but the fallacy of that assumption was shown in the second certificate, which, with 3·2 per cent. of fats, gave the milk as average quality.

The Town Clerk said Mr. Riley was mixing percentages and parts.

Mr. Riley asserted that the discrepancy was only '58 and not 20 per cent., and he submitted the Bench ought not to convict a respectable man for that, even if the Bench thought a technical offence had been committed. Defendant's whole conduct was that of an honest man who believed he had nothing to fear. He would prove that neither defendant nor his wife and son, who were the only persons who had anything to do with the milk, had done anything to injuriously affect the quality of the milk. There was no more right to give convictions in favour of corporations or the chief constable than there was for the humblest private citizen.

The Town Clerk explained that the question of making a defendant pay the analyst's fee for attendance lay entirely with the magistrates. He could have been there if Mr. Riley had asked for him.

On the suggestion of the Bench, Dr. Robertson was sent for. In reply to Mr. Riley, Dr. Robertson said it might be that the milk from a single cow could show a variation of 2·80 to 4·50. It would not in a dairy sample. Feeding cows on mangold wurtzels would not produce the best quality of milk. He recognised the Somerset House standard of 2·75, and with regard to his two cer-

tificates, explained that it was not 4·7 dealing with the original 100 parts, but 4·7 of what ought to have been there. The difference between the 2·75 standard and the 2·62 of fat in the sample was ·13.

Mr. Riley: There is no doubt of this—that supposing ten or twelve gallons of milk, unskimmed, is put in a tank in the morning, if sales take place frequently during the day, with the process of the cream rising to the top the quantities of milk sold from the top does leave the remainder at the close of the day of rather less than the average quality of the bulk.

Dr. Robertson: It would prove not to be so. Many such examinations have been made in order to controvert that generally accepted opinion, and it has been proved that the difference is practically infinitesimal, something like ·02 per cent.

Mr. Riley: Well, that would reduce this another fifth. It is rather assumed the other way in Stone's manual.

Evidence was given by the defendant, his wife and his son, who each said they had not tampered with the milk in any way.

The magistrates retired, and after several minutes' deliberation, the chairman stated that the majority of the Bench had decided to convict and inflict a fine of 10s. and 14s. costs.

Mr. Jeeves asked the Bench if they allowed Dr. Robertson's fee, but they unanimously declined to do so.

At Lambeth, on June 11, Mr. G. W. Marsden, solicitor to the Camberwell Vestry, appeared in support of two summonses against milk sellers for selling adulterated milk.—William Barfoot, of Treherne-road, Brixton, was summoned by Inspector Kerslake for selling milk containing 8 per cent. of added water. The defendant pleaded that he sold the milk in the condition in which he received it from the contractors.—Mr. Hopkins told the defendant he could have protected himself by getting a warranty, and fined him 20s. and costs.—J. Kemp, of Grove-vale, was summoned by Inspector Chadderton for selling milk containing 10 per cent. of added water.—The defendant said he sold the milk in the same condition as he received it.—Mr. Hopkins: That may be so. I should be sorry to believe otherwise, but it is absolutely no answer to the charge. You must pay a fine of 20s. and costs.

COFFEE.

At the Chesham County Police-court, on June 8, before Mr. A. Barnes, the Rev. T. C. Hills, Mr. A. Greaves, Mr. Johnson Pearson, Mr. C. P. Markham, and Mr. J. H. Green, Nancy Webb, shopkeeper, was summoned on the information of Colonel Shortt, inspector under the Food and Drugs Act, for unlawfully selling, at Newbold Moor, on the 8th May, to the prejudice of Francis Shortt, a ½ lb. of coffee, which contained 60 per cent. of chicory.—Colonel Shortt said defendant was summoned under the 6th section of the Food and Drugs Act. A ½ lb. of coffee was asked for, and on analysis it was found to contain 60 per cent. of chicory, no notice of the same being conveyed to the purchaser either by the vendor or by any label.—The Bench imposed a fine of 1s. and costs, total 10s. 6d.

ROBERT COLLINS, Brighouse, was summoned at Halifax on June 1 by Inspector Crabtree, charged with selling adulterated coffee on April 26. Inspector Crabtree said he asked for half a pound of coffee, for which he paid 7d. The analyst reported that the sample consisted of 40 per cent. of coffee and 60 per cent. of chicory. The bench considered the case a serious one, and imposed a fine of 20s. and 19s. expenses.

MARGARINE.

JOHN WESLEY HILLARD, of the Lion Grocery Stores, Brighouse, was charged at Halifax on June 1 with exposing for sale margarine which was not properly labelled. Mr. Waddington defended. Inspector Crabtree stated that he visited the defendant's premises on April 26. He went to the butter stores and said to the shopman in charge, "Weigh me a pound of butter." The shopman did so, and charged 9d., saying it was margarine. The analyst stated that the sample contained only a trifling proportion of real butter. Mr. Waddington urged that there was no intention to infringe the Act. Mr. Hillard had establishments in many large towns, and in this instance they had the usual Friday's cleaning going on, and the margarine labels were removed temporarily. The assistants had strict instructions to carry out the requirements of the Act. The Chairman: There has been a technical offence, and we must impose a penalty of 10s. and 17s. 6d. costs.

SAFFRON.

BEFORE the Callington magistrates on June 6, Mr. W. Pollard, of Pensilva, was summoned for selling adulterated saffron. Mr. J. H. Trehane defended.—Superintendent Philp said he bought half an ounce of saffron at defendant's shop, and sent a part to be analysed. The report of the analyst showed the saffron to have been adulterated 2½ per cent. with grit and vegetable.—Mr. Trehane objected to the certificate of the analyst because he had not put down the percentage of saffron, grit, and vegetable as required by Act of Parliament. If he had this would have shown it to be a very good sample, as there was always some grit and vegetable in saffron. It had been admitted that with only 2½ per cent. of foreign mixture it would be a good sample.—The Bench upheld Mr. Trehane's objection, and dismissed the case.

WHAT IS GINGER?

At Glasgow Sheriff Court, on June 6, William Aitken, New Keppochhill-road, was charged by Inspector Armstrong for selling ground ginger which contained 20 per cent. of spent ginger. Mr. William Borland, writer, who appeared for the respondent, submitted that the charge was irrelevant. What was asked for was a quarter of a pound of ground ginger, and what was sold was ground ginger. It was said that some of the ground ginger was spent or exhausted. That raised the question, When was ginger not ginger? No foreign substance had been added. The article sold must be "of the nature, substance, and quality" demanded. No quality was asked for, and therefore the question of quality was out of the case. Mr. John Lindsay said that the complaint had been drawn up in the same form as complaints brought before his lordship's predecessors. The Sheriff said that anything that happened in the case of his predecessors could not affect him. Mr. Lindsay said he was prepared to prove what ground ginger was, and to prove that what the inspector got was spent or exhausted ginger—that was, ginger that had been put among spirit, the essence taken out and used for ginger-beer, and the residue mixed with ginger not so tampered with. Mr. Borland said it was quite possible to frame a relevant complaint under this Statute complaining of the abstraction of certain things from the article sold, but the question would require to be raised by some specific averments on the face of the complaint. Mr. Lindsay: Such as? Mr. Borland: It is not for me to draw the complaint; I will criticise it when I see it. His Lordship reserved judgment on the point raised in this case, and also in a similar prosecution against the St. Rollox Co-operative Society.

BUTTER.

At Stratford, Messrs. Jones and Co., provision dealers, Crownfield-road, Leytonstone, were summoned for having margarine exposed for sale not labelled as such, on 18th April.—Mr. George defended, and raised a preliminary objection that the service of the summons was out of time. Section 10 of the Food and Drugs Act provided that in the case of a perishable article the summons should be served within 28 days. In this case they were summoned for the 18th April, which made it 29 days.—Capt. Kittoe (the inspector) contended that margarine was not a perishable article within the meaning of the Act.—The Chairman said he had consulted the chairman of the Bench and the clerk, and their decision was that it lay with Mr. George to prove that the article was perishable. A "perishable article" meant one that would not bear analysis after 28 days. They overruled this objection.—Mr. Kittoe, jun., went into the box, when Mr. George objected that he was not a qualified inspector under the Food and Drugs Act.—The Bench ruled that the decision in the last case held good in this case, and the case was then proceeded with, Mr. George pleading not guilty.—Mr. Kittoe said that when he asked for some butter, pointing to a substance upon which he saw no label, he was told that it was margarine, and it was wrapped in a paper printed margarine.—Mr. George submitted that the wrappers, on which was printed "margarine," were on top of the tub from which the substance was taken.—The Bench held that this was not sufficient, and a fine of 40s. and costs was imposed.—A further summons against defendants for having incorrect scales was withdrawn, it being admitted that Mr. Kittoe, jun., did in this case act as inspector without being qualified.—A similar case against George Bell was also withdrawn.

TINNED MEAT POISONING.

It was reported, on June 11, to the medical officer for Leicester that over twenty persons were suffering from the effects of poison from having eaten tinned meat. In two cases the whole of the family which had eaten the food became ill. One person died. At the inquest on the body of this person, Emma Cooper, aged 65 years, who died on Tuesday after suffering intense pain consequent upon the eating of the tinned beef, evidence was given to the effect that a number of persons were taken ill after having a supper of the beef in question, which appeared to be in good condition. Mrs. Cooper was attended by two doctors, who stated that death was due to irritant poisoning. The jury returned a verdict in accordance with this testimony, and exonerated the shopkeeper who sold the beef from all blame. Twenty-six other persons affected in a similar way are reported to be going on favourably.

MORE TINNED SALMON POISONING.

MR. T. P. BROWN, the Skipton coroner (with whom was Mr. Wood, the deputy coroner), held an inquest at the Star Inn, Skipton, on June 7, concerning the death of Henry Bailey, a cotton warp dresser, aged 39 years, who had died on the previous night from peritonitis, brought on, it was supposed, by eating tinned salmon. It appears that some tinned salmon had been purchased, and had been partaken of by four other members of the family, but by the deceased some time after the others. Dr. Fisher was called in on Wednesday, and he and his assistant, Dr. Butler, were several times in attendance, but without avail. Dr. Fisher stated that the deceased had always appeared to be strong and wiry, but on this occasion they were unable to give him relief. There were no symptoms of peritonitis at first, and he (witness) was of opinion

that the deceased had met his death by partaking of poison in some article of food. He was taken ill on Wednesday, and on Thursday collapse set in, and he was pulseless for several hours. In answer to the Coroner, witness said that the deceased might have suffered from ptomain poisoning. He did not think it was known what was the real cause of this kind of poisoning, and tinned fish might contain the poison without its being observable. He did not think a post-mortem examination would help him to form any other opinion. Dr. Butler agreed with Dr. Fisher in his opinion, and eventually the jury returned a verdict to the effect that the deceased had died by taking, unknown to himself, an irritant poison in his food.

THE ALLEGED NOXIOUSNESS OF THE WELSBACH LIGHT.

ON the occasion of the recent acquisition of the electricity works at Oheltenham by the Corporation, Mr. W. H. Preece is reported to have spoken in disparagement of the Welsbach incandescent gas-light, which he asserted was "injurious to health." According to a local paper, he went on to say that when people found this out, and wanted a good as well as a clean and wholesome light, they would not go back to the ordinary gas-burner, but would go to the Cheltenham Corporation to get it. This statement, says the *Journal of Gas Lighting*, coming from a responsible Government official, naturally roused the general manager of the Incandescent Gas-Light Company, Limited (Mr. Julius Moeller), who promptly refuted, in a letter to the said local paper, the assertion as to the injuriousness of the Welsbach light. He quoted, in his support, the report of Professor Renk, the Director of the Hygienic Institute of the University of Halle, to the effect that if there is any carbonic oxide present in the products of combustion of the Welsbach burner, it is in far too small a quantity to be injurious to health; and he backed this up by the published opinions of Professor Carlton Lambert, M.A., F.R.A.S., of the Royal Naval College, Greenwich, and of the *Lancet* Commission. In face of reports from such authorities, Mr. Moeller cannot conceive on what grounds Mr. Preece stigmatised the Welsbach light as "injurious to health." He can easily understand that it is injurious to the health of the electric lighting industry; and he supposes it was a certain feeling of annoyance, caused by the appreciation of this fact, which led Mr. Preece to make the statement he complains of. We agree with him that when responsible officials descend to misrepresentations as to rival concerns, the limit of one's patience is reached.—*Chemical Trades' Journal*.

NEW MICRO-ORGANISM IN PORK.

DR. FRANK J. THORNBURY, of Buffalo, announces a new micro-organism, of the "yeast group," which he denominates *Saccharomyces porcus*. He apparently considers meat containing it dangerous, as it destroys white mice and rats twenty-four hours after inoculation.

CORRESPONDENCE.

DISEASE AND DISINFECTANTS.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—In the article "Disease and Disinfectants (VIII.)" which appeared in your issue of the 8th inst., attention is called to the interesting fact that in several instances in which fumigation with sulphurous anhydride gas has been employed, bugs and moths and their nits have escaped destruction.

Of course it would not be safe to infer from such experience that disease germs have also escaped; that may or may not be the case. Your readers, however, will be glad to know that insect life is much less likely to escape destruction when the sulphurous gas is employed in a wet state—that is to say, in association with the vapour of water.

In Kingzett's Patent Sulphur Fumigating Candles, as made by the Sanitas Co., Ltd., provision is made for the evaporation of water by utilising the heat that is generated from the burning sulphur, and where these candles are employed the water which is thus evaporated condenses on all articles and things within the chamber undergoing fumigation, and thus brings the sulphurous gas (which is soluble in water) into actual contact therewith.

It is well known to chemists that many dry gases are without chemical action upon other substances except in the presence of moisture, and in any case it has been proved beyond a doubt that fumigation with moist, sulphurous gas is far and away more effectual than fumigation by the same gas in a dry condition.—Yours faithfully,
C. T. KINGZETT.

THE HEALTH WATER PIPE

NEVER POISONS THE WATER.



PATENTEES:

WALKER & CO., HECKMONDWIKE.

THE EXPERIENCE OF THE MEDICAL

PROFESSION AND THE ANALYSES
CHARACTER BY EMINENT

OF THE MOST SEARCHING
CHEMISTS, PROVE THAT

WYETH'S BEEF JUICE

WYETH'S BEEF JUICE

Contains all the albuminous principles of Beef in an active and soluble form. It is produced under the careful manipulation of skilled operative chemists supervised and directed by the highest commercial integrity.

Contains the hæmoglobin of meat unaltered; that it possesses the nutritive properties of the choicest Beef to a higher degree than any extract of meat yet offered to the profession.

POINTS OF SUPERIORITY OF

HOW

WYETH'S BEEF JUICE.

WYETH'S BEEF JUICE

It is pleasant and agreeable to the taste.

IS TO BE TAKEN:

The proportion of nutrient to stimulating properties is such that it is acceptable to the stomach in cases of extreme debility.

Wyeth's Beef Juice should always be taken in cold, never in boiling water, as extreme heat destroys the valuable albuminous properties by rendering them insoluble.

A two-ounce bottle contains all the nourishment of three pounds of clear lean Beef.

Small and frequent doses of Wyeth's Beef Juice will restore strength, vigour and activity to overworked and exhausted brain and body.

It has great value as a strengthening diet in cases of Convalescence, Consumption, Nervous Prostration, and similar diseases; also in Typhoid Fever, Debility, etc.



Wyeth's Beef Juice,

Manufactured by JOHN WYETH & BROTHER, Pharmaceutical Chemists, Philadelphia, U.S.

Descriptive literature on application to the London Office, 30, SNOW HILL, E.C.,

Addressed to the RESIDENT REPRESENTATIVE, William F. Horton.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London,

COLEMAN'S "WINCARNIS"

OR
LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

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Food and Sanitation.

SATURDAY, JUNE 22TH, 1895.

AT LAST!!

At last the Food Adulteration Committee has decided to "cut the cackle and come to the 'osses," the Chairman announcing on June 18 that the committee were now taking evidence from local authorities on the subject. He stated that any county council, city council, or municipal body that wished to tender evidence should make application at once. There is, therefore, a prospect that the real purpose for which the committee was asked and appointed will at last receive some consideration. As we have repeatedly said the procedure of the committee has up to the present been practically waste of time and a wearying of its members. The fact that milk, butter, coffee, cocoa, &c., was adulterated required no proof. Everyone knew it, and until the last few sittings no questions were broached that really affected the working of the Acts themselves, or offered suggestions for their amendment. Now that local authorities,

the public analysts, and Food and Drugs Act inspectors, are to be examined, we shall, we hope, reach solid ground whereon practical proposals by those entrusted with enforcing the Acts, and who are not concerned with protecting this or that trade swindle, but are public servants, paid to protect the public from fraud, will be put forward and thoroughly considered. We hope also that there will be no burking of any evidence that may be offered the committee as to the encouragement that the incapacity of the Somerset House chemists has given roguery. It is a significant fact that, with few exceptions, the dealers in food stuffs examined have praised these officials, for reasons which are too obvious to need comment. The Government chemists' incapacity to analyse articles of food correctly is at the bottom of the widespread adulteration that exists in the United Kingdom, and unless this is made plain the enquiry will be void of real public benefit.

"THE BRITISH MEDICAL JOURNAL" ON PURE BEER AND SPIRITS.

THE last issue of our contemporary affords some curious reading. It is not very long since a public analyst gave a scathing exposure of its peculiar views on beer through our columns. It, however, like the boy in "Great Expectations," who thought he could fight, comes up smiling; and utters the same old nonsense, as though it were not the thinnest of special pleading. Under the title "Temperance and Pure Beer," it says:—

"Why is the public-house an evil? Because the liquor retailed therein is bad, because the "four arf" is a chemical compound as often as not, and the stout receives the rinsings of glasses and other vicious adulterants. Compel the publican to sell pure and light beer and the temperance problem is solved." So says the *Pall Mall Gazette*. But will it be good enough to produce its facts? We unhesitatingly and wholly deny the statement. It has been made by the Bishop of Chester, who made no attempt to support it when challenged; by the Bishop of London, who promised to furnish an authority when he had time, but that is a year ago, and he has not yet had time. Now it is repeated as though an accepted fact by that very able journal the *Pall Mall Gazette*. It is a pure fabrication of the drinking party. We repeat that people get drunk because they drink, and not by reason of the badness or the adulteration of their drink. There is little or no adulteration of spirits or beer. None, anyhow, which can be considered harmful or which produces intoxication. They are now and again watered, but it is not the water which intoxicates. We repeat, will the *Pall Mall* furnish its evidence?"

We do not see why the *Pall Mall* should take the trouble to furnish its evidence, seeing that the very issue of the *British Medical Journal* which prints the above nonsense contains the following very striking condemnation of the *British Medical Journal's* belief by that journal's Paris correspondent, who says:—

"Professeur Lannelongue stated in the Chamber of Deputies, in the course of the recent debate on hygienic drinks, that the increase of alcoholism and the adulteration of alcoholic drinks threaten to be serious dangers. 'The integrity of the human species is at stake,' said M. Lannelongue, and this takes precedence of any financial consideration. The name of 'hygienic drinks'

should be reserved for beverages that are not made unwholesome by adulteration and 'doctoring.' When *eau de vie* was largely consumed acute alcoholism was the principal form met with. Death speedily overtook the drunkard; such cases were rare. Occasionally cerebral trouble occurred. In 1855 the supply of pure alcohol was inadequate to the demand; the products of beetroot and starch replaced it; the consumption of so-called alcoholic drinks reached the proportion of 4 litres a day a head. *Suicide and madness increased in the same proportion.* One-fourth of the patients in hospitals and two-fifths of those confined in lunatic asylums are victims to alcoholism."

Exactly so; Mr. Gladstone's abolition of the malt tax enabled the brewer to use sugar, rice, and chemicals in place of malt and hops; an Inland Revenue body of work-shirkers and incapable chemists enable the distiller to use potatoes, Indian corn, damaged grain, dates, or whatever trash he chooses for whisky, and the *British Medical Journal* is stupid enough to say that such spirit is not adulterated. Those who know what good whisky is may well smile at such statements, for they know that the stomach, a better guide than the chemist's test tube, loathes the one as adulterated, producing headache and nausea, whilst, to use a common phrase, there is not a headache in a gallon of genuine John Jameson or Lennox's pure malt. But then, from its published analyses, every expert is well aware that the *B. M. J.* knows precious little about foods or drinks.

WHAT IS THE LAW AS TO COPPER IN TINNED PEAS?

In Bristol, copper in peas is held to be no offence, whilst in Edmonton the magistrates imposed a penalty upon a firm of the highest standing for vending an article which, being in a tin, afforded them no possible means of knowing if it was contaminated with copper or not. The question is of such great importance to grocers everywhere that we hoped the defendants would have appealed against the decision, as they intimated at the time of hearing would be the case, because there would then have been settled what is, and is likely to continue to be, an irritating problem, viz., Is the use of copper for the colouring of peas an offence against the Adulteration Acts? Again, as to health aspects, there was so much conflicting testimony at the trial that from the point of view of public health the matter ought to be thoroughly threshed out. We understand, however, that the appeal has been abandoned, which, considering how costly it would be, is not surprising, for, after all, it is a great deal to expect that a private firm shall fight out a question of the healthfulness or otherwise of an article of food which the Government allows to be imported without any supervision whatever.

On February 21, at Edmonton Petty Sessions, before Mr. Alderman Latham and a full Bench of Justices, Messrs. Kearley and Tonge, grocers, of 186, Fore-street, Edmonton, were summoned at the instance of the Middlesex County Council for selling a certain article of food, to wit, a tin of green peas which were coloured or stained by the aid of copper to the extent of seven-tenths of a grain per pound, thereby rendering them injurious to health.

Mr. A. H. Bodkin, barrister, instructed by Sir Richard Nicholson, appeared to prosecute, and Mr. Walter Beard, of Basinghall-street, defended.

Mr. Bodkin, in opening the case, said that they were proceeding under section 3 of the Sale of Food and Drugs Act, 1875. The defendants were the well-known firm of Kearley and Tonge, who carried on a very extensive business in various parts of London. On January 10 the inspector to the County Council, Mr. Arthur L. Bridge, caused to be purchased at the defendant's branch shop, 186, Fore-street, Edmonton, a tin of green peas, for which he paid 7½d. The tin contained about 1lb. of peas. A portion of the contents

was sent for analysis to the County analyst, who gave a certificate that the sample contained a quantity of copper equal to .7 of a grain per pound, which was equal to 2.75 grains of sulphate of copper. He (Mr. Bodkin) should show that the copper was used to preserve the greenness of the peas, and that it was poisonous and injurious to health. It could not be denied that sulphate of copper did great harm when taken into the human system. From 5 to 8 grains acted as an emetic, and a person taking a portion of these peas, which contained sulphate of copper, would suffer from pain in the stomach, sickness, colic, diarrhoea, and if the person continued their use the symptoms would become chronic. Though they were dealing with a single case the importance of the case could be best judged by the fact that there was a very extensive sale of the article. The counsel pointed out that if it was necessary to colour the peas a very small quantity of copper was sufficient or needed, one-sixth of a grain being quite sufficient to make them keep their colour.

Mr. Arthur Liddall Bridge, the inspector, having proved the purchase, was cross-examined by Mr. Beard, and he said though he knew copper was used to colour the peas he did not expect to find any in the tin purchased. He had known peas that were so coloured; some were coloured by a solution of chlorophyll. Witness was not aware when he took out the summons that a case was pending at Bristol, and that it was dismissed after a lengthy hearing during which many experts were examined.

Mr. Edward Bevan, the County Analyst, stated that he had analysed the sample, with the result stated in the certificate. He had no doubt the peas were treated with copper to give them a colour. Sulphate of copper was an irritant poison, and would be injurious to health. Copper in any form would be injurious. Cross-examined: He had been the County Analyst for three years, but had never analysed tinned peas before. He was aware it was a matter of great controversy whether the colouring was injurious. Witness admitted that he did not know of any case where injurious results had followed from the eating of such peas. He thought he had heard of such a case. It was a fact that cooks boiled their peas in a copper pan, as it assisted to keep their colour, but it was a most reprehensible practice. He did not know that oysters contained a large quantity of copper—in fact, he rather doubted it. Had the peas been boiled in a copper vessel the copper would not have been distributed over the whole as it was in this case. The amount also would have been less.

Dr. John Frederick Sykes said that sulphate of copper was a poison, and used in medicine as an astringent, and also as an emetic. It was used in cases of narcotic poisoning chiefly, as it was a very rapid emetic. If 10 to 15 grains were taken, the person would vomit it up again. Five grains was a minimum, and if less were taken it would remain in the system, and so would be injurious. His evidence applied to any compound of copper. It was notorious that peas were coloured with copper. Most persons who ate a pound of the peas with the copper in them to the extent of two or three grains would suffer from nausea, and they might possibly vomit. Three grains would cause a child to vomit. If taken continually, the result would be chronic copper poisoning.

Dr. Dupre, lecturer on toxicology at Westminster Hospital School of Medicine, was called, and said if sulphate of copper was taken into the system it would be injurious, and the organs of digestion would suffer, as a person taking 40zs. of the peas might suffer, more especially a child. Witness had examined oysters, but had never found more than .01 of a grain of copper.

Cross-examined: The colouring of the peas produced no increase of bulk; there was no adulteration. Witness said there was a considerable diversity of opinion as to the effect of these tinned peas, but thought it was important to state that this diversity of opinion was or

after legal proceedings had been taken against vendors.

Mr. Beard: Are you aware that there are 16 million tins of these peas imported into this country annually?

Witness: No, and I should not advise anyone to eat such things. (Laughter.) In France a limit of '35 grains per pound is fixed, in Italy it is fixed at one nine-millionth part of a grain per pound, while in Spain it had been prohibited since 1891.

Dr. Luff, official analyst to the Home Office, corroborated the other experts as to the injurious effects of copper salts of any kind, and said that oysters had copper in them, owing to their having been found near to ships' bottoms, and beds in cases had been close to anchors of ships having copper bottoms.

Mr. Beard for the defence argued that there was no case for him to answer. He called the attention of the Bench to the Bristol case, which was in all points like the present one, where, after a hearing extending over several days, the magistrates dismissed the summons. In his opinion this was not sulphate of copper at all. The defendants were a highly respectable firm of grocers. Mr. Bodkin interrupting, said there was not the slightest suggestion made against the character of the defendants, who were a most respectable firm carrying on a large business in the fairest manner.

Mr. Beard said the hands of the defendants were strengthened by the decision at Bristol, where experts from all over the country gave evidence, after hearing which the case was dismissed. Not one of the witnesses who had been examined that day on behalf of the prosecution could point to any single case where it was proved any injurious effects had been caused.

If it was true, as suggested, that the article was poisonous, then let the State prohibit the importation, but it seemed to him most unfair to make the innocent retailer suffer for what the State allowed to be in the country in millions. He respectfully submitted that there was nothing for him to refute.

The Bench decided to go on with the case.

Mr. Otto Hehner, public analyst for the county of Nottingham, Isle of Wight, etc., past president of the Society of Public Analysts, was called by Mr. Beard. He said he was acting as advising chemist to the defendants, and he analysed a portion of the peas in question. He agreed with the prosecutors as to the result of the analysis, though with the deductions drawn he certainly disagreed. In his opinion no injurious effects would follow the eating of the peas; no record existed in this country or on the Continent (where they are eaten more extensively) of any such injury to health. The quantity found in the sample was larger than usual. Witness had analysed many tins, and the smallest quantity ever found was 1.6 of a grain, which was quite sufficient to colour the peas.

By Mr. Bodkin—If he had known there was such a large quantity of copper present, he should have advised against their sale, because he objected to the use of copper as much as anyone, though the greenness could not be obtained without something.

Mr. Latham—Why object then?

Because I object to my grocer giving physic to me. I leave that to my doctor. (Laughter.)

By Mr. Beard—The copper found in the sample was not soluble, and therefore would not remain in the system. In his opinion it was not sulphate of copper. Copper had been said to be found in the liver of an ox to the extent of 16 grains to the pound; but that was quite exceptional, and that ox had probably been eating copper-ore, or perhaps had been grazing near a copper mine (loud laughter).

Mr. Alfred John Corsley, an associate of Dr. Paul, the well-known analyst, said that he had tried experiments and found that copper was not soluble, and that the quantity found in the tin was absolutely non-injurious, and the experiments went to prove that the copper was passed in the excreta, and not in the urine; in fact, they had examined the excreta of a person and

found copper there. The experiments extended over a week, and they examined the whole of the urine passed during the week and found no copper, but on the fourth they found copper in the excreta.

The Bench retired to consider the case, and on returning said they were of opinion that there must be a conviction, and there would be a fine of 20s. and 20 guineas costs.

Mr. Beard—I ask to have a case stated.

Mr. Bodkin—It is a question of fact, and there can be no case stated; but you can appear to Quarter Sessions.

The Chairman—Unless you suggest a case of law we cannot state a case.

Mr. Beard—I give you notice of appeal to Quarter Sessions.

Then you must find sureties for £100 or two for £50.

Mr. Beard—They shall be forthcoming.

Questions of this character, upon which magistrates give conflicting decisions, and which entail great expense to both prosecutors and defendants, ought to receive careful attention by the Select Committee.

FILTHY ICE REVELATIONS.

DR. A. E. HARRIS, Medical Officer of Health, Islington, says in a report just issued:—"In consequence of information given to me that ice had been removed from a filthy pond in Hermitage-road, Tottenham, I visited the place and found that it was correct.

"The pond is owned by a contractor for the removal of dust for the Vestry of St. Pancras. His dust heap and brick-yard are situated near this pond, and, as a matter of fact, the dust heap drains into it. The pond is also largely used in the neighbourhood for drowning cats and dogs, and I need not say that the water is foul beyond description.

"The owner or agent of this pond sold his ice (about three tons) to a man living at St. James's-road, who is a manufacturer of ice creams, and who bought it for the purposes of his trade.

"Other information reached me that an Italian, living at Andover-road, was in possession of a large quantity of ice, which he had obtained from the Regent's Canal. I, therefore, proceeded to these premises and formally seized two lots of ice, and next morning sent them, with my certificate, to the magistrate (Mr. Horace Smith) sitting at the Clerkenwell Police-court. He, having carefully considered the matter, declined to grant an order for its destruction, as, in his opinion, the Act did not deal with this matter, but only with putrid food. He, however, I am informed, expressed the opinion that the Islington Authorities could not have done anything else than seize such ice. Indeed, this is very apparent, seeing that some of the ice actually contained portions of the skin of a dog, which had been drowned in Mr. Williamson's pond.

"Since writing the foregoing, I have received information of another man, who has taken ice from the Regent's Canal, having sold the filthy stuff for sick room purposes, but I have been unable to obtain evidence that would warrant a prosecution.

"I have information that at least 200,000 tons of impure ice is now stored in London, and I dread its use in the preparation of ice creams as the summer advances.

"I may add that I had an interview with Dr. Murphy, the London County Council Medical Officer of Health, and he at once communicated with other medical officers of health in whose district the ice is stored.

"I know that some medical officers of health do not consider that there is danger in the use of impure ice in the preparation of ice creams, because it is only used as a freezing mixture which surrounds the cylinder in which they are made. I am not of this opinion, because it seems to me utterly impossible to prevent this filthy stuff, when it has become liquefied, either splashing or

being drawn into the cylinder. I say 'drawn into' because when the cover is placed on the cylinder and the freezing process commences then the air inside is condensed, and, as a consequence, more or less suction is induced, and also because capillary attraction causes it to travel up between the cover and the cylinder.

"I have had two samples of this filthy ice examined by Dr. Frank L. Teed, your public analyst, with the following results:—

Chemical Laboratory,
15, Victoria Street,
Westminster, S.W.,
March 2, 1895.

CERTIFICATE OF ANALYSIS.

Two Samples of Water.

Marked: Regent's Canal, 22/2/95, and Hermitage,
22/2/95.

Sealed: Vestry Seal.

From: Vestry of St. Mary, Islington.

The above Samples showed on Analysis:

	Regent's Canal, grs. per gallon.	Hermitage, grs. per gallon.
Free Ammonia	0.0476	0.0392
Albumenoid Ammonia	0.0568	0.0392
Chlorine	1.80	1.90
Equivalent to Common Salt	2.96	3.13
Total Solids	13.00	12.50

Much charring on ignition of solid residue.

Both these waters are very foul and absolutely unfit to drink. Their consumption would be dangerous to health.

FRANK L. TEED.

"I may add that when I learned that some of this ice had been sold for sick-room purposes, I made several efforts to buy some, but without success. The man, suspecting something was wrong, became on his guard, and would not sell any more.

"In my opinion, after the revelations of this winter, it should be made a punishable offence to use impure ice either for the preparation or the storage of food, or in the manufacture of food products. There is little doubt that this ice will find its way into the fish shops and places where it is required for cooling purposes. It is not pleasant to think of its being served up around one's butter; and yet such a thing is not without the bounds of probability."

SANITAS V. CARBOLIC.

In a report just issued to the Islington Vestry, Dr. Harris, Medical Officer of Health, says:—"It was clear to every person that when this Committee decided to distribute 'Sanitas' instead of Crude Carbolic Acid, a deadly poison, that they only substituted a non-poisonous and most useful disinfectant for a highly-dangerous and absolutely useless one for sick room purposes. It was not miscible with water, was highly corrosive, and, consequently, could not be used for sprinkling rooms, wetting sheets, or for the many other purposes for which disinfectants are employed in the sick room."

ADULTERATION PROSECUTIONS.

MILK.

At Spelthorne, Arthur Constable, of 4, North-lane, Teddington, was summoned for selling new milk adulterated with 10 per cent. of added water.—William Randall, assistant to Mr. Walter Tyler, an inspector under the Food and Drugs Act, proved purchasing a pint of the milk at the defendant's shop and paying 2d. for it.—Mr. Tyler produced the analyst's certificate, showing that it contained 10 per cent. of added water, but added that he had taken samples from the defendant before which turned out to be good.—Defendant pleaded that he bought the milk from a Mr. Richardson, of the Bittoms, Kingston, and that he sold it just as he got it.

—Mr. Tyler mentioned that he had taken a sample from Mr. Richardson on the same day, which was not adulterated. A fine of £1, including costs, was imposed.—John Clements, 5, High-street, Hampton Wick, was summoned for selling a pint of new milk from which 12 per cent. of its fat had been extracted.—Defendant pleaded not guilty.—Mr. Tyler said he bought the milk at the defendant's shop and had it analysed by the Public Analyst, who certified 12 per cent. of the fat had been extracted.—Defendant said he purchased the milk from a dealer at Semley, where he had been dealing for four or five years. He put in a certificate signed by an analyst named Charles Gregory, which gave a more favourable analysis than that of the Public Analyst, but the Chairman said they could take no cognizance of that, as they did not know who Charles Gregory was.—Previous convictions and fines of £5, 30s., and 20s. were reported against the defendant, who was ordered to pay another fine of £5, including costs.—Defendant paid the money and said, "Well, gentlemen, I was innocent as the child unborn."

At North London last week, Amos Philpot, in the employ of Farthing and Co., of the Canonbury Dairy, was summoned for selling milk from which 7 per cent. of the original fat had been abstracted. The Middlesex County Council were the prosecutors, and Mr. A. L. Bridge, inspector under the Food and Drugs Act, proved the purchase of the samples, and also produced the certificate of the analyst. Mr. Solly, manager to the company, produced another certificate from Dr. Redwood, an analyst, which stated that the milk had so deteriorated as to defy proper analysis, Mr. Solly added that the company had been in Canonbury for nineteen years, and had had many samples taken, but had never before been summoned. In reply to questions from the magistrate, it was elicited that the prosecutor's sample was analysed on the day it was taken, and that submitted to Dr. Redwood 24 hours later, which the magistrate considered a reason for the alteration in the gravity. Mr. Paul Taylor added that it was not a bad case, and fined the defendant only 20s and 12s 6d. costs. The inspector magnanimously said he would not ask for the extra fee for the attendance of his analyst.

At Hythe, on June 13, John Cordey, dairyman, of Hythe, was summoned for selling milk not of the quality demanded. The analyst's certificate showed that the sample consisted of 84 parts whole milk and 16 parts entirely deprived of cream. Fined 10s. and 12s. costs.—Henry Morgan, of West Hythe, was similarly summoned. In this case the certificate showed 25 parts of whole milk and 75 parts entirely deprived of cream. A fine of £1 10s. and 12s. costs was imposed.

A DISTRICT COUNCILLOR'S MILK — At Newcastle-under-Lyme, on the 17th of June, a summons taken out by Mr. E. W. H. Knight, inspector under the Food and Drugs Act, was heard, the defendant being John Colclough, of Church Farm, Talke, who was charged under Section 9 with selling milk which had been altered so as to injuriously affect its quality, without making a disclosure of the fact to the purchaser. Mr. Knight appeared for the prosecution, and Mr. J. J. Nelson defended.—Mr. Knight said that a number of samples of milk were taken at Talke on the morning of Sunday, May 5, in consequence of a letter written by Mr. Nelson, as clerk to the District Council of Audley, and the defendant, for whom he now appeared, was a member of the Council.—William Gifford, deputy inspector, said that on purchasing samples from the defendant he said he did not expect him that day. He had moved the resolution on the Board, but it was another part of the world of which the complaint was made.—The certificate of the county analyst showed that 14 per cent. of the cream had been abstracted from the sample.—Mr. Wilson denied that there had been any interference with the quality of the milk, and raised the defence that as the sale was an infraction of the Lord's Day Act the present proceedings were irregular. The magistrates overruled the objection.—During the cross-examination of the defendant Mr. Knight said that out of twenty samples taken at Talke that morning the defendant's was the only one which was wrong.—The magistrates imposed a fine of 20s and costs, and refused an application by Mr. Nelson to state a case for an appeal.

At Hull, on June 14, Joseph Howes, of Preston, was summoned for selling a pint of milk which had been adulterated with 12½ per cent. of added water.—Mr. Duncan (Town Clerk's Department) supported the summons, and called Inspector Baldock (Inspector of Nuisances), who deposed to buying a pint of new milk from the defendant in Barnsley-street. On submitting it to the Borough Analyst, it was found to be adulterated with 12½ per cent. of water.—Fined £3 and costs.—William Johnson, milk-dealer, Crescent Villa, Holderness-road, was summoned for selling milk which had been deprived of 15 per cent. of its natural fat.—Inspector Baldock having deposed to purchasing the milk and submitting it to the Borough Analyst, their Worship inflicted a fine of 20s. and costs.—Thomas Walker, farmer, Briadley's Farm, Howden, was summoned for adulterating milk with 10 per cent. of added water on the 13th May.—Mr. Worthington (Mr. J. H. Green) defended.—Inspector Baldock said that he purchased a pint of milk from L. Simmons, trading as the Granville Dairy Company, 8, Portland-street, and it was certified to be adulterated with 10 per cent. of water. The milk was obtained under contract from the defendant.—Mr. Worthington admitted the contract to supply the milk, but denied the adulteration.—Fined 40s. and costs.

At Hyde, last week, James Pearson, farmer, Matley, was charged under the Sale of Food and Drugs Act, with offering for sale milk not containing the required amount of nutriment. Mr. Joe Cooke appeared for defendant. Samuel Lea, inspector under the Food and Drugs Act, stated that on Sunday morning, May 5th, he saw defendant's milk cart opposite Mr. John Broadbent's shop. A girl named Jessie Pearson was in the cart, and he asked her to sell him a pint of milk. She replied, "Wait a minute, until I have served Broadbent, and I will get something so that you can drink it." She then went into Mr. Broadbent's shop with some milk. Upon her return he again asked for some, and she sold him some, obtaining it from the same can as Mr. Broadbent's. He paid 1½d. for it. After the purchase he informed her that he was an inspector, and that it was his intention to submit a sample of the milk to the public analyst. He asked her if she would have it divided. She replied, "It's skim-milk, you know." He asked her why she had not told him that before, and she replied that she did not know what he wanted it for. He divided it into three portions, signed and sealed them, and left one portion with her. He sent another portion to the public analyst, and kept one. It had been robbed of 20 per cent. of fat. Mr. Joe Cooke asked if she was not going to give him more milk, and he said he only wanted sufficient to fill a bottle?—The Inspector said he only wanted a pint, and some people gave rather more than the measure.—Mr. Cooke asked if the dry season would not have a great effect on the milk, causing the food of the cows to be poor, and consequently the milk?—The Inspector replied that that was a question on which analysts did not agree. He did not think it did. Poor food made the cows poor, but not the milk. He admitted that if the "droppings" were not taken it would make the milk poor.—Ed. Paddey, Assistant-Inspector, corroborated the evidence of the last witness.—John Broadbent, grocer, 31, Mottram-road, deposed to being supplied with milk by Jessie Pearson on the day named. He had no idea that it was skim-milk. He had had milk from them for about two years, and it was the best milk procurable.—Jessie Pearson deposed to going out with the milk on the date named. She took about two dozen quarts of new milk, and about four or six quarts of skim-milk in a smaller can. She had sold all the new milk, and was then selling the skim-milk. The Inspector asked her for a pint, and she said she would give him it when she came out of Broadbent's shop. She came out, and was serving him, when she said she had nothing but skim-milk. He said she should have told him that before. She thought at first he wanted it to drink, and she was giving him a quart, though he asked in the first instance for a pint.—The Bench considered the offence proved, and fined defendant 5s. and costs.

ELIZABETH DEYMAN, Union-street, was charged with selling milk from which 20 per cent. of fat had been abstracted.—The Inspector deposed to going into defendant's shop on May 20 and asking for a pint of milk. After the purchase he informed the young man in the shop that he was an inspector. He divided the milk into three parts and left one with the young man. As a result of the analysis the milk was found to be robbed of 20 per cent. of cream.—A fine of 5s. and costs was imposed.

WRIGHT SWANN, farmer, Hattersley, was charged with selling milk adulterated with three per cent. of water.—Mr. S. Lea said that on Sunday, May 5, he saw the defendant at the corner of Ridlington-lane. He bought a pint of milk and paid 1½d. for it. He then told defendant he was an inspector, and asked him if he should divide the milk. He said yes, and witness divided it, leaving one portion with defendant. The certificate of the public analyst stated that the milk was adulterated with three per cent. of water.—Cross-examined by Mr. Cooke: He asked for milk, not milk and water or skimmed milk. He admitted having taken a previous sample and found it all right.—Mr. Cooke, in defence, said there was no doubt the offence was committed, but was it done intentionally? The bad weather also made a difference, as in the other case.—Defendant was fined 5s. and costs.

Wm. Birch, 133, Back-lane, dairyman, was charged with a similar offence.—The Inspector deposed that on Sunday, May 5, he saw defendant in Market-street, and asked for some milk. He received a quantity of milk, and paid 1½d. for it. He then informed defendant that he was an inspector and took it for analysis. Defendant said, "You can take it all. I am not frightened of my milk." Witness then divided it, sending one portion to the public analyst, the analysis showing that it contained five per cent. of water.—Fined 5s. and costs.

Robert Wilcockson, of Hyde Hall Farm, was charged with selling adulterated milk.—The Inspector deposed to purchasing a pint of milk from defendant's son, in Mill-lane, afterwards telling him what it was for. It was submitted to the analyst, and the result showed that it was diluted with 10 per cent. of water.—Mr. Cooke, for the defence, submitted that the milk had been bought that morning from another person, and had not been tampered with.—A similar fine was imposed.

At Bailieborough, Sergeant Keane, R.I.C., Inspector of Food and Drugs, summoned Robt. Flack, contractor, for supplying to Bailieborough Workhouse buttermilk which proved on analysis to be adulterated with 20 per cent. of added water, in addition to 25 per cent. allowed for churning purposes. He produced certificates of six previous convictions.—Defendant: As I stated before, nobody could do more to send the milk as pure as possible, and this milk was taken on the last day of my contract. No milk can be analysed after being six days churned.—Mr. Irwin, R.M.: Your

profits must have been very large to stand those fines.—Mr. Gibson: He has paid more in fines than the milk was worth.—Defendant: My conscience is clear that a glass of water was not put into the milk except what was required to churn it. I am ashamed in the neighbourhood with all the cases that were brought against me.—Mr. Gibson: The Local Government Board have requested the Guardians not to give a milk contract in future to persons who have been fined.—Defendant: This is the last case that can be against me, for my contract has expired.—Mr. Irwin: You will have to pay a fine of £1 and costs.

Sergeant Keane, R.I.C., summoned Joseph O'Reilly, contractor to the Bailieboro' Workhouse, for supplying new milk which Sir Charles Cameron certified to be adulterated with 10 per cent. of added water.—Complainant gave evidence as to taking a sample of the milk on Apr. 30, and sending one of the three parts, into which it was divided, to Sir Charles Cameron, and getting a certificate from him.—Mr. Chambers: I want to have it proved that he is the public analyst of this county.—Mr. Irwin: We have knowledge of the fact that he is, and it is unnecessary to prove it. You might as well ask me to prove my appointment as a magistrate.—Complainant, cross-examined by Mr. Chambers, stated that the milk was in two cans, which were brought in from a cart. The Master of the Workhouse was present. Witness had been Inspector of Food and Drugs for three or four years, and during the last nine or ten months took several samples of the milk supplied to the workhouse by defendant for analysis, and only in the present case was it certified to be adulterated.—Joseph O'Reilly, in reply to Mr. Chambers, deposed that he had been a milk contractor to the workhouse for two years, and no fault was found before this. On Apr. 30 the milk was sent from the house as usual; after getting the summons on May 16 he forwarded the sample given to Professor Tichbourne for analysis. Mr. Chambers then read Professor Tichbourne's certificate, dated May 27, which stated that without allowing anything for deterioration by age, the milk appeared to have been adulterated with five per cent. of added water. Defendant said, on the receipt of the certificate he wrote immediately to Professor Tichbourne to know the percentage milk would deteriorate from April 30. Mr. Chambers read Professor Tichbourne's reply stating that it would be impossible to say the exact amount of deterioration, but making allowance according to the scale of Somerset House, London, he had very little doubt that the sample was pure milk, but poor. Dr. Ryan—I would like to have the third sample sent to Somerset House. The case was adjourned for a month and the third sample was ordered to be sent to Somerset House, London.

At Highgate Court, on June 17, George Cornish, milkseller, in the employ of C. H. Chress, of East Finchley, was summoned for having sold to Arthur Liddall Bridge new milk adulterated with 8 per cent. of added water, and from which milk 15 per cent. of fat had been abstracted. Mr. Ricketts defended. Mr. Bridge conducted the case for the County Council of Middlesex. Fined 20s. and costs.

DANIEL HOLLOWAY, of 62, Archway-road, Highgate, was summoned for having sold to Arthur Liddall Bridge new milk from which 10 per cent. of fat had been abstracted. Mr. Bridge conducted the case for the Middlesex County Council. Mr. W. H. Ricketts defended. Mr. Bridge gave evidence and read the certificate, which stated, in addition to the abstraction of fat, that colouring matter had been added. Mr. Bridge (cross-examined by Mr. Ricketts): Can you say what the total amount of fat in this sample was? Mr. Bridge: I positively decline to answer any question upon the analysis. Mr. Ricketts: But do you know something of analysis? Mr. Bridge: A little. Mr. Ricketts: But you also know that if milk be left in the can and be continually served from the top that the cream gets less and less as the milk is sold. Mr. Bridge: Yes, that is so, but the addition of milk, or rather separate milk, would hasten the use of the fat globules and so account for the state of things here.—Mr. Ricketts: I did not ask you as to the addition of separated milk.—Mr. Bridge: No, but that is my answer.—Mr. Ricketts: Is not this 15 per cent. of fat a very minor matter.—Mr. Bridge: No. Speaking personally as a consumer, as also judged comparatively with milk in Yorkshire, I must say that there is very little milk in London that is absolutely pure milk.—Mr. Ricketts: You say on the certificate that colouring matter has been added.—Mr. Bridge: That is so.—Mr. Ricketts: Are you aware that most of the milk in London is artificially coloured?—Mr. Bridge: To a great extent the practice obtains, and it is a most reprehensible practice too.—Mr. Ricketts: But do you say that the practice does not obtain in the north of England?—Mr. Bridge: I never saw it before.—Mr. Bodkin (magistrate): But the addition of colouring matter is adulteration?—Mr. Bridge: Most certainly, and especially when the reason for its use is taken into consideration, which is really to give the milk the appearance of that from Jersey cows, which is a falsity.—Mr. Bodkin: What is the colouring matter generally used?—Mr. Bridge: Annatto.—Mr. Bodkin: That is the colouring matter from the carrot?—Mr. Bridge: Yes.—Mr. Bodkin: And is therefore harmless.—Mr. Bridge: I should not like to say that, because it renders poor food of rich appearance to the eye and so deceives.—Mr. Bodkin: Is that your case, Mr. Bridge?—Mr. Bridge: It is, sir.—Mr. Ricketts, in defence, said the matter was not of great import, the adulteration being small and the loss of fat small too. He called the defendant, Daniel Holloway, to prove that he sold the milk exactly as he bought it. Mr. Holloway gave evidence to the

effect that the milk was in the same state when sold to the inspector as when he bought it.—The Bench inflicted a fine of 20s. and 10s. 6d. costs of analysis and court costs.

HENRY PIDGREN, of Finchley, was summoned for that he sold to the said Arthur Liddall Bridge milk containing five per cent. of added water. Mr. Ricketts defended. To pay 10s. 6d. the costs of analysis and court fees.

William Nolan, 20, Cato-street, Birmingham, was fined 40s. and costs, on June 14, for selling milk with 13 per cent. of added water; Louisa Horton, 150 Grosvenor-street West, was fined 10s. and costs for selling milk with 24 per cent. of fat less than was natural; and James Roper, 92 Morville-street, was ordered to pay 40s. and costs for selling milk that had had the cream skimmed from it and 10 per cent. of water added.—The defendant in the latter case said he did not think he was doing wrong so long as he sold the milk as "skimmed." He sold it at 1½d. per quart.—Mr. Ryland: The Water Works Company can supply water better than you.—Defendant: It's better than Corporation water.—In each case Mr. Parker prosecuted on behalf of the Health Committee.

BUTTER.

AT Manchester, on June 13, before Mr. Yates, Q.C., Marion Kemp, of Urmston, was charged with selling adulterated butter. Mr. Brooks appeared on behalf of the police; Mr. Boardman was for the defendant; and Mr. Farrington represented a firm from whom the defendant had bought the article, Messrs. Doherty and Company, Limited, Manchester.—Inspector Keys purchased from the defendant in April, as best butter, something which contained 11½ per cent. "of water, and upwards of 60 per cent. of fats other than butter."—Mrs. Kemp said that she had been in the habit of selling the best butter only, and she bought this in question from Doherty's at 10½d. a pound. Her price was 1s. 1d. She sold it exactly as she bought it.—Doherty's manager said that his firm had done nothing to the butter, and by invoicing it as Kiel he understood it to be pure butter.—Mr. Boardman: And do you still contend that this butter you sold her is pure?—Witness: I cannot understand how it can be otherwise.—Mr. Yates: In face of the analysis?—Witness: I cannot understand it. It is a mystery. We have done nothing to it.—Mr. Yates: Does not margarine come to about the same composition as shown by this analysis?—Witness: Margarine is supposed to be all fats.—Mr. Boardman said that if the Bench determined to fine the defendant, he hoped it would be a small one.—Mr. Yates said that it was clear that the defendant had not sold "butter," but something else, but who "did it" was a mystery. The defendant would be fined 20s. and costs, in all £4 odd.—The money was paid.

AT St. Albans, on June 9, Amos Hopkins, of Park-street, was summoned for selling one pound of butter, which was not of the quality and substance required in accordance with the Act, such butter being adulterated with 75 per cent. of margarine, on May 18. There was a further charge of selling margarine without being properly labelled.—Defendant did not appear, but was represented by his wife.—Mr. W. G. Rushworth, Inspector of Weights and Measures, prosecuted, and called Lilly Messider, who stated that she lived at Watford. On May 18 she went into the shop of the defendant at Park-street, and asked for a pound of butter for a shilling. This was in the afternoon, and Mr. Rushworth was with her, but did not go into the shop with her. Mrs. Hopkins asked her what she wanted, and she said, "A pound of shilling butter." She gave witness the butter, and she went to the door and gave it to Mr. Rushworth. Mr. Rushworth then came into the shop. She paid 1s. for the butter. There were no remarks passed in the shop.—Mrs. Hopkins interposing: "There were. I asked you who the butter was for."—W. G. Rushworth stated that on May 18, about 3.30 p.m., he instructed the previous witness to go into the shop of defendant at Park-street for a pound of butter. He received it from her at the door of the shop, and he immediately entered and saw the wife of the defendant. He told her that he had purchased it for the purpose of analysis, and he offered to divide the butter as is the usual course under the Act. The offer was not accepted, Mrs. Hopkins answering that it was of no use as they had plenty more of the same sort, and that it was not pure butter. They always sold it as margarine and not as butter. He told her that he sent in for butter, and butter was asked for. He also called her attention to the fact that it was not properly labelled, and that there was no mark on the paper. Mrs. Hopkins replied, "I served it from that dish, which is marked margarine." Witness replied, "Yes, but I did not send for margarine." At this point of the conversation the defendant himself came in and said, "You have not done it fair by sending a girl in. You should have come yourself, and you would have got the right stuff." He told defendant he was going to have the butter analysed, and he had since done so. The analyst reported that it contained 75 per cent. of margarine, and 25 per cent. of butter. Margarine of that kind would cost between 6d. and 8d. per lb., and he had purchased pure butter at 10d.—Mrs. Hopkins: It cost me 10d. per lb., and I can't sell it for less than 1s.—Mr. Toulmin: Have you previously warned them? Witness: Yes, three years ago they were cautioned, and two years ago they were summoned.—Mrs. Hopkins: I have the papers, but I made a mistake.—The second charge was then proceeded with, and Lilly Messider gave

evidence to the effect that there were no marks on the wrapper.—Mr. Rushworth said he saw the defendant and told him he should take proceedings under the Margarine Act, and defendant replied that he had the papers but they were not used in this instance.—The Chairman said that in this case the Bench had decided to convict, and as the defendant had been previously warned, they had decided to take a much stronger view than they otherwise would have done. In the first case he would be fined £2, and costs £1 2s., or in default they would distrain; and in the second charge £1, and costs 11s. 6d.—Mrs. Hopkins: I think you have been rather hard on me, but it shall not occur again.

Alfred Tansley, of Park-street, was summoned for a similar offence, and did not appear. Lilly Messider stated that on May 18 she went into the shop of the defendant, and saw him, and asked for a pound of shilling butter. Defendant gave her the butter, and she paid for it. She took it to the door and gave it to Mr. Rushworth.—William G. Rushworth said at 3.50 p.m. on the day in question he received the butter from the last witness at the door of the defendant's shop. He then went to Mr. Tansley and told him that he wanted it for the purpose of analysis, and that he was willing to divide it. Defendant replied that it was no use having it divided as it was margarine. He pointed out a dish at the end of the room which was labelled. Defendant remarked that he thought there was something wrong when he saw the girl standing outside the door. He had since had it analysed by the public analyst, and it contained 50 per cent. of butter and margarine in equal proportions. Defendant added at the time that he could not attend the Court, but asked witness to remember to say that the dish was labelled.—Fined £1, and costs £1 2s., in the first case, and 10s., and costs 11s. 6d., in the second.

A FALSE WARRANTY.—At Ripley, on June 17, Samuel Fletcher, of Ripley, was charged with selling ½lb. of butter at Ripley on March 20, which was not of the nature, quality, and substance demanded by the purchaser. Mr. Searby, of Ilkeston, prosecuted, and Mr. Muir Wilson, of Sheffield, defended. The evidence was to the effect that defendant sold to a man named Marples, acting at the instance of Colonel Shortt, inspector under the Act, ½lb. of butter, for which he paid 5d., and which, when analysed, was found to contain only 73 per cent. of butter fat, instead of 80, and 20 per cent. of water.—Defendant said he asked for a written warranty of the butter, which was sent by post after the order had been given to a firm in Sheffield. There were two invoices received, which showed that butter had been ordered to the amount of £4 7s. 7d. and £2 3s. respectively.—After a long hearing, the Bench dismissed the case, but Mr. Searby applied for a summons against the firm in question for giving a false warranty, and this was granted.

COFFEE.

AT Birmingham, on June 14, William Bullas, of the Birmingham Industrial Co-operative Society, Highgate-street, was summoned for selling coffee adulterated with 20 per cent. of chicory. Mr. Parfitt defended, and called witnesses, who said that the coffee had by accident been placed in a tin, and the two had become mixed. The bench said that no doubt a careless mistake had been made, but it was curious that in all these cases the mistake was against the purchaser. A fine of 20s. and cost was imposed.

AT Ilkeston, on June 13, Harriett Richardson, of Sandiacre, who did not appear until after the case was disposed of, was summoned by the inspector under the Food and Drugs Act, Captain Sandys, for selling as coffee a mixture containing 90 per cent. of chicory, at that place on May 2. A fine of 10s. and 23s. costs was imposed. Later on the defendant appeared and stated that she bought it as pure coffee, and sold it as such. She was told she would have to pay.

BEER.

AT Lambeth, on June 17, Robert James Mitchell, of Westminster Bridge-road, was summoned by the Excise for diluting beer.—Mr. Dennis appeared in support of the summons, and Mr. H. J. Sydney defended.—For the defence it was stated that at the time the dilution took place the defendant was at Bournemouth, the business being left in charge of a manager, who had since been discharged.—Mr. Hopkins imposed a fine of £20.—Thomas Charles Caffin, of Albert-road, Peckham, was also fined £25 for diluting beer.

SPIRITS.

AT Durham, on June 12, Sarah Firby was summoned under the Food and Drugs Act for selling a certain quantity of rum which was not of the quality and substance demanded, at Butcher Race, on the 11th inst.—Mr. Scott Elder, Inspector under the Food and Drugs Act, appeared for the prosecution, and said the rum was 32.08 degrees under proof, 25 per cent. only of adulteration being allowed. He had had considerable difficulty in obtaining samples for analysis, and had been obliged to send a young woman to make the purchase for him.—Elizabeth Wilson said on the 11th ult. from instructions received from Mr. Scott Elder, she purchased a pint of rum off defendant, for which she paid 2s. She handed the rum

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over to the inspector.—George Wilson, assistant to Mr. Scott Elder, said he received a sample of rum to take to Darlington for analysis. Witness had tried to purchase rum at defendant's house on several occasions, but had failed. Defendant told him on one occasion that she had none in the house.—Defendant was fined £2 and costs.

DRUGS.

At the Leeds West Riding Court on June 11, Mary Whitley, widow, grocer, St. Bernard's, was charged under the Food and Drugs Act with selling adulterated tincture of rhubarb.—Inspector Quinlan said that on Friday, the 26th ult., he was on duty in the neighbourhood of Gildersome taking samples. At defendant's shop he took samples of butter, lard and tincture of rhubarb. At the request of the defendant the samples were divided, and parts sent to the County Analyst. The samples of butter and lard on analysis proved genuine, but the certificate with reference to the tincture of rhubarb showed that the sample was deficient in alcohol, having a spirituous strength of only two-thirds of that directed by the British Pharmacopia.—Defendant said she had had the stuff over two years in the shop, and she sold very little of the drug.—The Chairman said that the woman had not got a guarantee with the drug when she purchased it, and therefore it was impossible for the magistrates to know its condition at that time. As the costs, which amounted to £1 18s. 6d., were very heavy, the defendant would only be fined 1s. in addition to the costs.

At Ripley, on June 17, Kendel Daykin was charged with selling 1s. 6d. worth of nitrous ether, which upon analysis was not of the

quality, nature, and substance demanded.—The defendant conducted his own case.—The evidence was to the effect that it was 50 per cent. destitute of the genuine article.—Defendant was fined £1 5s, including costs.—James Waterall, of Loscoe, was charged with selling 4oz. of tincture of rhubarb which was not of the nature, quality, and substance demanded, on Mar. 14.—Defendant said he had kept the article fifty years, and never had any complaint.—Captain Sandys prosecuted.—Defendant was fined £1 6s., including costs.

WATER IN BUTTER.

IN the House of Commons on June 14 Sir Walter Foster, in reply to Mr. W. Abraham as to whether there is any legal standard for the quantity of water in butter, stated that the Committee on Food Products had not yet reported, but, from the tendency of the evidence before them, it appeared that there was no legal standard for water in butter, and that Somerset House had not fixed any such standard. When the committee had reported he hoped the authorities would be better informed in the matter.

DISEASED MEAT.

AT NUNEATON, on June 13, George Frank Farnell, butcher, Church-street, was charged with having, on June 1, in his slaughter-house the carcasses of two beasts for the purposes of sale which were unfit for human food. Mr. Bland appeared for the prosecution, and Mr. Cross, of Birmingham, for defendant. Mr. J. S. Pickering, Inspector of Nuisances, &c., stated that he visited

the slaughter-house and found there two beasts, halved, and ready dressed, apparently for human food. One of them was in a high state of decomposition, being perfectly putrid. The other was moist and not properly set. Defendant told him that he paid 35s. for the latter one, and that it was not intended for human consumption, but for food for pigs. As to the decomposed one, he told him that he had intended that for sale as food for man. The beast was afterwards condemned by the medical officer, and destroyed. Farnell afterwards said that had he known the worst one was so bad he should have not entertained the idea of selling it. Dr. Peacock, M.O.H., stated that one beast was wholly unfit for consumption, and that the head part of the other was also unfit, the animal having evidently had milk fever. Mr. Barratt, M.R.C.V.S., agreed with this evidence, and added that it would have been impossible for the defendant to have seen whether or not the better animal of the two was fit for food until it was dressed. Mr. Cross, for the defence, pleaded that the decomposed carcase was not intended for human food. As to the other one, he drew attention to the evidence of the veterinary surgeon, that it was impossible to tell whether it was fit for food until it was dressed. The magistrates convicted with regard to both carcasses, and inflicted a fine of £15, and costs £3 11s. 6d.

TINNED SALMON POISONING.

A somewhat serious case of alleged poisoning by unsound meat has been reported to Dumbarton Burgh Police. The circumstances are that on Wednesday last Mrs. Rossi, wife of an ice-cream merchant in High-street, ate part of a tin of salmon which she is said to have bought from a local provision store on the previous day. In the evening she complained of illness, and on Dr. Wilson being called, he said the woman was suffering from irritant poisoning, probably caused by eating unsound food of some sort. Rossi himself was not inclined to believe that, and ate some of the salmon himself, in order to show that that could not be the cause. This was on Thursday at midday, and early next morning the man displayed the same symptoms as his wife had previously shown. Both are still suffering from the effects of poisoning, the husband being in a very bad state.

DAIRY FARMERS AND A MILK STANDARD.

At Manchester, on June 14, at the British Dairy Farmers' Conference, Mr. Christopher Middleton said:—

"The Dairy Products Committee of the Central and Associated Chambers of Agriculture recommended a standard of three per cent. fat and twelve per cent. total solids. He considered this standard too high. Theoretically it was a correct one, below which, under ordinary circumstances, the milk of fairly fed cows would seldom fall. Still, if it became the legal standard, he felt convinced that many an honest farmer, with honest cows, honestly fed, might from time to time, from causes entirely beyond his control, find himself called upon to answer a charge of having tampered with his milk. He was strongly of opinion that a standard of 11.5 total solids was as high as it was safe to go, and that the standard for fat should be 2.85. With regard to the importation of frozen milk from Sweden and of fresh milk from Holland, he maintained that it should be stopped until such time as there were the same safeguards against the introduction of disease in the countries concerned as there were in this country."

An interesting discussion followed. Upon the question of the standard of milk, Mr. A. Hailwood (Manchester) said he thought it would be fair to insist upon 3 per cent. of fat.—Mr. B. Upton (Louth) gave his experience, and asked if any one could advise him how to avoid prosecution. He had all his life, he said, striven to earn an honest penny, but he stood there a convicted man, and he thought it was very hard. (Applause).—Mr. P. Clayton said he had been against a legal standard, but now he was for it, and thought 2.85 of fatty matter was too little.—Mr. Froude (Brighton),

speaking as a milk dealer and a milk producer, said he paid a sum equal to his rent for food for his cattle, and he could not guarantee always to supply milk containing 3 per cent. of fat and 12 per cent. of total solids. (Applause).—Mr. Laird (Leicestershire) quoted the prices obtained in Manchester and in his own neighbourhood, and said that the figures showed that the Midland farmers could get more for their milk if they combined, as he thought they ought to do.—Mr. Barham (London) said that if they thought that by adopting a legal standard they would stop the sale of separated milk as new they were labouring under a very great mistake. They should make it a penal offence to sell separated milk as new. Once they did that its sale would almost be stopped. His idea of a standard of fat was that it should be 2½ per cent.

Dr. Niven (medical officer of health for Manchester) said he thought the practice in this city was a very good one. If the quality of milk appeared to be low a sample was taken from the farm, and the degree which the milk was inferior was judged by direct comparison with the milk taken from the cows. That seemed to him to provide a sufficient protection to the farmer. He urged that more should be done to supply milk to consumers in a cleaner and more wholesome condition than it sometimes was, and said he did not understand why they did not sterilise and bottle milk, the same as beer was bottled, because it could be done.—Professor Long described Mr. Middleton's proposal to fix the standard of fat at 2.85 as audacious. Whatever standard was fixed, he said, they would find farmers producing milk below that standard. In America every State had a standard of fat, and in almost every case it was 3 per cent. or more. He suggested that the poor milkers should be weeded out of herds, and that the hours of milking should be altered.—Mr. Nuttall (Leicester) supported a standard of 3 per cent. of fat and 12 per cent. of solids.—Professor Lloyd urged that farmers should satisfy medical men that they were supplying good, pure milk. At present, he thought that medical men were beginning to doubt the advisability of recommending the consumption of milk. With regard to the proposed standard, if they fixed it at the point recommended by Mr. Middleton 5 per cent. of water could be added to milk with impunity. He thought farmers were too sensitive of their honour, when, for fear of being fined although they were innocent, they would allow others to adulterate their milk. He urged that they must live for the public.

OBITUARY.

Dr. William Morgan, Public Analyst, Glamorganshire.

It is only a few days since the Glamorgan County Council extended to Dr. Morgan three months' leave of absence and appointed a deputy analyst, on account of Mr. Morgan's regretted illness. Many members of the council then expressed the very high esteem in which they held the County Analyst, and their hope that he would soon be restored to health. As we go to press we learn of Dr. Morgan's death, which will be regretted by all who knew him. His zeal and skill were appreciated by everyone who had the opportunity of judging, for he spared no trouble to make himself a master of his work. He was enthusiastic and ardent in his profession, and the latest researches of foreign analysts, as well as English ones, were carefully studied by him the moment they were made public. His library was not confined to a few odd volumes of journals rarely read, but was well stocked with the latest work of the best of German, French, and other investigators. It was his thoroughness, his real capacity and painstaking, that made him so invaluable an official to the Glamorgan County Council, and which will make it difficult for them to equal in his successor.



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Food and Sanitation.

SATURDAY, JUNE 29TH, 1895.

THE FOOD PRODUCTS ENQUIRY.

WE prophesied some months ago that this committee would lead to nothing, and told our readers plainly that at the expense of any waste of members' time, or of witnesses' work or convenience, Sir Walter Foster intended to shield the incapable Somerset House gang. Our prophecy has come to pass. Sir Walter Foster goes with some six hundred odd political hacks and adventurers to the game of bluffing the electors, and no committee has met, although announced to meet on Tuesday and Wednesday of this week, because there were not sufficient members obtainable to form a quorum, although they were present in the House. The moment the real evidence affecting adulteration and its suppression came before the committee there happened the psychological moment, carefully led up to by Sir W. Foster, when, although it was arranged that all committees should continue sitting as though there were no Parliamentary crisis, the members of the Food Products Committee, sick of the rot of last session, weary of useless evidence, and glad of any excuse to consign the subject to Hades, left the committee to attend to politics, thus affording an example of how rot begets rot. This fiasco strengthens our disgust at the

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waste of so much valuable time in drivelling last session, and at the delay in taking the evidence of those concerned with the working of the Acts. If any objection were needed, it is a splendid one of how English, Irish, Scotch, and Welsh industries are neglected for political blatherumskite.

MILK ADULTERATION CONVICTIONS AND THE LORD'S DAY.

IN our many years' experience of the Food and Drugs Acts we have heard of curious defences, but the tactics of the gentry who saw Satan's hoof at Leeds in Max O'Rell's inane chestnuts were about the last we thought would be applied to shield adulteration. According to the latest contention it is a crime to listen to Max O'Rell's milk and water, but it is a holy and wholesome thought that milk should be loosed from its cream on the Lord's Day, or that milk and water should be palmed off upon the public on that day, because the sale of milk is illegal between 9 a.m. and 4 p.m. The Lord's-Day-observing King Charles II., in the intervals of morality that afflicted him, was responsible for this Act, which is possibly the reason why he has a statue in the capital, whilst Cromwell has not. However, his lewd, lascivious, lecherous, libidinous Majesty gave the Sunday milk vendor his chance, and our readers may in future prosecutions expect that points will be raised as in the following case.

At Newcastle-under-Lyme County Police Court, on Monday, before Messrs. R. C. Clive, F. J. Stanier, W. Moody, E. Rogers, and the Rev. T. W. Daltry, John Colclough, farmer, of Church Farm, Talke, was summoned under Section 9 of the Food and Drugs Act for selling an article of food (milk) which had been altered so as to injuriously affect its quality without making a disclosure to the purchaser of the fact.—The defendant was represented by Mr. J. J. Nelson, who raised an objection to the information, which was over-ruled.—In opening the case, Mr. E. W. H. Knight, the inspector under the Act, said the samples were taken in consequence of a letter written by Mr. Nelson himself, as clerk to the Audley District Council, and the defendant happened to be a member of the Council. He must

say it was with considerable surprise that he had heard Mr. Nelson start his defence by raising a technical objection. Mr. Nelson also said he had a good defence to the summons on the merits of the case. This raising a paltry technical objection discounted the *bonâ fides* of any defence he might have. The samples were taken on Sunday morning, May 5. Colclough said to Gifford, "I did not expect you to-day, although I was at the Board when the resolution was passed. It was not as to this part that the complaint was made; it was more Wolstanton. It was not intended for us."—William Gifford, assistant inspector, deposed to meeting the defendant about half-past nine o'clock on Sunday at New-road, Talke, and taking samples from two churns of milk. Defendant said he had expected him on the previous day.—In cross-examination, the witness said he could not tell how much milk there was in the churn.—Mr. E. W. H. Knight put in the certificate of the analyst, showing that one sample was deficient in cream to the extent of 14 per cent.—Mr. Nelson contended that there had been no wilful abstraction of cream. Fourteen per cent. was a very small quantity indeed. All milk was not of equal quality and consistency. That given by Cheshire-fed cows would be better than that yielded by cows fed in a colliery district. The herbage in the Talke fields rented by the defendant was injuriously affected by the fumes from the chemical works near. Mr. Nelson was proceeding to quote from the evidence of the medical officer of health for the County of Middlesex, given in a similar case, when Mr. E. W. H. Knight pointed out that in that case a conviction followed, and was sustained on appeal.—Mr. Nelson raised another point. The 5th of May was a Sunday. According to the Lord's Day Observance Act, passed in the reign of Charles II., and still unrepealed, the sale of milk was illegal on Sunday between the hours of 9 a.m. and 4 p.m.—The Magistrates' Clerk (Mr. J. Knight): Then he must be summoned for it as well. Mr. Nelson: That is so; but he cannot be summoned for this offence. Mr. Clive (smiling): Are you going to raise that point?—Mr. Nelson: Yes. It is a novel point, I admit; but in my opinion it is a conclusive answer to this case.—The Magistrates' Clerk: He would be liable to be summoned for selling at all, and also for selling adulterated milk. One offence does not purge another.—Mr. E. W. H. Knight: He (pointing to Mr. Nelson) mentioned Sunday in his letter. (Laughter.) Mr. Nelson observed that he was a sort of Pooh Bah. (Laughter.) Mr. Colclough himself moved the resolution, asking the inspector to take samples of milk, above all on Sunday mornings. It was therefore improbable that he would himself extract the cream from his milk. On the morning in question Mr. Nelson said there was only a little milk in the churn, and was proceeding to argue that the sale of milk being illegal on a Sunday the defendant could not be summoned for the offence, when Mr. Clive said: We shall not allow your objection on that point. The defendant and his wife were called to prove that they did not interfere in any way with the milk. The churn from which the deficient sample was taken was nearly empty. The herbage in a colliery district was inferior to that in the Cheshire county.—In cross examination the defendant said he was surprised to hear that of 20 samples taken on the Sunday morning his was the only one that was wrong. Many of the others must have been taken from Cheshire.—The Bench remarked that the maximum penalty was £30, but they did not think that the case called for a greater penalty than 20s. and costs.—Mr. Nelson asked for cases to be stated on the points he had raised, but the Bench declined, saying they did not think there was anything in them.

It is somewhat presumptuous for ordinary magistrates to say that there is nothing in the legislation of Charles II., and to treat his Act with contempt, considering what our Richmonds, St. Albans, and other worthy Graces owe to their Lord's Day observing ancestor.

THE HOUSE OF COMMONS COMMITTEE ON PETROLEUM OILS.

OUR contemporary the *Daily Chronicle* says: "The Home Secretary has agreed to the re-appointment of the Committee which last year heard evidence on the question of petroleum oils. This year the Committee will devote special attention to oil lamps, about which Mr. Alfred Spencer, chief of the County Council's Public Control Department, gave evidence last Session. About half the serious outbreaks of fire in London are due to lamps. The County Council has no power at present to supervise the kind of lamp used. An improvement in lamps which would lead to a diminution of lamp accidents is urgently required."

This paragraph is a striking illustration of how the press, even in the case of so vigilant and outspoken a guardian of the public well-being as is the *Daily Chronicle*, is hounded in the interests of the American oil gang. Mr. Albert Spencer's evidence of last Session placed the blame of the roasting alive of hundreds of persons in the United Kingdom on faulty lamps, ignoring entirely the true cause, which, as every honest scientific expert knows well, is the murderous "Abel flash point," which enables the American oil monopolists to flood our markets with rubbish, that flashes at nearly 25 degrees lower than is allowed in their own country. It would be, of course, an excellent thing for a few persons if the House of Commons Committee could also be hounded into a prohibition of the use of existing makes of lamps, or the mere recommendation of some particular lamp to which Mr. Albert Spencer might chance to give his approval. It might even be the case that a Spencer approved lamp is ready should such a result be arrived at. For our part, we trust the Committee will go further than the evidence of the "Cordite gentry," and secure the testimony of independent chemists and experts, when they will find that it is not the lamps that are at fault, but the oils.

THE ADULTERATION OF LIQUORICE.

IN the examination of Mr. John Clark Foster the following facts regarding liquorice were given to the Select Committee on Food Products. In addition to interesting our readers, they may lead them to give some needed attention to this adulteration.

Sir Charles Cameron said: Liquorice, as we all know, is used largely in connection with medical purposes, such as the making up of prescriptions and the manufacture of pills, and so on?—Yes—Do you think that it is largely adulterated?—Very largely.—Have you any evidence to give on that point?—Yes, I have got half-a-dozen analyses in my hand.—Will you just let us have the substance of them, please?—This is one of them; it is from Mr. Bernard Dyer.—That is in 1887?—Yes. "I have examined the two samples of suspected liquorice you sent me, one consisting of sticks about half an inch thick. I have carefully examined and compared them with specimens of genuine Spanish liquorice, and find that they both contain a good deal of farinaceous matter foreign to genuine liquorice, as well as other impurities; and I am of the opinion that neither of these contains more than 25 per cent. of the genuine extract, if even there is present as much as this."—Have you got another certificate from the same gentleman, given you on December 20, 1892, to the effect that certain liquorice juice was adulterated to the extent of at least 50 per cent. of foreign matter? Yes—And a third, in 1892, to the effect that the juice was adulterated to the extent of at least 30 per cent. of foreign matter; and a fourth, in 1892, of which the same Mr. Dyer said that he was of opinion that only one-half of it was genuine liquorice? Yes.—Would you please say what are the chief adulterants? Principally farina, rice, starch, sago, flour, miller's sweepings mixed with sugar, and farinaceous substances generally.—What are miller's sweepings? Sweepings from the miller's floor, I suppose; anything but flour.—That deprives the liquorice entirely of any medicinal quality, I suppose? It takes it nearly all away, I should think.—And you say that it is calculated to induce the presence of weevils and maggots, and that you have examined specimens which have swarmed with those insects? Yes; when the liquorice juice has been kept any time it decays and turns rotten, and these insects breed.—What is done with it then? It is kept as long as it can be, I suppose, till it is useless, and then is thrown away or destroyed. When it is in good order I suppose it is used in whatever way liquorice is used.—You say that these and other adulterants; I do not know whether you refer to the weevils there? No.—You say that they are largely used with pure liquorice in the manufacture of confectionery known as Pomfret liquorice, pipe liquorice, &c.? Yes.—Your

complaint is that these generally contain only a small proportion of liquorice, and the manufacturers are still permitted to call them by that name? Yes.—What would you suggest in connection with that? I should suggest that they should be sold as a compound or a mixture—These liquorice sticks, that pipe liquorice you speak of, is, I suppose, purely a confectionery product? Pipe liquorice juice is; but there are other sticks, smaller sticks and larger sticks, sold in the same way as sweetmeats, and used in different ways, that are made of the same stuff or worse.—As to that liquorice which you saw swarming with weevils, do you happen to know whether that found its way into Pomfret liquorice or pipe liquorice? I do not know. It was imported from France; that is all I know.

Mr Frye: Would not the insects attack the genuine liquorice? No.

Sir Charles Cameron: You think it is absolutely essential that anything not containing at least 95 per cent of liquorice should not be allowed to be sold under that name? Yes.—Has there been any prosecution in connection with adulterated liquorices? Several, but only one or two that I know of.—At whose instance? In one case, I do not know at whose instance it was, but one man was convicted—I suppose the pharmaceutical trade is more interested in getting pure liquorice than any other? Yes, it is; but, still, nothing has been done in the article at all; it is a common, well-known fact.—You propose to allow 5 per cent. of impurities; what are the impurities?—Anything connected with dirt or dust, or anything of that kind, in the manufacture of it. It ought to be really pure within, at any rate, 1 per cent or $\frac{1}{2}$ per cent. In my juvenile days I got a recollection of liquorice containing bay leaves; is that the case?—It does not contain them; it is packed in them.

Mr. Frye: Is it easy to detect the adulteration of liquorice?—I think so.

Sir Charles Cameron: You also have experience in regard to arrowroot, caraways, ginger, and pepper, I think?—Yes. Will you please tell us what you know about them?—I can give you an instance only about a fortnight ago, when 200 or 300 bags of caraways were put up for public sale which were adulterated with drawn or exhausted seeds to the extent of, at least, 25 per cent. These were not offered for public sale; they were put up, but were withdrawn at the request of several members of the trade. They were imported adulterated.

Mr. Frye: How are they exhausted?—They exhaust the oil; they take the oil from them.

Sir Charles Cameron: Does not that materially alter the appearance of the seed? Not very much, but it does rather.—That of course comes within the Act as at present; the Act provides against the exhaustion of any valuable ingredient? I believe it does, but it is still extensively carried on.—I suppose in connection with the ordinary adulterating machinery, such articles as caraways would never come up? No.—If you, for instance, had bought as caraways that lot of caraway seeds, you would have had your civil remedy in refusing to pay for them? I do not see how we could. It is put up to the public sale and sold under public sale conditions.—And not warranted? And not warranted in any way—About arrowroot; you say that is largely mixed with farina and potato starch? Yes, that is a well-known fact.—Have you had any examples of prosecutions for that adulteration? Not at all; not lately.—Is that adulteration practised in this country or abroad? Over here, I should think, principally.

Mr. Frye: What would be the lowest price that pure arrowroot is sold at? About 1½d per pound.—That would be pure arrowroot, would it? Yes, 1½d. to 1¾d.

Sir Charles Cameron: I forget whether you said there had been any cases of prosecution? I have never seen one at all.—What is your trade exactly? We call ourselves spice merchants.—Have the spice merchants, as a trade, any organisation to protect themselves against such frauds? No.—You say that caraways and ginger are mixed with the exhausted products? Yes.—And that pepper is adulterated with ground rice, long pepper, olive stones, etc.? Yes.—What is long pepper? Long pepper is a sort of wild pepper.—Is it the product of a different plant? Yes, entirely.—And olive stones is what they call polivrette, is it not? Yes, from the olive.

Mr. Frye: With regard to arrowroot, sold as pure arrowroot, sold at 1½d. a pound, what would it pay the manufacturer to adulterate that with? The common sorts are not generally adulterated; it is not worth while, and, besides, it might improve them.—What kind of arrowroot is generally adulterated? The better sorts; the better qualities. Arrowroot goes up to 2s. 2d. a pound.

Mr. Kilbride: You talked of millers' sweepings being used as an adulterant; of what? Of liquorice juice.—Is not what is known as miller's sweepings the refuse after cleaning up the floors and lofts of millers? I do not know what it is; it is a term, millers' sweepings; it means any sort of rubbish I believe.—You are not able to say, as a matter of fact, that it is the sweeping-up of the lofts; the cleaning up generally? I believe it is.—That is what it is known as, is it not? Yes.

A RIVAL.

BILL NYE says he is very apprehensive that the pleasant relations heretofore existing between him and his brother millionaire Vanderbilt, whose "ranch" in North Carolina adjoins his, are to be interrupted, and the beginning of a feud, which will become famous he says—will even rival the celebrated Mellin's "feud."

ADULTERATION PROSECUTIONS.

IMPORTANT LARD PROSECUTION.

THE cottonseed oil in lard question has caused serious analytical disputes in several cases during the past few years, and on June 20 came before the Houghton-le-Spring magistrates in a very important case. The real defendant were Messrs. Fowler & Co., Limited, Liverpool, and the facts as given in the evidence were that on Apr. 30 last Mr. B. Scott Elder, chief inspector under the Food and Drugs Act for the county of Durham, purchased from Mr. Thomas Curry, grocer, of Lumley, three-quarters of a pound of lard. Mr. Elder told Mr. Curry that the lard was for the purposes of analysis. Mr. Elder divided the lard in three parts, leaving one part with Mr. Curry, keeping another part, and sending the third part to Mr. Stock, county analyst at Darlington. Subsequently Mr. Stock returned a certificate of analysis which stated that the lard was not pure, but contained an admixture of 10 per cent. of cottonseed oil. Messrs. Pearman & Corder, wholesale merchants, of Sunderland, had supplied the lard, giving the purchaser, Mr. Curry, a warranty expressing the purity of the article. Messrs. Pearman & Corder had been summoned accordingly. After the purchase of the samples by Mr. Elder had been admitted, Mr. Stock, analyst for the county of Durham, stated that he had had a large experience in analysing lard, and had written a paper on the subject of adulteration by cottonseed oil, which appeared in the *Analyst* in 1888. On May 11 last he received a sample. He analysed this, and came to the conclusion that there was 10 per cent. of cottonseed oil in it. He tested the sample three times by Conroy's method, and a fourth time by a method of his own, and the results in each case agreed. By Mr. Mulholland: His principal test was with nitrate of silver. By his own method he used a larger quantity of lard, and boiled it with sulphuric acid. The mixture became brown in colour, showing that it was adulterated with cottonseed oil. He had heard that if lard were exposed to the air and light for some time it would become of a brownish tint, but he did not believe it. He had a sample of pure lard exposed in this way for over twelve months, and in testing it afterwards he got absolutely no colour, either by Conroy's or his own method. There were other tests besides Conroy's and his own—as many as seven or eight. He had not tried all of them. He did not take the melting point test. He knew there was a standard for English lard, but it was a varying one. He agreed that American lard was more oily than English lard, or, at least, that some was. The melting point for English lard was as high as 48, and for American as low as 40 or 42. The specific gravity of the lard was normal, but he did not consider that a reliable test in regard to cottonseed oil. If they began with hard lard they might put cottonseed oil into it, and still not reduce the melting point below normal, nor reduce the specific gravity below normal. In the present instance he should judge that the lard was a hard kind to start with, and not oily. He got at this by removing part of the stearine put in for stiffening purposes. He did not try the test of "iodine equivalents," because he considered that it would be of no use in that case. It could not differentiate between cottonseed oil and other oils. Neither had he adopted the test of taking out the liquid acids, because he did not think it was a trustworthy method. The nitrate of silver test was a crucial one in his opinion. For the same reason he had not tried the chloride of sulphur test. He did not believe in the oleone refractometer, and in this instance he did not apply it. There was absolutely no other test reliable for the detection of cottonseed oil in lard than the nitrate of silver test. Mr. Mulholland then addressed the magistrates, and said that although he in reality appeared for Messrs. Pearman & Corder, yet he was instructed by Messrs. Fowler & Co. (Limited), of Liverpool, who were the makers of the lard, and had given their warranty as to purity. He wished to make this understood. The position of Messrs. Fowler in the lard trade was almost unrivalled, and up to now they had not had any conviction with reference to the quality of their lard. He thought the issue depended greatly upon the analysis of the lard. Hence, to prove the purity of the lard, four well-known public analysts would be called, gentlemen who had as many opportunities of testing lard as Mr. Stock. Mr. Bevan, a Fellow and Member of the Institute of Chemistry, and public analyst for the county of Middlesex, examined by Mr. Mulholland, Q.C., said he had a sample of the lard sent to him for analysis. In his opinion it was quite pure, and there was no indication whatever of cottonseed oil in it. There could be no object, as had been suggested, in mixing cottonseed oil with the lard and then adding lard stearine to stiffen it. The latter was as expensive as lard, and it would be an uncommercial proceeding. He produced a sample of the lard sent him after the application of the nitrate of sulphur test. It showed no discolouration whatever. Another sample produced was pure lard with 5 per cent. of cottonseed oil added, the colour being distinctly brown. He had found the oleone refractometer very useful. It was on the principle of the prism and the beam of light, and with different oils it gave different results. This sample gave 5.2 degrees on the instrument, whereas the addition of 10 per cent. cottonseed oil to pure lard only gave 2.2 degrees. This test was in its favour. Dr. Williams, of Liverpool, assistant with Dr. Campbell Brown, public analyst for Lancashire, said he had had a large experience in analysing samples of lard. In analysing the sample sent him in the present case his experiments were checked by Dr. Campbell

Brown. He found the lard absolutely pure, and there was no indication of cottonseed oil. He was familiar with the presence of cottonseed oil in lard. He tested it by other methods, such as the "iodine equivalents," the liquid acids, &c., with the same results. Edward William Taylor Jones, Fellow of the Institute of Chemistry, and for twenty years analyst for Staffordshire, said he had analysed the sample forwarded to him, and in his opinion it was perfectly genuine lard, and there were no indications, under any of the tests, of the presence of cottonseed oil. William Henry Challoner, managing director of Messrs. Fowler Brothers (Limited), Liverpool, said the lard in question was American. They bought the hogs and killed them themselves at Chicago. They never did such a thing as add cottonseed oil to their lard, and a guarantee was given with all sold that it was absolutely pure. The late Mr. Fowler, the founder of their house, was one of the gentlemen who carried on a crusade in America against cottonseed oil, and persuaded Congress to pass laws against its use in adulterating lard. This was the case for the defence. The Bench held a short consultation in private. Upon their return into court, the Chairman said the Bench had decided to adjourn the case for a month, in order that a sample might be submitted to Somerset House.

MILK.

SERIOUS CHARGE AGAINST A RAILWAY OFFICIAL.

At North London Police Court on June 19, Thomas Legg, aged 38, railway porter, of Charteris-road, Finsbury-park, was charged with stealing eight gallons of milk, value 6s., the property of the Great Northern Railway Company. Mr. T. Carr-Jackson prosecuted, and said the prisoner had been a porter in the employ of the Company for 17 years. In consequence of complaints received from town and country dealers as to the loss of milk, Inspector Parrish caused detectives to keep watch on the milk shed at Finsbury-park, with the result that the prisoner was seen to take milk from several churns, and make up the quantity with water. This not only exposed the Company to claims for loss of milk, but inflicted a cruel hardship upon those who sold the milk, by reason of making them liable to prosecution for adulteration.—Mr. Paul Taylor: Yes, a most dangerous kind of theft.—George Staines, a detective in the employ of the G.N.R. Company, said he and Detective Dutton were told off to watch the milk shed. That morning at three o'clock he saw the prisoner removing the milk churns for delivery to the respective customers. He took an empty churn and placed it by the side of about 20 full ones. From each of eight of the churns he took a gallon of milk and put it into the empty churn, and then he brought a churn half-full of water, and put a gallon of water into each of the eight churns from which he had taken the milk. The prisoner then went to another churn and took about a pint and a-half of milk. He (witness) then went to the prisoner and asked him what he was doing. He replied, "I am only taking a little milk to put in my tea." Witness asked "What about the milk you have been adulterating?" The prisoner denied it at first, but afterwards said he took it out for the purpose of selling. He added that he only got 19s. a week, and he had to do it to make up his wages. The prisoner asked if the matter could not be "squared," but was told that this was out of the question, and he was charged. He made no reply.—The Clerk: How much milk does a churn contain?—The Witness: About 17 gallons. I may add that on a previous occasion I saw the prisoner take 11 gallons in a similar way.—Mr. Paul Taylor: He is now charged with stealing eight.—Detective Dutton corroborated the statement.—The prisoner, who pleaded guilty to the charge, had no questions to put to the witness; but in reply to the magistrate he said he had been in the employ of the Company for 17 years. He had 19s. a week, and a wife and seven children to maintain. Latterly he had suffered from a bad throat, and the doctor said he must have change of air. It was with the object of getting the necessary money that he took the milk.—Mr. Paul Taylor said the prisoner apparently had a good character up to the present, or he would not have been so long in the Company's employ. This, however, was a serious case, because as a consequence, other people were brought before the magistrates and fined for adulteration. He was not quite sure that he was doing the correct thing in sentencing the prisoner to a short term of imprisonment. But he looked at the circumstances and the temptation, and sent him to gaol for only 14 days' hard labour.

At Tralee James Scanlan, Cloherclennon, was charged, at the suit of Sergeant M Govern, Inspector under the Food and Drugs Act, with selling adulterated milk to the Tralee Creamery Company. Mr. O. H. M'Cowen, LL.B., appeared for the defendant. Sergeant M Govern deposed to taking samples of defendant's milk at the creamery, and produced the certificate of analysis by Sir Charles Cameron, which showed that the milk was adulterated to the extent of 75 with water. Defendant denied that either he or his servants put water into the milk. Defendant was fined £1.

MILK SPREADS 150 CASES OF FEVER AT PLUMSTEAD.

A serious epidemic of typhoid fever is now prevailing in and around Plumstead, and 150 cases have been reported to Dr. Davies, the medical officer of health. The cause of the outbreak has been traced to a dairy which sold contaminated milk. Thus carelessness and disregard to sanitary requirements in one district causes

another, as recently at Islington, Hornsey, and now at Plumstead, dangerous disease or death. In spite, however, of these terrible examples, we see authority after authority offering inadequate salaries for sanitary inspectors, and deliberately undermanning their sanitary staff.

THE EDINBURGH SHERIFF ENCOURAGES MILK ADULTERATION.

IN the Edinburgh Sheriff's Court on June 18—before Sheriff Rutherford—a local dairyman pleaded not guilty to a charge of having sold to Mr. Robert Lindsay, Inspector, 3d. worth of milk in the north side of the city on the 29th of May last, which milk, it was alleged, was not of the nature, substance and quality of the article demanded. Mr. Lindsay gave evidence as to getting the milk from the respondent's vanman, after informing him that he purposed to have it analysed. Mr. John Hunter, analyst for the county, stated that he had examined the milk, and he thought it had been tampered with by being skimmed, and that 5 per cent. of water had been added. Dr. Stevenson Macadam gave evidence for the defence, and stated that he had seen the samples in this case, and he was of opinion that the fat was up to the usual standard. He did not think that 5 per cent. of water had been added, and he saw no evidence of the milk having been adulterated, and he would not say it had been adulterated. Sheriff Rutherford, in finding the charge not proved, said that he could only deal with this case as he had dealt with a previous one last week, and he would deal in a similar manner with every such case which was brought before him until some standard had been authoritatively fixed, either by the Legislature or by a consensus of opinion, below which milk could be said to be adulterated. Mr. John Stewart, solicitor, prosecuted on behalf of the Mid-Lothian County Council.

BUTTER.

At Thames Police Court on June 19, Sarah Jeffs, 49, Bedford-street, Mile End, was summoned for selling butter adulterated with 75 per cent. of margarine. Mr. Thwaites, inspector under the Food and Drugs Act, asked for "a quarter of a pound of tennepny butter," and was supplied with an article which was found to be adulterated. The paper in which the butter was wrapped was not marked "margarine." Defendant said after hearing the article was for analysis she told the inspector it was not pure butter. The inspector did not say anything to her about the wrapper. She sold the article in complete ignorance, and had no idea of doing anything wrong. She admitted knowing it was margarine, and the tub was labelled to that effect. When persons came in and asked for "sixpenny butter" she gave them margarine. Mr. Mead said that was defrauding the customer. Defendant would have to pay a penalty of £5.—D. Edwards, grocer, of 52, Gold-street, Stepney, was summoned. "Tennepny butter" was asked for. Mrs. Edwards served, and there was no label on the tub from which the stuff was taken, and it was wrapped in a "combination" label. The analyst's certificate showed it to contain 100 parts of margarine. Four half-tubs in the shop were unlabelled. After the purchase was completed Mrs. Edwards said it was margarine. She had previously been cautioned by Mr. Lyons, the inspector. Mr. Mead said the wrappers were an attempt to evade the Act. Defendant would be fined £12 and £1 costs, or, in default of distress, one month's imprisonment.

At Brentwood on June 20, Alfred Britton, grocer, Mountnessing, was charged with selling adulterated butter. Defendant said his daughter served the wrong butter. He sold salt butter, fresh butter, and margarine. Fined 10s. and costs 7s.

At Harlesden, on June 20, Messrs. Tapham and Crossley, 47, Canterbury-road, Kilburn, N.W., were summoned for exposing margarine for sale without being legally labelled. Inspector Watts, Middlesex County Council, deposed to asking Mr. Tapham for a half-pound of butter. He replied, "Which will you have?" Witness saw a parcel that looked like margarine and said he would have some of that. Mr. Tapham said, "I can't sell that." Witness said, "It is exposed for sale," and was then told, "Well, it's margarine." He purchased a half-pound, and produced the analyst's certificate to the effect that it was a sample of margarine. For the defence it was denied the margarine was exposed for sale. Defendants only had one label and that was on another parcel. A fine of 5s. and the analyst's fee was imposed.

SPIRITS.

At Melton Mowbray, on June 18, Sentley Burrows, Innkeeper, Melton, was charged with selling adulterated whisky at Melton on May 25. In imposing a fine of £1 11s. 6d., including costs, the Chairman said the Bench had decided that defendant had committed an offence, although they believed it was unintentional.

GINGER.

ADULTERATED GINGER.—At Preston, on June 15, Joseph Routledge, Fulwood, was summoned for selling ground ginger adulterated with 20 per cent. of spent ginger. Sergeant Harlow proved the purchase, and Superintendent Bourke put in Dr. Campbell Brown's analysis. Defendant said he bought the ginger as pure,

and it was so described on the invoice and tins. The Clerk, Mr. Ashhurst, said that would not do; it was not a warranty; it had been settled over and over again in the Courts that an invoice would not do. It would be further necessary for defendant to prove that he sold the ginger in the same condition as it was when purchased. Defendant said he was not guilty; he did not make the ginger up—
Fined 20s. and costs.

CINNAMON.

MR. THOMAS BOWKER DAWSON, grocer, Binbrook, near Market Rasen, was summoned, on June 17, for selling adulterated cinnamon, and was fined 10s. and 4s. 6d. costs. This adulteration is as ingenious in its way as that of ginger. Dr. Bernard Dyer recently said he had been informed that a certain firm of confectioners abroad, who did a heavy trade in walnuts, which they used in various forms of confectionery, had a large sale for their walnut shells—in fact, that they sold them in London for more than they gave for the whole walnuts, the shells being used in adulterating ground cinnamon.

"THE CITY PRESS" ON THE HOLBORN BOARD OF WORKS AND THE SALE OF UNSOUND MEAT.

"THE question respecting the alleged sale of unwholesome meat within the district over which the Holborn Board of Works has control is evidently nearing a crisis, though the local authority appears to be most reluctant to take action. The subject has been alluded to in the House of Commons, and at the meeting of the County Council on Tuesday the matter was referred to a committee for inquiry and report. Again, the Local Government Board has forwarded a communication to the Holborn Board with respect to the question. This letter the Holborn authority had under its consideration on Monday evening. The reply to be returned seems plausible, but is nothing less than an effort to shelve the question, or, at least, to delay as long as possible the necessity for adopting measures to deal with the evil. The question is one which involves commercial interests; hence the policy of procrastination the Board is pursuing. The trade done in the sale of meat in the Holborn district is of an extensive character, and naturally the local authority fears to take any step which might tend to diminish operations. But the interests of the public health also demand attention, and, as long as it neglects its duties in that direction, the Board is falling in one of the prime objects of its existence. Hardly anything but the force of public opinion will induce it to move effectually in the matter, and the publicity which the question is receiving should be of some avail in prompting the Board to arrange a more active and skilled supervision of the suspected market, and so prevent the sale of unsound meat."

INVENTIONS WORTH KNOWING.

THE SANITAS POCKET DISINFECTANT.

ALL who are called on to visit persons suffering from infectious diseases, but more especially clergymen, medical men, and sanitary inspectors, whose calling leads them into hovels of the filthiest kind, will find this invention just what they want. A small capsule is filled with Sanitas, and wrapped in cotton wool, which is securely enclosed in a network of fine gauze. The whole thing is only as large as a Barcelona nut, and two or three can be carried without any trouble in the waistcoat pocket. The person visiting the sick room can put one into a pocket handkerchief, when a slight pressure of the fingers breaks the capsule and liberates the disinfectant vapour, which can be thus inhaled by the visitor, and is not only a pleasant perfume, but a certain destroyer of all disease germs, whilst it also nullifies the effect of noxious gases. These pocket disinfectants are cheap—twelve of them can be bought, packed in a neat box, for one shilling. There is no dirt or trouble in using them, and we think they should rapidly find favour with sanitary inspectors, medical men, clergymen, and all whose calling takes them amongst disease.

The Sanitas Company have also added to their list of health preserving articles a very charming toilet, "Sanitas Eucalyptus Soap," superfatted, and, as its name implies, antiseptic. There are many soaps largely advertised which claim antiseptic virtues without possessing any. This soap is prepared under the supervision of Mr. O. T. Kingzett, F.I.C., well-known as the ablest expert on disinfectants, and that in itself is a guarantee of its genuineness. It is the perfection of a pure and pleasant soap.

ALLOA BURGH COMMISSIONERS AND THE ANALYST.

THE Clerk reported that he had informed Dr. Falconer King, as instructed at last meeting, that his engagement with the Commissioners would be considered in November, with a view to giving them a free hand in appointing any analyst they chose yearly. In reply Dr. Falconer King said it was not in the power of a local authority to remove a public analyst after he had been appointed, and he had written to the Home Secretary asking his protection. Dr. King's letter to the Home Secretary was also read, with a request that the Board might forward any remarks they had to make upon it.

It was pointed out that Dr. Falconer King had taken the Clerk's

letter in the wrong light, as the Commissioners had not the intention of dispensing with his services.

Baillie Arrol was not aware they were placed in such a position, or he never would have brought the matter up.

Baillie Home-Hay said it was a pity this had happened, and perhaps the best thing they might do would be to express their regret to Dr. King.

It was agreed to acknowledge receipt of the communications, and express regret that Dr. King had been led into a misunderstanding.

DOVER BOARD OF GUARDIANS CONDEMN TINNED MEAT.

AT a meeting of the Dover Board of Guardians a report was received from Dr. Fenn requesting the discontinuance of tinned meat in the infirmary. There was but little nourishment in it, and the patients would not eat it, the consequence being that it went into the pig tubs, thus entailing a great waste.

Mr. Sandercock said this was quite correct. You might serve it, but they would not touch it.

It was decided to adopt the report and discontinue this kind of meat.

DR. WYNTER BLYTH AND MR. A. W. STOKES ON ADULTERATION.

THE following evidence was tendered on June 19 to the Food Products Committee:—

Dr. Wynter Blyth said that he was public analyst for Marylebone parish and had had twenty-one years' experience as a public analyst. He attended the conference of vestries which had been referred to.

The Chairman: Will you explain the system in your parish in carrying out the Food and Drugs Act?—In Marylebone it is practically left to me to carry out the Act. I hold the double appointment of medical officer of health and public analyst, and the sanitary inspectors are under my direct supervision, and so I direct them to take samples.

You think that facilitates the working of the Act?—It does in this particular instance. I do not say because a man is medical officer of health he should also be public analyst, but it is a convenient system in Marylebone. We frequently employ agents; we have employed women to take samples as the agents of the inspectors.

Is there not the theoretical objection to this system that you are in the position of being both prosecutor and witness?—No, that is not so. I keep a black list with regard to all prosecutions, and the inspectors look after them rather more.

Is there any other peculiarity of the Marylebone system?—There is perhaps another point to be mentioned, with regard to the analyst being able to direct samples to be obtained. The analyst has generally access to special information with regard to the probability of certain things being adulterated. If, for example, he knows that at a public auction large quantities of exhausted tea, or exhausted ginger, or exhausted caraway seeds are sold, he can at once direct that samples should be taken in the district. If he has to act under the direction of a committee, as he frequently has to do, that committee must have time to meet, and delay occurs, and the experience is that that system is inconvenient.

Is there much work connected with the office of public analyst in your borough?—What work do you mean?

I mean, does it involve a good deal of work? What I want to know is whether, in a big place like yours, the fact of having two important offices combined does not make it rather too much for one man to do?—You see I always have a thoroughly good assistant provided by the Vestry, and the assistant does all the routine work, and I do not analyse samples myself except those reported to be adulterated. These are the only samples I analyse with my own hands.

You have to analyse with your own hands everything which goes into court?—Oh yes; it would be dangerous not to do otherwise. Of 600 samples taken, only 20 or 30 have passed through my hands.

What articles do you go into?—All sorts of things; butter and lard, and spirits and drugs.

What sort of drug prosecutions do you go into?—Mostly quinine and opium. According to my experience they are fairly up to the standard.

Where do you get the quinine?—From the ordinary chemist's shop.

You want to say something about standards?—I am most decidedly of opinion that it would be desirable to lay down limits or standards on all articles they can be fixed upon, such as milk and butter and cream, and vinegar.

I suppose practically you go by the standards laid down at Somerset House?—Yes, practically.

And these, although they are not acknowledged to be public, are understood?—Yes, the trade perfectly well understand them.

In this question of the milk standard, is it not a fact that in dealing with animal productions the standard of richness must be fixed at a low point?—In fixing a standard for milk it is quite obvious you must go on two principles. Either fix it so low as to take in the lowest milk of the individual cow, or take it on the average of a herd of cows. My own opinion is that it would be better to take not the lowest standard of the individual cow, but to

fix a fair average standard and leave it to the tradesman. He is supposed to know his business, and if he sells an article not up to the standard he must take the consequences.

What is the standard you work at at the present moment?—The standard we work at is $8\frac{1}{2}$ per cent. solids and $2\frac{1}{2}$ per cent. fat.

Is that the average?—It is not the average or the lowest, but between the two.

How about cocoa?—We have prosecuted a number of retailers for selling mixed cocoa without a label.

What sort of cocoa was that?—Cocoa mixed with starch and sugar. The inspector has asked for cocoa and has been supplied with a mixture. But latterly we have not taken these cases up because we are under the impression that when the public ask for cocoa they really mean a mixture of cocoa. So it is really a technical offence, and we do not consider it a real offence.

You heard what Mr. Tatton Egerton said about the use of the word "pure." Have you anything to say about that?—I think with regard to labels generally the labels should represent the composition of the article. I agree if you have a small percentage of coffee and a large percentage of chicory the proper way to describe it would be to call it chicory and coffee mixed, and not coffee mixed with chicory.

Can you conduct an analysis of a mixture of coffee and chicory with sufficient certainty to tell whether one article or another passes the 50 per cent.?—You cannot ascertain with accuracy within 1 or 2 per cent., but you can state the amounts approximately. There is no process absolutely certain.

I see you mention vinegar as one of the things for which there should be a standard?—Yes.

What are your views on that?—Well, I think the amount of acetic acid which constitutes vinegar should be laid down. The chief vinegar prosecutions have arisen as to origin. It has been sold as pure malt vinegar, and has been prepared from acetic acid. I think it should be an offence to sell vinegar as pure malt vinegar when it is derived from a distillation of acid. I think the term vinegar may embrace the different vinegars, but when you describe vinegar as malt vinegar, or white wine vinegar, or made from a particular kind of apple, as in Wales, which is called crab vinegar, the article should coincide with the description. The principle to be borne in mind is that the purchaser should always get what he asks for.

Take a question such as cream?—The standard should be fixed at so much per cent. of fat.

Is there any standard at present?—There are various proposals, but I do not really know, as an analyst, where to draw the line.

Have you had any prosecution in connection with cream?—No. You wish to say something with reference to Somerset House in disputed cases?—Yes: I do not object to a reference to Somerset House if there is a little modification in the procedure.

What modifications do you suggest?—I wish to say that the diversities of opinion that from time to time occur between the local chemist, if I may so call him, and the chemists at Somerset House is due sometimes to a different interpretation of practically the same analytical result, and often the results differ in consequence of the decomposed state of the article. There are, no doubt, real mistakes made by local analysts, but I do not think that they are common.

You think the local analysts should add something for preservative purposes?—Yes; my proposal is that, as the analyst is about to give a certificate of adulteration, he should take away a measured quantity of his own sample, seal it up carefully, put on a label of the exact amount he has put into the bottle, and the exact amount of preservative, and he should be allowed to send this sample himself to Somerset House, if there should be a reference to Somerset House, and at the same time send the results of his analysis, and the details of his analysis to be criticised by the Somerset House chemists.

What preservative would you use?—Formaldehyde; that is being used by the trade.

Mr. Channing: Is it being used largely? I cannot say; there is a disinfectant on the market containing 25 to 30 per cent. of formaldehyde; that is what is used.

The Chairman: Is this used for many articles?—Yes; large experiments are being made in Germany, and it is largely used in the preservation of food.

Without any effect on health?—I think it is really poisonous. It is a volatile liquid.

You think there should be a committee of experts?—Yes. Do you suggest also that samples should be set to the Somerset House authorities before prosecutions?—I think it is desirable in the question of new productions and forms of adulteration. It would be desirable before a prosecution was undertaken that the local authority should have the authority to ask the Somerset House chemists' opinion of that particular article.

I think it is a complaint that Somerset House will not give their standards?—I have never found anything but the greatest courtesy with regard to the Somerset House chemists. I think if I asked for the standard they would communicate any standard they adopted. I have had an interview once or twice with the Somerset House chemists, and they have always given every information. But that, of course, is private information. So far as I know they have not published their standards.

Mr. Channing: Are you not expected to publish them?—I do not know that; of course, I should not publish a private conversation.

The Chairman: So that so far you can't complain in your own case; you have practically all you ask for; you can go to Somerset

House and ask them for what they have?—Well, I daresay I could, but I think it would be extremely inconvenient if all the analysts in the kingdom had to run to Somerset House to have a conference.

Please explain what you mean by your suggestion; is it that you are not at all sure of the Somerset House standards?—I will give you an instance. There are certain butters on the market—certain butters which are extremely low, and I believe they are adulterated butters. A *confrère* of mine took a sample of the butter, and he consulted me, and I analysed it, and I said, "Yes, this is a mixture; you had better go on with it." He went on with it, and gave a certificate, and the vendor was prosecuted. This butter was sent to Somerset House, and the Somerset House chemists declared that it was pure. Now in such a case as that I think it would have been better if the Somerset House chemists could have been consulted before the prosecution, because the local analyst naturally has a sort of slur cast on his analysis. These facts are not known to the authorities or the public—the fact that the butter was analysed by two public officers. Somerset House stated that it was not a mixture, whereas I and my *confrère* considered that it was a mixture, there being about twenty per cent. of foreign fats with the genuine butter.

I suppose the Somerset House authorities simply say it is not adulterated; they do not give any reasons?—No; I do not know their figures. It is quite possible that something may have gone wrong with the samples—they might not have analysed the same butter that my *confrère* and myself analysed.

That is a matter which would practically rectify itself after one such decision?—I do not think so. This is a mixture which people should not be allowed to sell as butter; or if it is not a mixture, then it is rather hard to summon an innocent person.

But do not the Somerset House people say it is not a mixture?—Yes.

And that practically settles it?—Yes; but how are other analysts to know that?

Except by your Society?—Yes; but there is a large quantity of this particular butter in London now.

And you think it is adulterated?—I believe there is 15 to 20 per cent. of foreign fat mixed with the butter. I am certain in my own mind that it is a mixture.

Has there been any further analysis of it?—Not of that particular sample; it is all used.

Then you think a detailed account of the analysis should be furnished?—I think that it is only fair.

Now we will hear what you have to say about labels?—I agree with Mr. Tatton Egerton with regard to the label; but I think that in the case of spirits the Act is rather a dead letter.

And as a matter of fact spirits are one of the few articles in which a standard is fixed?—Yes.

Do you think the proportion of, say, mustard and flour or coffee and chicory should be stated, or do you think that the preponderating article of the mixture should go first?—I think the main article might go first. I do not think that in the case of mixtures such as starch and sugar and cocoa all the ingredients should be stated. But the proportion of cocoa should be stated. So in the case of coffee and chicory mixtures the percentage of the coffee, which is the more valuable article of the two, should be stated.

We have another mixture of butter and margarine, that is defined by the law to be margarine. Have you any proposal on that point? Would you treat that exceptionally, or would you allow it to be sold as a mixture?—I do not see any objection to selling it as a mixture if the percentage of the butter or the margarine is distinguished. That is, when there is 40 per cent. of butter and 60 per cent. of margarine it should be called margarine and butter, and when the proportions were reversed it could be called butter and margarine.

Now we will take colouring matter in preservatives. What have you to say on aniline dyes?—Of late years, they have taken to dyeing ordinary sugar to imitate Demerara sugar. Then there is a yellow colouring used for colouring butter. The quantity put in articles separately would not hurt—the consumer would not get enough to affect his health. But if it is in all your sugar and all your butter and every coloured article you use, a person might consume an amount of dye which, if colours are poisonous, would be injurious to health.

As a matter of fact, are the colours poisonous?—No, only a few of them. There has been a large test made of the aniline dyes, and there are only a few of them which in large doses cause illness; but at the same time I must say even experiments have never been made upon what I may call aniline poison. There have been no experiments in dosing animals for a long time in small quantities, so I do not know the effect upon health it might have; but, considering that their use in articles of food is increasing, there should be some limit to the amount used, and certain of the aniline dyes which have been found to be poisonous should be prohibited.

You have something further to say about antiseptics?—The remarks I have made on aniline dyes also apply to antiseptics. I think there should be some limit put on the use of antiseptics, either by actually limiting the amount to be used or by compelling the vendor to state the antiseptic used.

I suppose you would consider salt as the first antiseptic?—Yes, but it has to be used in such large quantities to be an antiseptic that the consumer at once detects it.

But with regard to these antiseptics, that is an important point. The Food and Drugs Act deals with two classes of adulteration—one injurious to health, and the other deals with the mixture of

substances. Have you taken any action under the first clause for the sale of articles injurious to health?—I think I have in one or two cases, but it is a long time ago, and I do not remember the details; I think one was the question of labelling some article of food.

If you were taking any action in regard to glycerine, or borax, or aniline dyes, it would come rather under the first category?—Yes; but there is extreme difficulty in proving it as a matter of fact.

The question of proof?—Yes.

Sir Mark Stewart: You think if you had a larger force of inspectors you could put down the adulteration of milk?—I do not think any amount of inspection would entirely abolish it, but you can control it a great deal; but we have a large decrease now in consequence of the way the Act is looked after.

Do you think this Committee should fix a standard?—I think they have sufficient evidence before them.

Where does this aniline dye come from?—It is manufactured to a large extent from coal tar. Another name for the dye is coal-tar colours. There are something like 254 distinct colours with different names.

But used in small quantities you do not think they have any deleterious effect?—No; but used in large quantities I fear they might have. But seeing that these are put into almost every article of food, one might take rather a large quantity.

You would not specify the quantity which would be injurious?—No.

Mr. Channing: About margarine. Do you approve of allowing everything to be called margarine which contains foreign fat?—I think the Act has worked fairly well.

Would you approve of mixtures being sold as margarine and butter? Would you think that is sufficient?—Yes, quite; it would be sold under a correct designation, and that is all one wishes—for the article to be sold for what it really is.

Do you think the preponderating article would determine the name?—Well, I do not know.

If butter was the largest article you would not call it butter and margarine?—I do not think an exception should be made.

That would be repealing an Act of which you approve?—I quite approve of the Margarine Act.

That all mixtures containing foreign fat should be sold as margarine; don't you think that is necessary to prevent a fraud?—I do not think it is at all necessary.

Would you call an article containing 40 per cent. of margarine and 60 per cent. of butter by the name of butter?—No; but you might call it butter and margarine. That would be a correct designation.

Would not such a system as that practically mean the breakdown of legislation altogether?—I do not think so.

As to preservatives in milk and other food, do you think they should be prohibited?—Not unless they are poisonous.

The public are unaware in most of these cases of the preparation which may be injurious?—That is so.

Would that be an additional reason for limiting their use?—Yes.

Mr. Alfred Walter Stokes, F.C.S., F.I.C., said that he was public analyst to the parishes of Hampstead, Paddington, Bethnal Green, and St. Luke's, and had had twenty-seven years' experience.

The Chairman: You are aware of the resolutions passed at the conference of vestry officers. Will you tell us if in any way you differ from them?—I do not know whether you would go into the question of the minimum number of samples to be taken. At present various districts appoint an analyst and give him so many samples. If you would fix a minimum of, say, so many samples per 1,000 of the inhabitants, you would do good. I should think the average should be 1 in 500.

Do you propose that articles such as seidlitz powders should not be divided?—The packets are extremely small, and you cannot divide a single package into three samples. I think a sample of six packets or so should be taken as a sample of the whole.

Is a seidlitz powder an article that is frequently analysed?—Occasionally, but not so frequently as food.

Is there any other article to which this would apply?—Such articles as teething powders.

Does that come under the Adulteration Act?—Yes; it has come up in a case we have had.

Have you considered the question of the establishment of a board of reference?—I think it is exceedingly necessary.

You think they should fix standards?—Undoubtedly. If you use old-fashioned methods you get different results. We do not know the standards at Somerset House. The chemists there have been asked to read papers before our Society on certain questions, but they have always refused to either appear or give evidence *en masse*.

But nevertheless the Somerset House standards are pretty well known throughout the country?—They get known in those cases in which disputes arise.

Do you suggest that they should advise methods of analysis?—Yes.

Do they do that?—No; I could not tell you how they analyse butters now.

Then as to butter, have their analyses and results been at variance with your own?—In my own case, no.

Do you think the wholesale dealer should be summoned where a warranty is given?—Yes; because some traders always give a warranty, but know they are selling adulterated goods.

Do you know a case?—Yes, I know a case in which a firm

always plead a warranty and always get off; but the farmer who supplies the milk to the firm is all right, as the limit of twenty-eight days prevents him being got at. I should say a man should be able to produce the giver of the warranty, who might be summoned.

Are you desirous to see a general rule apply in all cases?—Yes.

How would you apply it in other cases, to the grocer who sells adulterated pepper and so forth?—If he produces a warranty from a firm, then they should also appear in court.

You are aware that in a great number of cases firms do that. Firms sell lard warranted pure. The retailer who is prosecuted does not plead warranty, but the wholesale man steps into his shoes and fights the case for him. That is frequently done?—Yes.

Have you come across many cases?—Yes.

Sir Mark Stewart: Any other cases except lard?—Yes; one or two cases of pepper.

The Chairman: Did you hear the suggestion of the last witness with regard to preservatives in samples?—I think it unwise, because if you once allow an analyst to tamper with an article, motives will be imputed. I think if the giver of the warranty is brought into court, that will do away with the time limit difficulty.

With that alteration you see no difficulty in working a provision with regard to warranty?—No. Of course, in the case of a man from abroad, you would have to get it from the agent in this country.

Then you think the fines imposed should be more uniform?—I may say that in the Marylebone Police-court, Mr. De Rutzen fined a tradesman £2 for selling 77 per cent. of chicory in coffee, although he had marked it as a mixture, but within a week Mr. Cooke, sitting in the same court, dismissed another case and put the Vestry to the expense of all the costs, although there was over 90 per cent. of chicory in the coffee mixture which had been asked for. You will see the difference in that case. Either one man got fined unjustly or the other was guilty. Another case I have had is one in which a man has been brought into court for selling 90 per cent. of margarine in butter. He pleaded that he bought it of his wholesale man as pure. The wholesale man appeared in court and said that he committed the offence, and he offered to pay the fine. The magistrate fined those two men a shilling between them.

The wholesale man really was brought in in that case?—No; he appeared in court and said that he sold it as pure butter and offered to pay the fine.

You have no practical proposal for remedying it?—Except that fines should not be less than a certain amount.

Take the case of label mixture, coffee and chicory?—Personally I would not allow coffee mixtures at all. If you ask for coffee you have the right to get it and nothing else.

But you can't prevent mixtures?—No, but they should be stated.

Do you think the definition in a large type is sufficient in the case of such articles as coffee and chicory?—No.

Take the case of cocoa?—That is necessarily an adulterated article.

Can you suggest any general principle to apply to all articles?—No, I could not do that. I would like to call cocoa pure and simple as cocoa, and all other cocoas as cocoa mixtures, but I am afraid we cannot go back now.

Is not that much the same as French coffee or shilling coffee?—No, I do not think so.

You do not agree, then, with the recommendation of the conference with regard to mixtures?—If mixtures are allowed then they should be named.

You can't stop mixtures?—No; but 90 per cent. of chicory is not coffee.

If mixtures are allowed, do you think it advisable that the percentage of the different articles should be stated, or would you be content to give the name of the preponderating article first?—I think that the preponderating article should be put, and the percentage of the most valuable article, such as "not less than 10 per cent. of coffee."

Then we come to the question of margarine. If you go by labelling the thing what it is, are you in favour of defining what proportion of margarine is in a mixture?—I do not think any mixture of butter should be allowed to be called butter, for the sake of the agricultural interests of England.

There is no other reason except that?—If the public could detect it, it would be different. They can detect coffee and chicory. If you once allowed the thing to start, it would become hopelessly involved.

You think a minimum penalty of 40s. should be imposed?—Yes, I think so. The magistrates have no guide at present.

You say you are opposed to all the suggestions of the Metropolitan Dairy Association?—Yes.

You have something to say of the Local Government Board order?—Yes, with regard to butter samples being placed in stopper bottles. If that is done it will cost 3s. 9d. to take each sample. It is unworkable, because we frequently go into coffee-shops and buy bread and butter, and if you have to buy three quarter-pounds as the order directs, you would have to buy many loaves.

Do you ever try hotels?—Not in my experience; we try refreshment-houses.

Sir Mark Stewart: The only standard you have is that for spirits?—Yes.

The Chairman: You have another standard in butter—the standard of absolute purity?—Yes; but what purity is has not been defined.

Then you think a standard should be fixed for such articles as sausages?—Yes; we took samples some two years ago, and on analysis they were found seven-tenths bread, two-tenths fat, and only one-tenth actual meat.

What would be your standard for sausages?—I should think not more than 50 per cent. of bread.

Do you think Somerset House, if they had this court of reference, would fix the standard for sausages?—On, yes.

Are not they made from different things? I know one place where they make them from blood?—They are called black puddings.

Have you anything to say about baking powder?—It has been decided that it is neither a food nor a drug, but when it is put into anything it becomes an article of food. I would have it put into this Act.

Which would you suggest, a food or a drug?—A food.

In that case you would require the composition to be declared?—Immediately it becomes a food, and we think that it will be injurious to health, it will be stopped.

But that requires interpretation; there are many foods injurious to health, but they are used. Some say spirits are injurious to health, but they are used?—I think this court of appeal would fix what was injurious.

All baking-powders do not contain alum?—Oh, no; only certain of them.

Then would you fix a certain limit for acetic acid in vinegar?—Yes.

Then we come to fat in cheese?—There are cheeses sold with little fat in them, and they are sold in a name by which you would expect to get good cheese. There should be some limit to that.

A large amount of that Dutch cheese has not much cream?—But there is some fat.

You do not think the name cheese is sufficient to sell it by?—No; if you buy Stilton or Cheddar you expect to get good cheese.

You would differentiate between different classes of cheese?—I think it would be wise to extend it.

Mr. Channing: With regard to articles like coffee and butter and so on, is there any doubt in your mind that the vast majority of purchasers wish to obtain an article which is identically what they ask for, such as pure coffee and so on? Is that the intention of the purchaser?—Undoubtedly. Purchases are often made by children who are unable to read the labels on goods.

It is your opinion that the law with regard to definition should be rather strengthened than weakened?—Undoubtedly.

Would not the description of mixtures without a guarantee tend to facilitate frauds?—Certainly.

Mr. Yerburgh: Butter is sent out in paper; would that not absorb some of the constituents so that the analysis would not represent the sample purchased?—I never heard so.

With regard to putting butter in tins; is it not a fact that the butter is acted upon by the metal?—It would not in the short time before an analysis would take place.

Sir Mark Stewart: I notice in the returns of the annual report of the Local Government Board that the percentage of adulteration in drugs is very much smaller in 1893 than in 1892. In 1893 they were 11.3, and in 1892 they were 20.4. How do you account for that? Is the system better than it was?—I think you will find that in one year there has been a run on a certain article, and that has frightened the trade and they are better.

The main of the prosecutions are for milk, butter, and coffee?—Yes.

Also for spirits?—Yes, they are very large.

Would you insist on large manufacturers disclosing to the public the ingredients they put into their mixtures, such as cocoa?—No, not necessarily.

You merely wish them to identify the chief article?—Yes.

And they must define a certain amount?—Quite so.

Have you often had under your supervision as analyst foreign manufactures such as cocoa?—Yes.

And you would apply the same test to them?—Quite so.

Do you find foreign manufactures adulterated more than British manufactures or not?—Certain articles, such as lard and butter, are more adulterated by foreign producers than by English producers.

Would you apply to them the system of warranty, to enable the retail dealer to clear himself, and to fall back upon the importer?—In that case I would have the goods stopped at the port of entry.

Mr. Channing: You mean every delivery?—Such as is now done with tea. The local authorities could easily analyse the samples of lard and butter, and other foreign produce. At present the English retailer has to suffer for the sins of others.

Supposing there were a number of deliveries of small quantities, would you insist on samples being taken of all these?—The Customs officers would have information of those likely to be adulterated.

Sir Mark Stewart: You insist that all foreign consignments should be examined?—Yes; if not you put the English producer at a disadvantage.

Then that warranty which would be implied if it passed the English Customs would be sufficient warranty to clear the retail dealers if it were found afterwards adulterated?—Yes; but it would, I think, lead to their selling foreign goods instead of English.

I do not think that it would injure the English producer. Your argument is that the retail trader has a warranty for every pound of butter he sells from abroad, and he had not got the article from

England?—The English producer would not give a warranty if the goods were not pure, but the foreigner could not be got at.

But you would sample his goods at the port of entry, and, therefore, it would be no injustice to the English producer?—No.

The Committee adjourned till Tuesday, but grew tired of the job and did not meet.

THE DANGERS OF CARBOLIC.

THE popular knowledge that carbolic acid is an antiseptic is productive of a great deal of harm. The fact that it was the first antiseptic employed by Sir Joseph Lister in wound treatment has been in many ways unfortunate for the human race. Surgeons have until recently regarded it as indispensable to have their instruments in a tray of carbolic solution, which, if strong enough to sterilise the instruments, destroyed the surgeon's hands for practical purposes; and if, as was usually the case, it was so weak as not to actually burn the hands, did no good as an antiseptic—circumstances which were bad for the patient, the surgeon, and all concerned. The disadvantages of carbolic acid, however, can be best seen in out-patient clinics, whither patients continually come with the skin of their hands parboiled and peeling off, exposing the raw subcutaneous tissue more or less eroded by the carbolic acid which a kind friend has advised them to use for a slight cut, or burn, or abrasion. The desirability of ascertaining the strength of what they are using does not occur to them. They are the victims of popular "Listerism" in its most primitive form. If the lay mind could only be made to appreciate that carbolic acid is always dangerous and seldom efficient as an antiseptic, a great deal of unnecessary suffering would be prevented.—*Boston Medical and Surgical Journal.*

THE USE OF BACTERIA.

It seems that bacteria are of some use after all. Dr. Kijazozin, of the University of Kieff, has recently demonstrated that we can't get along without them. He devised an apparatus in which animals could be kept perfectly free from bacteria and supplied with air and food similarly pure. He noticed a remarkable decrease in the assimilation of nitrogenous matter, and suggests that micro-organisms aid in the decomposition and peptonizing of nitrogenous matter in the intestines. It is thought that were it possible to remove all internal micro-organisms, this mal-assimilation would be greater still. The animals lost weight very quickly, and the excretion of nitrogen and carbon dioxide was greatly augmented. In a number of cases the animals died within a short time, and in the absence of any other ascertainable cause, it was assumed that the absence of bacteria was responsible for the deaths.

HOW ARTIFICIAL CAMPHOR IS MADE.

THE scarcity of genuine camphor has, it is said, led to the manufacture of artificial camphor, and it is rumoured that a certain firm have forwarded shipments of the artificial substance to Hamburg, and have reshipped it to England as genuine camphor. One method of making artificial camphor is the following: It is prepared by passing a current of dry hydrochloric acid gas through spirits of turpentine cooled by a freezing mixture. The liquid darkens and deposits crystals, which are dissolved in alcohol and precipitated by water. The separated crystals are drained and dried. They are perfectly colourless, with an odour like camphor. It may be added that this artificial camphor melts at 115° C. and boils at 165° C., with decomposition. At the ordinary temperature its vapour tension is sufficient to cause it to sublime like ordinary camphor in small brilliant crystals in the bottles in which it is preserved. It is insoluble in water, and gyrates when on the surface of that liquid like true camphor. Real camphor (laurel) melts at 175° C., and boils without decomposition at 204° C.—*Paint, Oil and Drugs Review.*

AFTER THE BATH.

ACCORDING to *Le Mercredi Médical*, Max Edél, a German bacteriologist, took a bath and then examined the water for microbes; he found that it contained 5,850,000,000! After a bath of one foot only, he estimated the number of microbes at 180,000,000.

The question now arises: When did Edél have his last previous bath?—*Medical Record.*

THE LOCAL GOVERNMENT BOARD has called the attention of the local authority at Peterborough to the small number of samples submitted for analysis under the Food and Drugs Act. A committee is to be appointed to deal with the matter.

THE HEALTH WATER PIPE

NEVER POISONS THE WATER.



PATENTEES:

WALKER & CO., HECKNOWNDIKE.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London,

COLEMAN'S "WINCARNIS"

OR
LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

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A 2s. 9d. Bottle sent Post Free on receipt of 88 Stamps

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Food and Sanitation.

SATURDAY, JULY 6TH, 1895.

W. T. STEAD AGAIN.

READERS who remember our exposures of Mr. Stead's conduct in connection with the matter of selling dirty water as a cure for cancer at 3s. 9d. for two to three ounces, and of his share in the Drink Cure quackery, will not be surprised to learn that the good man Stead is still unabashed. He burns as ever with zeal to advance the welfare of humanity, and to proclaim how great and truly pious a pattern of all the virtues he himself is. To those who know him as we do, the following incident in the Court of Queen's Bench on Tuesday is interesting:—

In this case of the Queen v. Balfour, before Mr. Justice Wills and Mr. Justice Wright, in the Queen's Bench Division on Tuesday, a rule had been obtained calling upon Mr. W. T. Stead, the editor, and the publisher and printer of the *Review of Reviews*, to show cause why they should not be committed for an alleged contempt of court in publishing comments on the case of Jabez Spencer Balfour.

"SANITAS" is a really Non-Poisonous Disinfectant.



"SANITAS" Kills all Disease Germs.

"SANITAS"—"Valuable Antiseptic and Disinfectant."

—Times.

"SANITAS"—"Enjoys general favour."—Lancet.

Mr. A. Lyttelton appeared to show cause against the rule, while Mr. John O'Connor and Mr. C. H. Swanton supported it.

Mr. Lyttelton said a true bill was found against Jabez Spencer Balfour on June 17, and three days later a paragraph appeared in the *Review of Reviews*, of which Mr. Stead was the editor. It was said that this paragraph would interfere with the trial of the prisoner. Amongst other things, the paragraph stated:—"Another rare rogue in the shape of Jabez Balfour was a good deal before the courts last month. He will re-appear at the Old Bailey, and then we may expect to hear no more of him for some time to come."

Mr. J. O'Connor said he complained of the whole paragraph, and, therefore, it ought to be read.

Mr. Justice Wright said the whole paragraph was before the Court, and therefore it was not necessary for the learned counsel to read it. It associated Balfour with Orton, and expressed an opinion as to what the result of the trial would be.

Mr. Lyttelton said if their lordships were of opinion that the paragraph was calculated to interfere with the due course of justice, and to prejudice the minds of jurymen, Mr. Stead and the other two gentlemen for whom he appeared entirely apologised. Mr. Stead certainly had no intention of prejudicing the trial in question. Balfour was a public man, having been a Member of Parliament and chairman of the Liberator Society. The fall of this society involved many people in financial ruin, and he submitted that a journalist had a perfect right to criticise with great severity action which was followed by such results.

Mr. Justice Wright: How is it fair criticism to say that a person on his trial cannot but be convicted? That is a serious thing indeed.

Mr. Lyttelton said it never occurred to Mr. Stead that the paragraph would affect the trial.

Mr. Justice Wills: He assumed that the case was so bad and the man so palpably a rogue that it did not matter what he said about him. That has really been the tone of the English press with regard to this matter. I never knew a case in which the English press have behaved so utterly without regard to decency in their comments as in the present instance. For the decency of the administration of justice these things ought not to be published.

Mr. Lyttelton said Mr. Stead apologised for what he had done.

Mr. Justice Wills: I see in his affidavit his apology is conditional.

Mr. J. O'Connor, in support of the motion, said he did not press it against the printer and publisher, because they had amply apologised. Mr. Stead, however, instead of apologising, had attempted to justify his action. No doubt Mr. Balfour committed an error in leaving the country, but he fled from comments such as those published by Mr. Stead.

Mr. Justice Wills: I think you are now going a little beyond the mark.

Mr. J. O'Connor said he would not pursue the matter further. He contended that Mr. Stead had been guilty of a serious contempt of court, of which their lordships were bound to take notice.

Mr. Lyttelton wished to say that he had not attempted to justify what had been published.

Mr. Justice Wills said it was unfair, ungenerous, and thoroughly wrong to publish such an article as that complained of. Mr. Stead had been guilty of a contempt of court, which could not be passed over lightly, and therefore he would be fined £100 and costs. With regard to the two other defendants, the application might be allowed to drop.

Mr. Justice Wright concurred.

Jabez Spencer Balfour may, or may not, be all that Mr. Stead, for self-advertisement purposes, has proclaimed him—that is for a jury of his fellow countrymen to determine—but, assuredly, the very last creature in the world to throw a stone at the ex-Liberator chief ought to be W. T. Stead, for reasons well known to every reader of this journal, and to the editor of the *Review of Reviews* himself. Mr. John O'Connor is to be congratulated on having punished Mr. Stead in the only way it is possible to do so—through that good man's pocket.

MUSTARD ADULTERATION.

HOW IT IS DONE.

WE have before now given Messrs. Ehrenfest and Co. a free advertisement for the various preparations they offer traders, by means of which a thing can be made to appear what it is not. For a long time past the following circular has been persistently brought under the notice of mustard manufacturers and firms who practice the 10 per cent. wheat flour game:—

"MUSTARD COLOURING.

This colouring is tasteless, inodorous, and harmless: it has been introduced for the purpose of bringing up the colour of genuine mustards and condiments of inferior appearance, to that of the finest qualities.

The colouring is so strong in effect that $\frac{1}{4}$ per cent. is usually more than sufficient to have the desired effect—even upon the commonest qualities, and the mustard is not in any way injured in taste, smell, or in any other way.

Samples and particulars of use to be obtained of the sole importers,

EHRENFEST AND CO.,

56, Stamford-street, Blackfriars, London, S.E.

P.S.—Please note that the mustard colouring, when added to the mustard in the proportion advised, *will not show the effect at the time*: it will take a day or so for the oil in the mustard to act upon it and develop the colour."

Nothing succeeds like success, and that Messrs. Ehrenfest and Co. are successful is evident from the following evidence. In a recent letter they say: "We have introduced it to two of the largest mustard houses in England, who are now using it regularly. Our friends have succeeded in producing a colouring which, added either to condiment or genuine mustard, gives it the appearance of that produced from the best brown mustard." These altruists ask us to kindly add about 0.25 per cent. to mustard or condiment, and let it stand a day or two, when we shall see how it improves the appearance. We are doing so, and hope the result will be ready for the Select Committee on Food Products—if it should ever meet again—when we reckon it ought to astonish at least one member of that committee. But of that, more anon.

A SANITARY OBJECT LESSON.

EVERY local authority has its economic sorehead who growls at expenditure for sanitary work, and often enough gains much praise from ignorant ratepayers for what they usually call his sterling public spirit. We know that sterling public spirit, and Dr. A. Campbell Munro, medical officer of health for the county of Renfrew, apparently knows it, and had in his mind some of the half-baked economists when he penned the following excellent object lesson in his report for 1894. Dr. Munro says:—

"In illustration of the pecuniary loss to the community arising through the prevalence of infectious diseases, I may be permitted to reproduce a statement of the approximate cost to the community of the Mid-Renfrewshire epidemic of enteric fever of 1893.

"In the course of this epidemic, there occurred 859 cases, and 74 people lost their lives. I put aside any reflection with respect to the immense amount of bodily pain and suffering, the mental distress and anguish, the misery and wretchedness, involved in these figures. I confine myself to the pecuniary aspect of the question. Having before me an approximate statement of the wages earned by each individual wage-earner attacked in the course of the epidemic, together with the average period during which he was prevented by illness from pursuing his occupation, I am in a position to estimate the cost of the epidemic to the community through loss of wages at £3,291. There has next to be considered the expense involved in connection with the treatment of these illnesses, extending, on an average, over seven weeks. I find that the average cost of treatment for each patient received into hospital in the course of the epidemic was about £8 15s. I am, therefore, well within the mark in estimating the average cost of treatment of cases, over-head, at £5. It may be taken that, in respect of a large proportion of the cases treated at home, the cost of treatment was limited by the pecuniary capacity of the household. The cost of treatment upon this scale amounts to £4,295. £5 is the accepted estimate of the average amount incurred in connection with funeral expenses, and the expenditure arising in this connection falls to be set down at £370. Finally, we have to estimate the value to the community of the lives lost in the course of the epidemic. That human life has a distinct pecuniary value is a consideration which has probably never entered the mind of the average citizen. Nevertheless, the matter is one susceptible of actuarial demonstration. A quotation from the writings of Farr, the greatest authority on the subject, will best illustrate the position of the matter:—'As lands, houses, railways, and the other categories in the Income Tax schedules are of value because they yield annual returns, so, for the same reason, and on the same principle, the income of the population derived from pay of every kind, for professional or other services, and wages, can be capitalized; not precisely, it is true, unless the income of every person living were returned at least as

nearly as incomes subject to Income Tax; but sufficiently near to the true value to show that the value of the population itself is the most important factor in the wealth of the country. . . . The capitalization of personal incomes proceeds upon the determination of the present value, at any age, of the *future annual earnings* at that and all future ages.' The value to the community of an individual member is ascertained by deducting the capitalized future cost of subsistence of the individual from his capitalized future income. Proceeding upon these lines, Farr arrived at the conclusion that 'the minimum value of the population of the United Kingdom—men, women, and children—is £159 a head; that is the value inherent in them as a productive money-earning race.' He estimated the value of the population of the United Kingdom, at the time he was writing, as equivalent to a capital sum of £5,250,000,000, while the 'capital' of the country (using the term in its ordinary sense) amounted, according to Mr. Giffen's estimate to £8,500,000,000.

"Adopting Farr's figures as a basis for the calculation, I have made a rough estimate of the value 'inherent in' the persons who died in the course of this epidemic 'as a productive, money-earning race.' I find that it amounts to the very large sum of £13,540. So that the pecuniary loss to the community of Mid-Renfrewshire, arising in connection with the epidemic, amounts to the enormous total of £21,496! A consideration of these figures may well suggest the reflection whether any investment is calculated to yield a better pecuniary return than the expenditure involved in the operations of the Public Health Department, which have for their main object the prevention of epidemics."

HOME TRUTHS ABOUT POLITICAL IMPOSTORS.

We long ago said our say about Mr. Herbert Gardner, Minister for Agriculture, and all who saw his bewildering incapacity to understand even the simplest questions at the Food Products Committee, knew that our protest about the jobbery was a just one. Mr. Radcliffe Cook, M.P., in *The Times* last week, dots our I's as follows:—

"Perhaps the most glaring failure on the Ministerial front bench has been Mr. Herbert Gardner. Like the fly in amber, the wonder is how he got there. He never showed in the last Parliament any real knowledge of agriculture, though he was fond of reminding the House that he was the representative of a purely agricultural constituency. Indeed, so often did he make this announcement, and so incongruous did it appear, coming from the lips of a well-dressed exquisite, less fitted to speed the plough than to sport with Amaryllis in the shade, that one came to regard him as a kind of natural curiosity—a connecting link between Bond-street and Bœotia—with an affinity to the former rather than to the latter locality. In office he has given evidence of a tractable disposition, and the House has extended to him the good-humoured tolerance one would show to an intelligent child playing at being a man. Mr. Gardner's redeeming quality has been a becoming consciousness of incapacity. He kept silence in the agricultural discussions raised on the Address and subsequently; and when forced to give the House the benefit of his views, as on the second reading of Mr. Lambert's Tenure of Land Bill, his feeble handling of the subject emboldened the leaders of the Conservative party to give to the measure the uncompromising opposition which many of us thought to be so injudicious and untimely.

"Now, I hope that, in the formation of the new Unionist Ministry, the powers that be will take warning from their predecessors, and remember that what the country wants is to be governed by plain business men."

We are quite of Mr. Radcliffe Cook's opinion. Plain business men are much needed, but how many are we getting? We have got Joseph and his brethren, busi-

ness men truly—if anything, rather too much so—but certainly not plain ones. For an artistic bit of fancy work Joseph's anxiety about the cordite contract with one large company in which, of course, unknown to him, the Chamberlain family have almost *all* the shares, would be hard to beat. We sympathise with Mr. Radcliffe Cook's views, but he knows as well as we do, and as everyone who knows Parliament, the lobby, and its methods must honestly own is the case, that seven-eighths of the gang are impostors of the worst type, and that none but the least worthy even of that sorry batch can hope for office. The men who honestly study a question, and know its ins and outs, and who are really concerned with advancing the welfare of English men and women, are tabooed as faddists. Whilst the House of Commons is the happy hunting-ground of needy lawyers, University ignoramuses, stockbrokers, company-promoting swindlers, etc., as it at present is, English industries stand a scant chance of receiving honest patriotic treatment. In this respect there is not a hair's breadth of difference between the one party and the other. Some day the business men of this country may take it into their heads to object to lawyers and University nincompoops representing them in Parliament. When that day comes English trade may get some real attention, but until then it won't.

ADULTERATION PROSECUTIONS.

MILK.

At Wednesbury, on June 25, Charles Nathaniel Babb, farmer, Tong, appeared before the Stipendiary Magistrate (Mr. Neville, charged with having sold milk from which 10 per cent. of the natural fat had been removed. Mr. H. R. Phillips, Shifnal, appeared for the defence.—It appeared that for some twelve years the accused had been accustomed to supply milk daily to the late Mr. Linney, milk-seller, Holyhead-road. On the 19th May (Sunday) he sent two or three churns, and from two of these Mr. Grasson, assistant to Mr. Van Tromp, inspector under the Food and Drugs Act, took samples on the arrival of the churns at Wednesbury station. The samples were afterwards submitted to Mr. Jones, county analyst, who found that one of them was correct, but that 10 per cent. of fat had been taken from the others—Mrs. Linney deposed that she had never had occasion to suppose that the milk supplied by the defendant was in any way deficient in quality.—Mr. Phillips referred to the acknowledged difficulty of deciding whether milk had or had not been deprived of any of its constituents, difference in fodder, in the cows themselves, and in the weather all having an effect; and said his client's family had for some generations occupied the same farm, during the whole of which period nothing had ever been said to the detriment of any member of the family.—The Stipendiary said that all that he had to do was to take the analysis. If the defendant disputed that he should go to Somerset House. Mr. Phillips replied that his client was aware that samples had repeatedly been taken from his churns, and when notice was sent him that samples had been taken on this occasion he took no action, having no reason to suppose that the analysis would be less satisfactory than previous ones had been. He called the defendant, who swore that the milk was taken straight from the cows to the refrigerators, and was then poured into the cans. He could not account for the condition of the milk, but the drought might have had something to do with it. None of the previous day's milk was put into the churns.—The Stipendiary said it was a large quantity (nineteen gallons) from which the cream was taken, and the inspector did quite right in proceeding against the farmer instead of against the person to whom the milk was consigned. He imposed a fine of £5 and costs, making £6 9s. 7d. in all.

At Rugeley, on July 1, before Sir Charles Forster and other magistrates, George Hall, milk-seller, Barton-under-Needwood, was summoned by Inspector Von Tromp for selling adulterated milk. Mr. Thompson appeared for the defence. Defendant was under a contract to supply the King's Bromley Creamery with milk, supplying over a hundred gallons a day. While four churns were being delivered the inspector took samples from one of the churns. The samples were tested by the public analyst, who stated that 10 per cent. of the fat had been extracted. Mr. Thompson urged that there had been no sale according to the provisions of the Act, that defendant was not liable for any act on the part of his servants, and that he had not been notified of the matter in proper form. He called defendant, who stated that the only explanation he could give of the inferior quality was that the cows had been to pasture,

and it had been a very dry season. The magistrates overruled all the objections, and holding defendant to be technically liable, fined him 10s. and 27s. 6d. costs.—Sarah Dukes, of the Trent Bridge Farm, Yoxall, was summoned for a similar offence, but protested that nothing whatever had been done to the milk, and that the sample could not have been taken from her churn, which was on a cart with others. As the inspector could not prove that the churn was defendant's, the case was dismissed.

At Dublin, on June 28, John Lawler, dairy-keeper, Charlotte-street, was fined £5 by Mr. Swifté for having sold buttermilk adulterated with 50 per cent. of water, in addition to 25 per cent. allowed for trade purposes.—Brian O'Brien, 15, Lower Mercer-street, was fined £2 for having sold buttermilk adulterated with 15 per cent. of added water.—Mr. Rooney, 2, Deane-street, was fined £3 for having sold milk which was adulterated with 26 per cent. of added water.—James Tutty, 12, Lower Baggot-street, was summoned for having sold buttermilk adulterated with 40 per cent. of added water.—Mr. Walsh appeared for the defence, and called as a witness Sir Charles Cameron, who deposed to the excellent character of the milk supplied by the defendant for a great number of years, and said that the milk might have been brought to the condition complained of by the defendant's neglecting to have it properly stirred up.—Mr. Swifté said he thought he was justified, in view of the high character of the milk supplied by Mr. Tutty for so many years, and considering the statement of Sir Charles Cameron, in dismissing the summons with a caution. He recommended the defendant to see that the milk was properly stirred in future.—William Ryan, dairy-keeper, of 2, Great Longford-street, was summoned for selling new milk from which at least 37 per cent. of its fat had been extracted.—This being the first prosecution against the defendant, a fine of £3 was imposed.—Mr. M'Sheehy, solicitor, prosecuted on behalf of the Corporation in the various cases, and evidence in support of the summonses was given by Food Inspectors Kane and Lyons.

At Wallasey, on June 26, James Jones, milk dealer, Victoria-road, Seacombe, was summoned for selling milk, which on analysis was found to be adulterated with 6 per cent. of water. Inspector Hallard proved the case, and stated that he saw the defendant's boy delivering milk. He purchased from him a pint, which he divided into three parts, and sent a sample to the public analyst, who certified that the milk was adulterated with 6 per cent. of water. Defendant stated that he sold the milk as supplied to him. The bench imposed a fine of 20s. and costs.

At Bucks Petty Sessions, Anne Rose, Datchet, was summoned for having adulterated a quantity of milk, and also with having abstracted a quantity of fat therefrom, at Datchet, on May 28. From the statement made by the County Analyst, it appeared that the milk submitted to him by Superintendent Sutton, inspector under the Food and Drugs Act, contained 11 per cent. of added water, and that it was deficient of 35 per cent. of natural fat. Defendant said she had put no water in the milk, and she did not know how it got there.—The Bench imposed a fine of £1 in each case, and ordered her to pay the costs.

DISPUTED MILK ANALYSES.

At Lawford's Gate, on June 27, William Owen, farmer, of Ham-brook, was charged with unlawfully selling milk to Inspector Charles Hawkins adulterated with 6 per cent. of added water. Mr. Wansbrough appeared for the defendant, and Mr. Gregory prosecuted.—Mr. Gregory stated the facts of the case, remarking that it had often been argued in that court that such an adulteration might be accounted for by the poorness of the food of the cow. But they could hardly apply the point in this case when they considered the date of the offence. It was when the food of the cow would be of the richest.—Inspector Hawkins spoke to purchasing milk from a servant of the defendant at Eastville, on the 5th ult.—Cross-examined: He admitted that other milk he procured, which had come from the defendant on the previous evening, was found to be genuine, and that other milk got from John Collins on June 5, which had also come from the defendant but on the same morning, had 5 per cent. of added water.—Mr. Wansbrough disputed the correctness of the analysis, and as the Bench would not agree to hear the evidence and then allow an appeal to Somerset House, he applied for a month's adjournment, that they might have a fresh analysis from Somerset House.—It was granted.

A similar case against John Collins, in which Mr. J. Nichols appeared on behalf of the defendant, and Mr. Gregory for the police, was also adjourned for a month.—It was stated that in this instance the milk had been purchased from the defendant (Owen) in the last case, and sold retail as purchased.

TESTING THE COWS.

At Cork, on June 29, a number of persons were prosecuted under the Food and Drugs Act for selling milk not containing the standard quantity of fat. Mr. B. C. Galvin, solicitor, who appeared in support of the prosecutions on behalf of the Corporation, asked

for an adjournment of all the cases to next Saturday, on the following grounds:—It had been agreed between the solicitor for the defendants and himself that they should ascertain, if possible, the legitimate quantity of fat that milk would contain, and, for that purpose they had decided to have samples of milk taken from 20 cows, in the presence of an independent dairyman early in the morning, when the milk was supposed to be weakest. One sample was sent to the city analyst, Mr. O'Mahony, another was sent to Mr. Farrington, on behalf of the farmers, and the third was retained by the local authority for a further analysis, in case of a discrepancy between the two analyses mentioned. The bench adjourned the cases.

OLIVE OIL

At Horsham Petty Sessions Alfred George Wheeler, grocer, Queen-street, Horsham, was summoned for selling a quantity of olive oil not of the nature and substance demanded, at Horsham, on May 27.—Albert Randall, a lad, stated that by Superintendent Byrne's direction he went to the defendant's shop and purchased a flask of olive oil from the assistant. He paid 6d. for it, and waited till Sergeant Brooks came in and then handed the flask to him.—Sergeant Brooks stated that he followed the boy into the shop, and divided the oil into three parts, giving the assistant Lampard one and Superintendent Byrne the other two.—Superintendent Byrne forwarded one of the samples to the public analyst, and on June 9 he received the analyst's certificate, showing that the sample contained 100 parts of cotton seed oil and no olive oil. Dr. Hehner added that cotton seed oil was a useful oil, but much inferior in price and quality to olive oil.—Mr. Henwood, who appeared for the defendant, said he had been in business for seven years, and nothing had been brought against him before. The oil, he admitted, was cotton seed oil, but defendant did not know it, and it was sold to him as olive oil. He produced the invoice to show that it was sold to the defendant as such. Defendant had not tampered with the oil in any way, and he quoted a case in which it had been held that an invoice was in the nature of a warranty, and in which the defendant, a seller of butter, had been absolved from liability under the Food and Drugs Act.—The defendant was called, and stated that he bought the oil from the wholesale list produced, describing it as "sublime olive oil." He also produced the invoice for "half a chest olive oil"—about 30 flasks, at 10s. 6d. He sold the oil in the same form as he received it. The price he paid was a fair one, but it could be bought cheaper at the present time. He sold the oil with confidence as olive, not knowing otherwise.—The Bench dismissed the case, believing that Mr. Wheeler really believed he was selling a pure article.—The Chairman remarked upon the oil being sold to defendant as pure, and Superintendent Byrne said he should probably take proceedings against the sellers. Mr. Henwood said he was not instructed to appear for the dealers, but he produced the invoice they received with the oil from Italy, it being sent to them as olive oil.—Mr. Whitaker: Unfortunately the Englishman suffers generally.—Mr. Henwood: Yes; he has been very much had by the foreigner in this case. (Laughter.)

At Worthing, on June 26, Louis William Wiber, of Worthing, appeared in answer to a summons in which he was alleged to have sold a quantity of olive oil which contained 100 per cent. of cotton seed oil, to the prejudice of the purchaser, on May 27.—Mr. J. K. Nye, of Brighton, defended.—Albert Augustus Schutz, a youth who had been employed by Inspector Knott to assist him in his duties as inspector of weights and measures, stated that on the day in question he went into Mr. Wiber's shop in the Chapel-road and was there served by the assistant, Walter Thompson, with a flask of olive oil, for which he paid 5½d. On receiving the oil witness went out into the street, and gave it to Inspector Knott.—Cross-examined by Mr. Nye, witness said he asked for a flask of olive oil, but did not notice that the assistant hesitated when serving him with it. When Inspector Knott returned with witness into the shop, Mr. Wiber said it was a mistake of the assistant's, and, producing another bottle, added, "That is what you should have had."—Inspector Knott deposed that he instructed the last witness to make the purchase in question and gave him 2s. and a 6d. with which to pay for it. On returning into the street the boy handed him the flask produced, which was then full of oil. Witness went back into the shop with the boy, and as soon as the assistant Thompson had finished serving some customers, he asked him, "Did you sell this olive oil?" at the same time holding up the flask he had received from the boy. The assistant replied in the affirmative, and witness then informed him that the oil had been purchased for the purpose of an analysis. At this moment Mr. Wiber came from a room at the back of the shop, and, turning to the assistant, asked him again if he had sold this as olive oil. Thompson replied "Yes," adding that he said it was flask oil as he put it on the counter. Mr. Wiber then said he declined to sell the oil in question as olive oil, but witness told him that the purchase had been completed before he came into the shop. The oil was subsequently divided into three parts, and before witness left the shop the assistant remarked, in Mr. Wiber's presence, "If he (meaning the boy) had said this is olive oil I should have told him no." Mr. Wiber also told witness in the course of conversation that the assistant had only been in his employ about three weeks.—Cross-examined by Mr. Nye, Inspector Knott said the usual price of olive oil was 6d. or 6½d. a flask, but it could be sold at 5½d.; it all

depended on the amount of profit the retail trader required. The oil sold to the lad was sold and used as a cheap salad oil.—Superintendent Long proved having sent one of the three portions of the flask of oil in question to London to be analysed, and produced a certificate to the effect that the sample was one of cotton seed oil.—For the defence, Mr. Nye submitted that a mistake had been made, and he asked the bench to discern between this and an intention to defraud. He also submitted, as a point of law, that under this particular section of the Act, the actual seller of the article ought to have been summoned, and not Mr. Wiber.—The assistant, Walter Thompson, was then called, and stated that when the boy put down the 2s. piece and sixpence he picked up the flask again and placed it at the back of the counter, asking the boy to wait a minute until he had called Mr. Wiber. As another customer came in just then, however, and witness did not wish to keep the boy waiting too long, he gave him the oil and charged him 5½d. for it.—Mr. Wiber also gave evidence on his own behalf, stating, among other things, that his assistant had made a mistake in charging 5½d. for the oil, which should have been 4½d. a flask.—The bench came to the conclusion that a mistake had been made, and decided to give the defendant the benefit of this by dismissing the summons.

COCOA.

At Ilminster, on June 28, William Vaux, of South Petherton, was summoned for having, on May 14, sold to the police 1lb. of cocoa, not of the quality demanded.—Mr. Cross, of Bristol, appeared for the defendant, and evidence was given by P.O. Catley.—The Superintendent produced the analyst's report, which stated there was 30 per cent. of sugar and starch in the mixture.—Mr. Cross objected to the form of the certificate, and maintained it was not in the form of the schedule.—The Bench upheld the objection, and the case was dismissed.

DISEASED MEAT.

At the Birkenhead Police-court, on June 28, before Messrs. W. Hinson and Joseph Craven, a summons was heard against John Wardman, butcher, Conway-street, for exposing for sale a quantity of meat which was unfit for human food. Inspector Wagstaffe stated that on June 8, at ten o'clock in the evening, he was in Price-street, when he saw two boys pushing a handcart laden with beef. Defendant was walking alongside the cart calling out, "Cheapest man alive." Witness examined the meat in the handcart, and found it was corned beef, which was in a putrid, stinking, and very bad condition. He told Wardman he should seize the meat, as it was quite unfit for human food. Accompanied by Wardman he went to the residence of the medical officer of health, Dr. Marsden, who examined the meat and condemned it. Dr. Harris, a magistrate, also saw the meat, and on his order it was destroyed. There were in the handcart 97 pieces of beef and two of mutton, the total weight being 145 lbs. Witness had previously warned Wardman, but he did not think he had previously been prosecuted on a charge of this kind. Dr. Marsden informed the Bench that the meat was so bad that the servants at his house were rendered sick with the stench of it. The meat was being sold at a penny and twopence a pound. The magistrates' clerk: Would anyone buying the meat observe it was bad from the smell? Dr. Marsden: Well, at eleven o'clock on Saturday night the smell of residents in Watson-street and Price-street is not very keen. (Laughter.) The Bench imposed a fine of £10 and costs or in default two months' imprisonment with hard labour.

GINGER.

At Manchester, on June 27, Sarah Wilshaw, grocer, Urmston, was charged under the Food and Drugs Act with selling adulterated ginger.—The defendant stated that she got the ginger in tins labelled "pure brown ginger" from a Mr. Parish.—Mr. Yates said that recent decisions by the higher courts left him no option in his case. It was held that such labels were not a warranty of genuineness.—A fine of 10s. and costs was imposed.—Arthur Barton was fined the same amount for a similar offence.

WHAT IS GINGER?

In Glasgow Sheriff Court, on June 26, Sheriff Strachan gave his decision on the preliminary pleas raised in the prosecution at the instance of Peter Fyfe, sanitary inspector, against William Aitken, grocer, 475, New Keppochhill-road, who was charged with having, on 1st May, sold to a sanitary inspector ½lb. of ground ginger, which on analysis was found to contain 20 per cent. of exhausted ginger. At the first diet Mr. William Borland, writer, contended on behalf of the respondent that the charge was irrelevant, and took a similar objection in a case in which the St. Rollox Co-operative Society, Limited, 142, Stirling-road, were charged with having, on the same date, sold ground ginger containing 25 per cent. of exhausted ginger.

The Sheriff said that the language of the 6th section of the Food

and Drugs Act, on which this complaint was founded, had been frequently animalverted on and very strongly condemned. In the case of Davidson v. M'Leod, Lord Justice-Clerk Moncrieff said that the case, like the rest of the statutes on the subject, was drawn obscurely and with great want of precision, and Lord Young said that the language of the clause was curiously inaccurate, for the enactment, taken literally, was that no person should sell to a purchaser another article than he purchased. That was manifestly unintelligible, and they found a meaning only by so changing the language as to make it signify that no person who had sold an article of one description should deliver an article of another description to the purchaser. This obscurity and want of precision in the statute (said the Sheriff) might account for the fact that the complaint in this case was conspicuously marked by the same faults. One would have thought that the proper way to frame a charge under the statute would be to set forth that on a particular day a person demanded from the respondent a certain specified article, and that the respondent sold him an article different in nature, substance and quality, inasmuch as it contained something which differentiated it from the article demanded. In the present complaint it was not said what it was the person demanded, or what it was that he got. While it distinctly stated that the article sold was ground ginger, the very foundation of the complaint was that what was sold was not ground ginger, but some substance essentially different. Curiously enough, this form of complaint, obscure and defective as it appeared to be, was a stereotyped form which had been used in such cases ever since the Act came into operation, and had been repeatedly before the High Court without objection. It was construed as meaning that the article sold was essentially different from the article demanded, but why this should not be expressed in definite and specific language it was very difficult to see. It was said on behalf of the respondent that, according to the complaint, the article demanded was ginger, while the article supplied was also stated to be ginger, so that on the face of the complaint itself the article sold and the article demanded were in nature and substance identical; while, according to the statute, they must be in these two respects at least different. From that arose the question whether, in order to constitute a relevant charge under the statute, it was necessary to allege the admixture of a foreign substance. For the necessity of such an averment there was unquestionably high authority. In the case referred to Lord Moncrieff was of opinion that the statute was intended to strike only at the introduction of foreign substances. The view adopted by the majority of the Court, however, was that it must be left to the magistrate who tried the case to determine according to the particular circumstances of each case whether in point of fact the article sold was essentially different from the article demanded. He must hold the complaint to be relevant, because if it were well founded in point of fact the statutory offence had necessarily been committed. That it was true in fact that the prosecutor undertook to establish; but how he was to do that, and thereby solve the problem when ginger ceased to be ginger, was a matter with which, in the meantime, they had no concern. Then it was said that, assuming ground ginger to have been the article demanded, it was not said that any special quality was demanded, or that the demand for ground ginger without qualification implied a demand for something different from what was sold. For it might be that, notwithstanding the presence of the spent ginger in the article sold, it was not only in reality ground ginger, but was of such a quality that it sufficiently answered the demand for that article, no special or particular quality having been asked for. But that was a matter which could only be determined by the evidence. It would not be enough for the prosecutor merely to prove that the article sold contained 20 per cent. of spent or exhausted ginger. He must go further and satisfy him that it was so different in nature, substance, and quality, that it could not in any reasonable sense be termed ground ginger.

His Lordship fixed July 23 for hearing proof.

SPIRITS.

At the Barnsley Police-court, on June 28, two cases under the Food and Drugs Act were brought before Mr. H. Pigott and other magistrates.—William Kilner, landlord of the Travellers' Rest, Ox-spring, was charged with having sold adulterated whisky on the 23rd ult.—John Henry Bundy, Inspector under the County Council, deposed to purchasing a pint of whisky, a sample of which was sent to the public analyst, who certified that the sample was of whisky of the alcoholic strength of 26.8 degrees under proof, corresponding to a mixture of whisky of the minimum legal strength 25 per cent., 95.2 parts; excess of added water, 4.8 parts.—Defendant said he added the water according to printed tables, and this was his first offence.—Fined 10s. and costs.—A like charge was brought against Clara Hinchliffe, of the Britannia Inn, Penistone, and in this case the analyst's certificate certified that there was an excess of water of 2.7 parts.—Defendant said she had used every care in adding the water.—A fine of 10s. and costs was also imposed.

At Market Bosworth, William Emery, innkeeper, of Desford, was charged by Superintendent Granger with selling whisky 24 degrees under the standard at Desford on May 25.—The defendant admitted the offence, but said he had no knowledge of the strength of the whisky, which must have become weaker through standing in a cup for a long time.—Superintendent Granger produced the

analysis made by Dr. Emmerson, which showed the whisky to be $27\frac{1}{2}$ degrees below proof. He purchased one pint of Scotch whisky for 2s. 8d. Evaporation would reduce the strength.—The Rev. R. Titley said the whisky might be weak without being bad, and it was very little under the required standard. Defendant would be fined 1s. and costs, and he must see that it did not happen again.

At Dundee Court of Sessions, counsel were heard in an appeal by James Dunlop, publican, Jarvey-street, Bathgate, from the Sheriff Court of Linlithgow, in a case which arose out of a complaint by Paul Goudie, Sanitary Inspector for the burgh of Bathgate, laid against the appellant under the Food and Drugs Act. The sale complained of was a sale of spirits too much under proof. On the 31st December, 1894, the sale complained of took place; the usual analysis followed upon the 2nd January, and on 15th January the appellant was cited to appear before the Sheriff for trial on the 18th January. The question of law for the opinion of the Court was, whether in this complaint, brought under the provisions of the Summary Jurisdiction (Scotland) Acts, 1864 and 1881, and the Criminal Procedure (Scotland) Act, 1887, the provisions of Section 10 of the Food and Drugs Amendment Act, 1879, should have been complied with, and a citation given on seven days' *inducia*. Lord Adam said that the answer to this question depended upon whether or not the 10th section of the Food and Drugs Act of 1879 applied to Scotland and Scottish procedure. In his opinion it did, and, as under that section, the accused was entitled to seven days' notice, the appeal was sustained, and the conviction was quashed, with 10 guineas of expenses.

At Millom, James Mackereth, proprietor of the Plough Inn, was summoned for refusing to sell a pint of whisky for analysis at Millom at 11 a.m. on the 30th ult., under the Food and Drugs Act, 42 and 43 Vic., c. 30, s. 5. Major Williams, solicitor, Barrow, said he appeared for the defendant, and he had to apply for an adjournment as a witness whom he thought was a very important one was not there.—Supt. Kelly objected, and said the defence had ample time given them, seeing that the summons was served on the 6th of June.—Major Williams said he appeared on the instructions of the Licensed Victuallers' Defence Association, of which the defendant was a member, and the matter had to come before that body, causing a little delay.—Supt. Kelly said they had nothing to do with the Licensed Victuallers' Association; they had to do only with the defendant.—Major Williams intimated that he was prepared to offer defendant and his wife, but they had been unable to procure the attendance of this gentleman whom he regarded as a very important witness.—The Clerk: Was this witness present at the time the alleged offence took place?—He was present immediately after; but I take it it is very important he should attend.—The Bench consented to the adjournment for a fortnight.—The Clerk: I think you should disclose the name of the witness.—Major Williams: It is a Mr. Bower.—Supt. Kelly desired to know his address, but Major Williams said he thought it had nothing to do with him, and the point was not pressed.

VINEGAR.

At Southampton, on June 21, William Day (of Day's Southern Drug Co., Limited, St. Mary's-street), was summoned for selling a certain "white wine vinegar," which was not of the nature, substance, and quality of the article demanded, it consisting entirely of diluted distilled acetic acid.—The Town Clerk (Mr. G. B. Nalder) prosecuted, and Mr. H. D. M. Page, who appeared for defendant, asked the Bench to direct that the third sample in this case should be sent to Somerset House for analysis. His client bought the vinegar from one of the first manufacturers in England, and the sample left with them had since been analysed and proved to be what they sold it for. He should like, therefore, for the third sample to be forwarded to Somerset House.—The Town Clerk remarked that he had such confidence in Mr. Brierley, the Borough Analyst, that he should have no objection whatever to the proposal.—Mr. Perkins said he did not see that there was any alternative, and the case was accordingly adjourned for the purpose mentioned.—William Walter, of 69, Oxford-street, was summoned for a similar offence.—The defendant pleaded guilty.—The Town Clerk said it was only fair to the defendant that this case should stand over until the other was heard. He wished to be absolutely fair in the matter, as the facts were precisely the same as in the previous case, which would really be a test case as to whether what was known as white vinegar in the trade should consist of merely diluted acetic acid or whether it should consist of an acid from distilled wine or malt, as the case might be. He should not, therefore, like to take advantage of the defendant, whose case was on a par with the other which had been adjourned.—In reply to Mr. Perkins, the defendant said he should like to have the case adjourned to get assistance.—Mr. Perkins asked if defendant wanted a sample in his case to be sent to Somerset House?—The defendant replied that he did.—The Town Clerk said he wished to be fair in this case. Defendant having pleaded guilty, it only remained for the Bench to pass judgment, but as the circumstances in this case were the same as in the previous one, he would allow defendant to withdraw his plea.—Defendant did so accordingly, and it was agreed that the sample in this case should also be sent to Somerset House, the summons being adjourned for that purpose.

A PUBLICAN'S CHARGE AGAINST BREWERS.

At Clerkenwell Police-court, Herbert Brittain, licensed victualler, of 136, St. John-street, Clerkenwell, was summoned by the Excise authorities for diluting ale. Evidence was given to the effect that a sample taken for analysing was found to be diluted to the extent of 10½ gallons of water to the barrel of 36 gallons. Mr. Ricketts, for the defendant, said he was not in a position to refute the charge, but the defendant felt there was some mistake. No customer would drink ale diluted to such an extent, as it could at once be detected. The defendant, at any rate, had not watered the beer. He suggested the possibility of a barman having thrown water down the "waste" instead of down the sink, that as the waste drippings from the engine taps went back to the barrel, that might account for it. The only other way to account for the presence of the water was that the ale had been tampered with by the brewer's assistants. Mr. Bros asked whether the defence was one of accident, or that the ale was sold as the defendant received it? Mr. Ricketts said he was not prepared to rely upon the latter defence. Mr. Bros said the defence of accident then showed a nasty way of dealing with beer, and it seemed necessary to protect customers from it. It appeared that the washings of the glasses found their way down to the beer. The defendant himself addressed the Magistrate, and said he had been six years at the house. He had lost £250 in the business, which, however, was now looking up; and just as he was now likely to make a comfortable living this thing was sprung upon him, and he had received a short notice to give up the business. He believed it was a "brewer's trick." Mr. Bros said in view of this statement it seemed well to have the ale traced back to the brewers. He adjourned the case for that purpose.

COFFEE.

At Leek, on June 19, Mary Grace Pilgrim, grocer, Mill-street, was summoned by E. W. H. Knight, Inspector of Weights and Measures, for selling 2ozs. of coffee to Charles Gifford, on May 12, which was not pure coffee.—Mr. Bishton appeared for the defendant, and on her behalf pleaded guilty to a technical offence.—Mr. Knight stated that the coffee purchased by Charles Gifford contained 25 per cent. of chicory. He understood that Miss Pilgrim bought it from a wholesale dealer, and, if that was the case, she had a civil remedy, and could recover any amount she was fined from the dealer.—Fined 1s. and costs.

TINCTURE OF RHUBARB.

A QUESTION OF WARRANTY.

On Saturday, June 29, at the Skipton West Riding Police-court, before J. Slingsby, Esq., and other magistrates, Ann Pickles, grocer, Sutton, was summoned by Inspector A. Randerson for selling 3ozs. of tincture of rhubarb which was not of the nature, substance and quality of the article demanded by him, the purchaser and prosecutor, contrary to section 6 of the Food and Drugs Act, 1875. Mr. G. N. Robinson, Skipton, appeared for the defendant. The inspector stated that on May 17 he visited defendant's shop and purchased 3ozs. of tincture of rhubarb, for which he paid 1s. After going through the usual formalities he divided the sample into three parts, and labelled each part No. 120, and sent one of them to the public analyst, and in due course he received his certificate, which stated that the analyst was of opinion that the sample contained:—

Extractive matters	..	..	4.86 per cent.
Alcohol	..	..	35.62 "
Water	..	..	59.52 "
			100.00

These results show that the sample was deficient in alcohol, containing only about three-fourths of the quantity directed by the British Pharmacopœia to be used in the preparation of tincture of rhubarb.

Cross-examined by Mr. Robinson: The bottle from which defendant served him bore a label with the words "Guaranteed British Pharmacopœia strength," and it was similar to the one produced in court by defendant; he had not had to complain to defendant before about anything as he had not visited the shop before under the Food and Drugs Acts.

Mr. Robinson, for the defence, said that this was not a case for a conviction, as defendant had a warranty within the meaning of the Act, section 26. Still, she was liable to pay costs, as she had not given the Inspector notice of her intention to rely on the warranty which she had. The warranty which defendant had was the label on the bottle, guaranteed B.P. strength, and which he contended was a warranty within the Act, and to uphold his contention referred their worships to the case of *Laidlaw v. Wilson*, decided in the Queen's Bench in 1894 (before Justice Charles), in which a contract for the sale of pure lard, together with an invoice accompanying the goods, and containing the words, "Two barrels pure lard," was relied upon by the respondent as a warranty under this section, and his contention was upheld, and it was for

their worships to decide if defendant had a sufficient warranty it was exactly the same thing as having it written on the invoice.

Inspector Randerson, in reply to the Bench, contended that the label on the bottle was not a warranty at all; it was merely a description, and it would be impossible for him to take any legal proceedings against the wholesale people on that, and to uphold his contention he referred their worships to the judgment in a case, *Farmers' Dairy Company v. Stevenson*. In that case, which was a prosecution for selling milk from which cream had been abstracted, there was a written contract containing the words: "The vendor hereby warrants each and every supply of milk to be pure, genuine, and new milk, unadulterated, and with all its cream on"; and on each of the cans delivered there was a printed label with the words, "Warranted genuine new milk with all its cream on." The magistrates had decided that the labels constituted a description only; but it was held by the High Court that the labels, together with the contract, amounted to a warranty within the meaning of the section.

This showed their worships that the label on the bottle was not sufficient. Had Mr. Robinson put in the invoice with the same words on and signed, then it would possibly have been a warranty.

Mr. Robinson, in reply to the Bench, said, unfortunately, the defendant had not got it written on the invoice.

The Chairman said that the Bench were of an unanimous opinion that the label was not a sufficient warranty within the meaning of the Act, and to enable the inspector to take further proceedings, the defendant would be fined 10s. and costs, which amounted in all to £1 12s. 5d.

CORRESPONDENCE.

DISEASE AND DISINFECTANTS.

To the Editor of FOOD AND SANITATION.

DEAR SIR,—We should be glad if you will allow us to make a short reply to Dr. Marsden's notes which appeared in your issue of June 8, respecting the absence of effect upon nits and moths produced by dilute sulphurous acid gas.

Whilst confirming the author's experience as to the comparative immunity of insect life to the toxic effect of this gas in a dilute form, we altogether disagree with his deduction in reasoning from these premises that it could be of little use in destroying or sterilizing "microscopic germs."

It is not possible to generalize in such matters, or to conclude that, because a reagent is non-poisonous to one form of life, it must act likewise with another, be it higher or lower in the scale of life. Dr. Marsden might as well argue that, because tobacco-juice has little influence on higher animals, it could not be fatal to the aphid or green fly; or that, as Dalmation Insect Powder does not destroy rats, neither could it affect fleas; or, because cheese mites appear to enjoy a meal of strychnine, that the latter would not kill other animal life.

At this period, in the history of hygiene, it seems scarcely necessary to call authentic evidence in defence of sulphurous acid as a disinfectant, especially as regards pathogenic bacteria, which are generally so feeble of constitution that even direct sunlight is known to kill them, but it may be mentioned that many years ago Dr. Baxter, in a report to the Privy Council, stated that in small-pox epidemics sulphurous acid has greater activity in destroying the virus than either chlorine or carbolic acid, and more recently Dr. Koch found that under one per cent. of sulphurous acid, as a gas, destroyed the thread form of anthrax bacillus, the micrococcus prodigiousus, and bacteria of blue pus. The action in very minute quantities of sulphurous acid in checking the growth of disease ferments in beer, etc., is well known, whilst it appears to have but slight effect on the alcoholic yeast.

SULPHUR DIOXIDE.

SALE OF FOOD AND DRUGS ACT PROPOSALS.

THE Board of Management of the Scottish Traders' Defence Association have forwarded the following memorial to the Select Committee of the House of Commons on Food Products Adulteration:—"While recognising the necessity for every employer to exercise a vigilant supervision, and to give full and definite instructions to all employes to thoroughly carry out the provisions of the Act, yet where this has been done by the employer and an employe through carelessness or neglect infringes the provisions of the Act, it is the employer who is summoned, and if the offence be proved he is fined and publicly exposed as the offending party, and grievous hurt to his business thereby follows. We therefore submit that were the Sale of Food and Drugs Act amended so as to include a provision similar to that contained in clause 5 of the Margarine Act, 1887, it would prevent any injustice to an employer who had personally carried out the provisions of the Act, and assist in protecting the interests of the public by making the employes more careful in the discharge of their duties."

THE DANGERS OF CARBOLIC.

CERNE, of Rouen, reports the two following cases in the *Normandie Medicale*: A diabetic male had an insignificant wound of the leg dressed with a compress wet with a weak carbolic acid solution; this produced gangrene which increased in size daily. The patient went to an empiric who replaced the carbolic acid by an ointment of some sort and the gangrene was arrested. The second case was that of an alcoholic, with sclerosis and perforating ulcer of the left great toe; this was dressed with a carbolic solution of 1 to 40; on the second morning all the end of the toe was gangrenous. These cases show the dangers which may result from the local application of carbolic acid, especially if made by the patient himself—that is to say, without precautions or measure. Caution should be exercised in the use of carbolic dressings; the danger is greater when, from any cause, the tissues have less than their normal vitality.

EDINBURGH MILK AND PHILANTHROPY.

"SOME six weeks ago," says the *Edinburgh Evening Dispatch* on June 28, "Mr. A. R. Young, M.R.C.V.S., Inspector of Byres, and Mr. Gibson, Inspector of Dairies in Edinburgh, were ordered by the Medical Officer of Health to prepare for the Health Committee a report on the state of the Edinburgh dairies. These gentlemen carried out their instructions faithfully, and their report has been lodged with the Medical Officer of Health, but it has not yet been made public officially. It so happens, however, that on Tuesday last a summary—or what purported to be a summary—of the report was published in Edinburgh. This summary was calculated to convey to the public mind a most alarming impression as to the state of the Edinburgh dairies. In the said summary, however, one of the most important matters brought out in the report was passed over unnoticed, and some matter was imported into it which was not in the report. The matter in the report which was suppressed in the summary had reference to the fact that a large number of the Edinburgh dairies are of the most admirable design and construction, while the system of feeding the cows and handling the milk in these dairies is altogether above criticism. The matter imported into the summary which was not in the report at all was in the following terms:—

"Several dairymen feed their cows on the sewage grass of Craigtenny Meadows, which gives a larger milk supply at the expense of quality, while the milk from cows fed on this kind of food decomposes and becomes putrid in a very short space of time. The want of cleanliness in many of the byres, and also in some dairies, is stated to be a fruitful cause of disease, while artificial feeding conduces largely to the poverty of milk."

"The person who penned this part of the summary was either terribly ignorant in regard to dairy matters, or else he was trading on the falsely-supposed ignorance of the public in regard to milk supply. It is entirely a mistake to say that sewage grass gives a larger supply of milk at the expense of quality. It is equally a mistake to say that milk from cows fed on this kind of food decomposes more rapidly than the milk from cows fed on any other kind of food. It has also to be remembered that some years ago a Royal Commission was appointed to consider the whole question of the feeding of cows on sewage farms, and after taking the most copious evidence on the subject, the Commissioners reported that they had failed to discover a single case in which the health of the public had been prejudicially affected though the use of milk from cows fed on sewage grass. It may also be noted that on the famous farm of Whittingham, held and owned by Mr. Colman, M.P., of 'Colman's mustard' fame, the whole sewage of the town of Norwich is deposited, and on that farm the finest herd of red polled cows in the world is kept, and their whole milk is sold in the town of Norwich. Then, as to the statement that 'artificial feeding conduces largely to the poverty of milk,' any tyro in dairy practice knows that the very reverse is the case, and that the surest way to increase the amount of butter-fat in milk is to give the cows a liberal allowance of suitable cakes and meals, particularly bean meal. The suppression in this summary, therefore, of the important facts stated in the report respecting the excellent condition of a large proportion of the Edinburgh dairies, and the importance of this absurd matter about sewage grass and artificial foods, which is not in the report at all, was directly calculated to excite an utterly unfounded prejudice against the Edinburgh dairies. By a remarkable coincidence—if coincidence it was—this misleading summary of a report, which has not yet been made public property, was published on the very day preceding that on which a number of medical and other gentlemen, including, we believe, several members of the Health Committee, met in George-street to take steps for floating a new dairy company, to be conducted on what are called hygienic and philanthropic principles. The promoters of this company based their hopes of public support and financial success on this misleading summary of the report by Messrs. Young and Gibson, the contents of which are only known to the members of the Health Committee, no copy of the report being yet available to the public. This 'set of curious chances,' as Koko would have phrased it, throws a curious light on the publication of this summary on the day preceding that on which these medical gentlemen and philanthropic sanitarians met to float their new hygienic dairy company. It was distinctly stated by these company promoters

that the company was to be floated not for speculative purposes but for 'philanthropic' ends, although due care had been taken to ensure that the company would be established on a sound financial basis. The character of the 'philanthropy' exhibited by these company promoters may be judged by the fact that in the prospectus the public are invited to invest their money in the confident expectation that they will get a dividend of 10 per cent. True 'philanthropists' these. This calculation is based on the assumption that the company will be able to get a price of 1s. 4d. per gallon for their milk. How they will get that price while the best dairies can only command a price of 1s. per gallon, is a point that is by no means clear, and if the odd 4d. be knocked off the price per gallon, the 10 per cent. dividend will be done away with at the same time. A good many 'philanthropic' investors have a very vivid recollection of a similar company being established in this city, and they have never fingered either interest or principal since the money was sunk in that 'philanthropic' concern."

MILK AS A DIET.

I RECENTLY tried the experiment of living thirty days with only sweet milk as a nourishment. At the beginning, I had no difficulty in changing my diet from solid to liquid. During the thirty days of the experiment, I lost five and one-half pounds in weight, but I lost no strength. I think that I lost the weight because the weather was warm, and because I took so much exercise. I rode a bicycle considerably during the time, and used 16-pound dumb-bells and other heavy weights every day (except Sundays). I took much more exercise than I usually take, as I was determined to test the thing fairly. On the seventh day of the experiment I ran several foot races with a skilful runner, and was beaten in each race. On the thirtieth day I ran some more races with the same person, but did better than in the first races. This fact proves that I lost no strength. I took four pints of milk daily for the first three weeks of the experiment, and five pints daily for the last week. I think that a healthy person should take about five pints of milk daily when no other food is being taken. I drank milk after intervals of two hours during the day, commencing at seven o'clock in the morning and continuing till ten o'clock at night. Then I would take no more till the next morning.

My principal reason for trying the experiment was to endeavour to establish the fact that persons convalescing from sickness may grow stronger with no other nutriment than sweet milk, and that they are not obliged to take "something solid" to eat, as so many people imagine. Many a convalescent has gone to his grave as a result of overtaxing his weak stomach by putting "solid" food into it. The result of the experiment also shows that the old belief that "bread is the first essential of (human) life" is erroneous.

I believe that a man could live for any length of time, and take heavy exercise all the while, with no other food than sweet milk.

Crawfordville, Ga.

H. F. WHITE, M.D.

ADULTERATION OF CARMINE.

MR. S. FEITLER recently published some rather strange remarks regarding this colouring substance. His experiments demonstrated that the adulteration of carmine is very common. He analysed six samples designated by the following commercial names:—(1) Superfine naccarat carmine; (2) superfine natural carmine; (3) superfine natural carmine; (4) ordinary carmine; (5) antique carmine; (6) superfine naccarat carmine. The three last samples were adulterated. No. 4 contained 88.5 per cent. of ash, consisting of oxide of lead, alumina, and sulphate of lead. This produc-

has, no doubt, been prepared with rosin of a blue tint, by precipitation with acetate of lead and alum. No. 5 was very similar to that called superfine natural carmine, but the proportion of ash amounted to 74.56 per cent. The ash chiefly contained carbonate and sulphate of baryta. According to Borath, it was a barytic corallin lake. Analysis of No. 6 demonstrated that this sample was a mixture of two lakes—one pure cochineal, the other a colouring substance extracted from coal tar. It contained 15.28 per cent. of ash, 16.09 of water, 17.31 of nitrogenized substances, and 51.38 of colouring substances (by difference). The colouring substance was recognised as phloxin. In the samples called natural, the proportion of ash amounted to 7.09-9.18 and 7.24 per cent. This ash was composed of 35.25 and 43 per cent. lumina, and 44.31 and 36 per cent. of lime. These results agree with those already obtained by Dechan. Natural carmine should not contain more than 10 per cent. of ash. Whenever such ash contains salts of lead or of baryta, the sample should be considered as suspicious.—*Le Mercure Scientifique.*

IMPURE SALICYLIC ACID.

SINCE the extinction of Kolbe's patent several firms have taken up the manufacture of salicylic acid by his process. In the greater number of samples it is possible to detect the presence of salol, which proves how defectively the manufacture is carried on. If salol is present, a little of the sample gives an opalescent or turbid solution, when treated with a little aqueous solution of sodium carbonate, and also gives the odour of salol at the same time.—*Pharm. Central., Br. & Col. Dr.*

GOOD REASON FOR CARE!

MRS. MCTURK: "Is this liquorice powder pure, Mither Pi-pounder?"

Pi-pounder: "Quite so, Mrs. McTurk. I make it myself from the purest drugs."

Mrs. McTurk: "Excuse me fer axin' you, but we have to be very careful nowdays, there is so much adul-therry goin' on."—*Mississippi Medical Monthly.*

A WICKLESS OIL LAMP.—Dr. Schuelde, a German scientist and mechanic, has invented a wickless lamp. Its characteristic features seem to be the removal of all necessity for using wick or chimney, and that the oil is burnt not as oil but as gas. The sizes of lamps at present being manufactured are said to be of 80 and 140-candle power, and their reservoir will contain sufficient oil to last for 24 hours' continuous burning, the cost of the light being, it is estimated, about one-eighth to one-fourth of a penny per hour for the full power named. The oil reservoir is at the top of the lamp, and there is connected to it a stout brass tube which runs downward and is provided at its lower end with a filtering wad of cotton wool to arrest any impurities the oil may contain. When it has passed this medium the oil flows along a small-bore brass tube which coils spirally around the main casing of the lamp, and from the upper end of this tube the oil falls, drop by drop, down a slanting iron tube into the "gas chamber," where it becomes vaporized, the gas generated escaping down through tubes to the burner. The gas jets from these tubes, which are very close together, unite when ignited in one large round flame of intense light and beautiful whiteness, the light, it is said, being absolutely steady and having no ill effect upon colours, even of the most delicate tints.

THE PASTEUR GERM FILTER.

The Pasteur Filter prevents the passage of microbes of any kind, is difficult to break and easy to clear, and is effectual in preventing epidemics of cholera, typhoid fever, diarrhoea, and similar diseases.

THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYNET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously had typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value, in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—"The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water."

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Food and Sanitation.

SATURDAY, JULY 13TH, 1895.

THE FEDERATION OF GROCERS' ASSOCIATIONS AND THE GENERAL ELECTION.

The Secretary to the Federation, Mr. A. J. Giles, has issued the following series of questions to local Grocers' Associations, with the request that they be brought before Parliamentary candidates. Questions:

1. Will you support an amendment of the Sale of Food and Drugs Acts and Margarine Act, so as to make them more fair to the honest trader?
2. Will you support a Parliamentary inquiry into the working of the Weights and Measures Acts, with a view to the correction of the injustices now inflicted upon the shopkeeper?
3. Will you oppose any undue prominence being given by the Government to systems of retail trading under the guise of social or philanthropic schemes,

"SANITAS" is a really Non-Poisonous Disinfectant.



"SANITAS" Kills all Disease Germs.

"SANITAS"—"Valuable Antiseptic and Disinfectant."—*Times.*

"SAN-TAS"—"Enjoys general favour."—*Lancet.*

where such systems are nothing more than mere profit-making concerns?

4. Will you support legislative reform which will place all trading concerns on the same level, so far as the payment of income-tax is concerned?
5. Will you support any well-considered legislative proposals for the enfranchisement of the leaseholder?
6. Will you support the tendency of recent legislation to make railway rates more equitable to the trading classes?
7. Do you consider it desirable to support legislation for shortening the hours of labour in shops?
8. Will you support legislation for the promotion of the interests of the retail traders?

The questions are straightforward, practical, and useful ones, but an examination of the means by which a great proportion of the persons seeking Parliamentary honours exist shows that there is no hope of securing more than a lip support for the most important of them—viz., those dealing with leasehold enfranchisement and railway rates. The House of Commons has for generations been filled with the hirelings and toadies of the great ground landlords and with railway magnates. Take as examples the scandalous swoops upon the hard earnings of leaseholders upon the Portman, Grosvenor, and Bedford Estates, in London. On March 25, 1888, leases for 99 years fell in on the Portman Estate to the number of 1,786. Out of Baker-street alone £120,000 in premiums was shylocked from the hardworking shopkeepers and others. Rents were raised to eight times what they had been, this increased amount being exacted by the owner's threat that he would confiscate—lock, stock, and barrel—the business built up by years of hard work, and turn the tradesman adrift to make, in his old age, a fresh connection. The total extorted

from the Portman Estate tenants on March 25, 1888, reached about *a million and a-quarter pounds sterling*.

Lupus is well known as a ruthless, devastating disease that often grinds down the nose. Hugh Lupus Grosvenor, Duke of Westminster, knows what grinding is, and works it for all it is worth. Shopkeeper or private person, it is all the same, if there be any money in the unfortunate tenant's clothes it will be "boodled" out of him before he can get a lease renewed, as hundreds know to their cost. But this lupus is not without mercy in his bowels so long as he can pose as a genuine philanthropist at his country's expense. Just now he is clamouring that English money and blood should flow to secure justice to Armenians. It would be more decent and Christian if he began by doing justice to the leaseholders who have been so shamelessly treated to swell his enormous rent roll.

But it is this class of interest that wants Parliament, and gets there. Before the gigantic abuses of leaseholds and railway monopolies can be dealt with, traders will need to send their own representatives to Parliament, and, if needs be, pay them to do traders' work as Parnell's satellites were paid. One member of Parliament like Mr. Frye is worth a hundred of the Right Hon. and Hon. impostors to those who are the backbone of England—its traders and workmen. The action, however, of the Federation in bringing such questions as leasehold enfranchisement and railway rates before Parliamentary candidates cannot do other than good. It is evidence of the existence of strong dissatisfaction amongst traders, and that they are coming out of the ranks of toadies. We hope ere long to see not a grocers' federation, but a federation of *all* trades—butchers, bakers, grocers, ironmongers, &c., presenting a united demand for the redress of indefensible grievances like these instanced.

SPIERS AND POND'S AGAIN.

EXHIBITIONS, restaurants, and railway station buffets are not often troubled by Food and Drugs Act inspectors, although judged by the results of the few visits made their wares need sampling. The catering is an improvement upon the Mugby Junction days, thanks in a great measure to Charles Dickens, but the advertising evil that has disgraced sylvan retreats with hideous hoardings of swindling pills, etc., has caught railway and exhibition catering, with the result that whisky, wine, etc., merchants have to pay through the nose for show-cards and wall space, or their articles are practically boycotted; that prices are far above a reasonable selling value for recognised standard brands of whisky, brandy, wine, mineral waters, etc. In the face of this fact, and how hard it presses upon the poor who travel by rail, or visit places of amusement, it might at least be expected that the articles sold should be of the very best quality. Inspectors' visits to railway stations have, however, ere this led to prosecutions, and at West London, on July 9, the result of a Food

and Drugs Act Inspectors' investigation at the Empire of India Exhibition came before the magistrate when Messrs. Spiers and Pond, of the Empire of India Exhibition, Earl's-court, were summoned with respect to the sale of milk which was not of the substance and quality demanded.—Mr. Blanco White supported the summons on behalf of the Fulham Vestry, and Mr. Grain appeared for the defendants, instructed by Messrs. Child.—It appeared that on the afternoon of June 13 Mr. C. B. Jones, one of the Vestry's inspectors, went to "M" bar in the exhibition, and purchased of a waiter a large glass of milk, for which he paid 4d. The inspector produced the certificate of the analyst, showing that the sample consisted of sixteen parts of added water.—Mr. Grain said the case was of great importance to the company, who had done their best in framing a form of warranty to insure a supply of pure milk. He read the terms of the contract, which was for a supply of first-class quality of milk, and purity. The particular glass of milk was sold in the same state it was received, but on the day in question there was considerable confusion owing to the incomplete state of the exhibition. Referring to the decisions on the point, he said it would be impossible to affix an abstract of the warranty to every vessel delivered to the defendants.—Mr. Curtis Bennett fined the defendants 20s., with £1 13s. 6d. costs.

TEN YEARS TOO LATE.

CORNWALL is locking the stable door after the steed has been stolen, and is now about to make an effort to suit its butter to the degenerate taste of the London consumers. It is stated that Cornwall, with proper appliances, can increase the quantity of butter by 10 per cent. and the quality be improved so as to render its marketable value 2d. or 3d. per lb. more than at present. In order to secure the uniformity desirable for the London markets, it has been suggested that a creamery be established, to be worked on a co-operative basis. The most that Cornish butter realises at the present is 8½d. per lb. When Cornwall, along with the rest of the United Kingdom, had the chance, 10 or 15 years ago, of doing this trade profitably it treated with careless contempt the advice of far-seeing patriotic Englishmen like the late G. Mander Allender. Now that New Zealanders, Australians, etc., are pouring butter into this country, at prices absolutely ruinous to the English dairy farmer, Cornwall wants to be a butter producer in competition with good quality Australian butter, marketed at even so low a price as 3d. per lb. Co-operative creameries may be very good business for advertising politicians, but we very much doubt if, at this time of day, they will prove a panacea for poverty in Cornwall, or any other part of this kingdom. Whilst English and Irish agriculturists have been Rip Van Winkleing, the wily Danes, Frenchmen, Germans, and our Colonial brethren have been awake, and have collared whatever was worth collaring of the

trade. It is only one more proof of how sorely we need a Board of Trade and scientific experts concerned with pushing English trade in every quarter instead of the University ignoramuses and political nincompoops and hacks who, for services to Mr. Gladstone or Lord Salisbury, and a rigid adherence to the party shibboleths, get fat appointments as chiefs of departments for which they have not a particle of real fitness. Witness Sir Algernon West and the Inland Revenue *carte blanche* to brewers and distillers' swindles. It is political rubbish that has brought upon the agricultural industry unmerciful disaster after disaster, and it is party that afflicts England with Chaplins, Gardners, or Longs, in place of men of brains and fitness, as leaders of impoverished agriculturists to the promised land. Of one thing English farmers may be sure—their guides don't know the way, and if they did, political exigencies would block the passage.

FRENCH ATTACKS ON AMERICAN LARD.

"THE vicious attack upon American lard by the *Journal des Debats*, of Paris, and copied into the *Courier des Etats Unis*, of New York, has been made a subject for diplomatic correspondence between this government and that of France. The publication purports to be based on reports from the municipal laboratory of Paris by a high authority on the subject of food analysis, which stamps certain kinds of lard known to the Paris trade as 'American lard,' or 'alimentary fat,' as not possessing the chemical characteristics of the real article and pronouncing them injurious to the health of consumers. The Paris journal closes with this hot paragraph: 'Fats, similar to these American lards, which are known among us as "flambarts," are not in France given even to the dogs. The French "flambarts" have no other destination than the stearine and the greasing of vehicles. In a word, the importations of these American lards, sold as pure lards, defraud the treasury and octroi, are injurious to our pork breeders, deceive the consumer, and, above all, may be injurious to his health.'

"The Paris authorities have been asked by the state department to name the manufacturers of the deleterious compounds, and to give such facts as they have bearing on quantities shipped from America. These inquiries have been inspired by American producers of pure lard, who are of the opinion that the goods complained of are made in or near France and branded as American products. They do not believe the stuff ever came from this country, but if it does they want to locate the parties who are engaged in the business in order to give them the benefit of a little free advertising.

"It is an old and oft-exposed practice on the part of European dealers to work off inferior merchandise of home production under the head of American products, greatly to the injury of the reputable American trade. In England, for instance, the butchers sell all the good

meat brought from this country as native English beef or mutton or pork, and label all the poor stuff, native and imported, as American."—*Paint, Oil and Drug Review*.

EDINBURGH MILK AND SEWAGE FARMS.

THE *Edinburgh Evening Dispatch* is still girding at the gentlemen who seek to float a new philanthropic dairy company, and on July 5 had the following very clear statement to put before its readers. As there are some English towns where a prejudice exists against the use of milk from cows fed on grass from sewage farms, the sledge hammer onslaught of our contemporary is useful and interesting. "Philanthropy," it says, "must be a good investment if it can be made to yield a dividend that runs into double figures. One of the strategic movements of these 'philanthropic' speculators was to try and create a prejudice against the milk produced in the Edinburgh dairies, on the ground that the cows in these dairies were largely fed on sewage grass during the summer. In regard to this we pointed out that the Royal Commission, which investigated the whole subject of sewage farming some years ago, reported that they had failed to discover a single case in which injury to health had resulted from the use of milk drawn from cows fed on sewage grass. Since our article on the subject appeared last week our attention has been called to some further evidence which fully confirms the conclusions at which these Royal Commissioners had arrived. In his evidence given before the Rivers Pollution Commissioners, the Medical Officer of Health for Edinburgh, Dr. Littlejohn—Sir Henry Littlejohn he will now have to be called—said:—

"The cows in Edinburgh are chiefly fed with [sewage] grass that is grown on Craigenitny Meadows; I have thought that there might be objection to feeding cows upon grass so grown, because I was of opinion that such grass might be of inferior quality; but practically I have failed to detect any bad effects resulting from the use of such grass."

"It might be pertinently asked whether those 'philanthropic' medical men and sanitarians who last week were striving to create in the minds of the Edinburgh public a prejudice against milk from cows fed on sewage grass were unaware of the fact that the highest medical and sanitary authorities of the day had publicly testified before Royal Commissions and other public bodies that there was absolutely no danger to the public health involved in the use of milk from cows so fed? If they did not know this fact, what is to be said of their assumed knowledge of medical and sanitary science? And, on the other hand, if they did know of it, what is to be said of the part they were playing in striving from 'philanthropic' motives and the hope of a 10 per cent. dividend to make the public believe that milk from cows fed on sewage grass was dangerous to the public health? Another point which these philanthropic sanitarians tried to make out against milk from sewage grass-fed cows was that such milk 'turned putrid in a very short space of time.' The most ample evidence is forthcoming to show the absolute groundlessness of this contention also. Mr. Spier, the Scottish Dairy Commissioner, who has conducted most of the dairy experiments which have been carried on for the Highland and Agricultural Society, has fully tested the matter, and he writes to us as follows on the subject:—

"By way of testing this point I set aside eighteen cows for the experiment. Of these, six were fed in the house on sewage grass, six were fed in the house on vetches, and the other six were pastured in the fields. Milk from each of these sets of cows was repeatedly set aside in separate vessels until it became visibly tainted, and out of numerous tests the milk from the cows fed on sewage grass never once turned sour first. In the majority of cases the milk from the cows fed on vetches was the first to turn sour, while the milk from the cows fed on sewage grass and on the pastures was about equal in keeping properties. On several occasions the milk from the three lots of cows was kept for the same length of time and churned separately, but on no single occasion did the butter from the cows fed on sewage grass become rancid before the other lots of butter. Samples of the butter from the three different lots of milk were also sent to the chemist of the Society, and he was quite unable to tell which was which."

"After this our 'philanthropic' friends who aim at netting a 10 per cent. dividend out of their 'philanthropy' will require to be more cautious in their attempts to raise a prejudice in the public mind against the use of milk from cows fed on sewage grass."

We congratulate our contemporary upon the possession of two qualities rare amongst newspapers—saying what it means in a plain, straightforward manner, and being able to differentiate between philanthropy and humbug.

MR HENRY SELL, 167, Fleet-street, has just issued the June supplement of his Registered Telegraphic Addresses, which supplements and corrects the information supplied to subscribers up to and including May 31 for London and May 9 for the provinces. By permission of the Postmaster-General Mr Sell is able to state the trade or profession of firms in the alphabetical lists and will be pleased to add this information in his next edition, without charge, if firms will kindly inform him what their business is.

ADULTERATION PROSECUTIONS.

ADULTERATION IN CORK.

It is a mystery to us how excess water gets into milk, or cream is abstracted. There never occurs a prosecution without the defendant strenuously denying having sold any but the full, true, and particular fluid of the cow herself. On Saturday last, at Cork, there was some particularly hard swearing of this kind.

Nora O'Sullivan, milk vendor, was charged by Sergeant Miller, inspector under the Food and Drugs Act, with having sold milk adulterated with water to the extent of 10 per cent. when compared with the lowest quality milk.

Mr. B. C. Galvin, solicitor, who prosecuted on behalf of the Corporation in this and other cases, handed in an analysis of the milk, and said the milk was supplied by Wm. Murphy, Piercetown. Sullivan gave the sergeant Murphy's name, and in subsequently taking a sample from Murphy's van, it was found that that milk was adulterated in the same way. She stated that she did not interfere with the milk in any way. She believed it was good, and that she sold it as she got it. Under these circumstances, he thought it might not be strictly legal; he would not object to the case being withdrawn, but he would proceed with the case which they also had against Murphy.

Evidence having been given as to the adulteration, the defendant Murphy was examined, and said that neither he nor anyone in his employment, as far as he knew, tampered with the milk. Thomas Reynolds, the lad who delivered the milk, said he never interfered with the milk from the time he got it until he gave it to Mrs. Sullivan.

Dr. Wynne, solicitor, appeared for the defendant Sullivan.

Eugene Riordan, Glasheen, was charged with a like offence. The analyst's certificate in this case showed that the milk had been deprived of 10 per cent. of its fat.—The defendant was examined, and said that neither he nor any one of his employees tampered with the milk. The milk was delivered as it was from the cow.

John Murphy had a similar charge preferred against him. The milk in this case was deprived of 12 per cent. of fat. The evidence given was similar to that in the previous cases. Dr. H. A. Wynne appeared for the defence.

Michael Forrest was similarly charged. The analyst's certificate showed that 8 per cent. of fat had been extracted.

Mr. R. Deyos, solicitor, who appeared for the defence, said he had been listening to the evidence given in cases already heard. His defence was based on the same grounds, and it would shock him to think that respectable farmers would come into court to perjure themselves with the view of escaping prosecutions of this kind. It was an admitted fact that the milk taken from the cow in the morning was weaker than that taken in the evening, and they had it from one of the witnesses that milk generally was weaker in the month of June than at any other time of the year.

The defendant, his milk vendor, and milkmaids were examined to show that the milk had not been tampered with in any way.

John Donovan was charged with the abstraction of 8 per cent. of fat from the milk.

Amongst the witnesses was a boy named James Stuart, an employee of the defendant, who in cross-examination by Mr. Galvin, said that the practice which formerly prevailed of putting a bucket into the churn before the milk was placed in it had long since been discontinued.

Mary Anne Penney was similarly charged, fat in this case being extracted to the extent of 30 per cent. The defendant said she sold the milk as she got it.

John O'Keefe was charged with a like offence. The analyst's certificate showed that 12 per cent. of fat had been removed from the milk.

James M'Carthy was similarly charged. The analyst's certificate showed that eight per cent. of the fat had been removed from the milk.

Mr. Galvin, in stating the case, said that from the start the defendant showed that at all events he had a *bona-fide* belief in the strength of his milk. The case was important, from the fact that the normal standard of milk was directly challenged by defendant, and a test had been made which must carry with it great weight in every court in the kingdom where milk prosecutions were brought. The Corporation had to go to a great deal of trouble in the matter, and on the defendant giving that challenge they caused a sample to be taken from the mixed milk of 28 cows, milked at five o'clock on the morning of the 28th June. The original analysis, taken on June 11, showed the total solids to be 11.86; fat, 2.76; solids not fat, 9.10; water, 88.14, and that the milk had, as stated, been deprived of at least 8 per cent. of fat when compared with the lowest quality milk. The sample taken from the mixed milk of the cows on June 28, gave the following result—total solids, 11.66; fat, 3.15; solids not fat, 8.84; water, 88.34. The milk was a poor quality, moderate in fat.

Mr. A. Blake, for the defence, put in an analysis of the sample given to the defendant. This was made by Mr. Thomas Farrington, and this showed that the total solids were 11.34; butter fat, 2.78, and solids not fat, 8.56. This milk was described as being a very poor quality, being at the limit now in use for the lowest quality natural milk.

Mr. T. Farrington, in answer to Mr. Galvin, said it was im-

possible that the sample he got for analysis might have been tampered with before it reached him. The seal was not attached to the glass of the bottle, and he was able to cut it off without breaking the wax.

Mr. Galvin said if there was any conflict of analysis he would propose that the third sample be submitted for test to Somerset House.

The defendant agreed to this, and the further hearing of the case was adjourned for a fortnight.

Decisions were then given in the other cases, and the following fines imposed:—Norah Sullivan was fined 5s. and ordinary costs; William Murphy £3 and £1 costs; Eugene Riordan £2 and £1 costs; John Murphy £3 and £1 costs; Michael Forrest £2 and £1 costs; Mary Anne Penney £4 and £1 costs; and John O'Keefe £3 and £1 costs.

CURIOUS INTERVENTION BY A MEDICAL MAN.

Our readers will, we think, regard the following case as a curious one of interference by a medical man—not a public analyst—between the local authority, the district public analyst and the officials entrusted with the working of the Food and Drugs Act. Many magistrates believe that medical men know all about food analysis despite the fact that the contrary is the case save in a very few instances, such as those of Dr. M. A. Adams, Sir Charles A. Cameron, and some half-dozen others well-known to our readers. The existence of dual appointments of medical officers of health and public analysts, in some places, encourages this erroneous belief. In the following case the public analyst may have been right or wrong, but the proving of that was not the business of any outsider. Recognised capable public analysts might be entitled to cast aspersions upon the manner in which samples are taken, and dispute the figures, and the Somerset House Court of Reference may, on the secure bed-rock of its laughing-stock milk analyses, traverse the certificate, but we do not know Dr. D'Ath as belonging to the one or the other body.

At Buckingham, on June 22, George Nichols, dairyman, of Maldmoreton, was charged with selling milk adulterated with water to Supt. Clarke, on the 14th May. Defendant pleaded not guilty, and said he was perfectly innocent of the charge. Supt. Clarke said—About 5 o'clock in the afternoon of May 14th, I visited the house of the defendant in Maldmoreton, and saw Mrs. Nichols, wife of the defendant. I asked her if she sold milk, and she replied in the affirmative. I told her I wanted to purchase a pint of new unskimmed milk. She supplied me with it, and I told her I had purchased it for the purpose of having it analysed. I asked her what was the charge for it. She said it was 1d. I paid her for it. I then divided the pint of milk into three parts in her presence. I put it into three bottles similar to the one now produced. One I gave to Mrs. Nichols, one I produce, and the other I gave to Police-constable Smith, who took it to the public analyst at Oxford, the following morning. I produce the certificate of Mr. W. W. Fisher, of Oxford, which states that the milk was adulterated to the extent of five per cent. of added water. On the 19th of May, in the morning, I was present in the field at Maldmoreton, and saw a man milk defendant's cow. He took the milk direct to the defendant's house, where Mrs. Nichols sold me a pint of it. It was just fresh from the cow. I sent a sample of it to Mr. W. W. Fisher, of Oxford, and I produce his certificate, which states that this second sample was perfectly pure. The defendant here asked to be allowed to look at the first certificate, which was handed to him, and he at once folded it up with the intention of putting it into his pocket. Supt. Clarke went to him and tried to take it away from him, when he passed it on to his wife, who was sitting by his side.—The Chairman remonstrated with the defendant, and advised him to hand the certificate back to Supt. Clarke at once. This he seemed reluctant to do, but his wife having handed him back the certificate, Supt. Clarke at once caught hold of his arm with one hand, and secured the certificate with the other.—Mr. Small remarked that if the defendant desired a copy of the certificate, he could procure one by applying at the office, but it was very wrong of him to try to take away the original copy as he had just attempted to do.—Police-constable Smith proved conveying the two samples of milk from Supt. Clarke to the analyst at Oxford.—This was the case for the prosecution, and the defendant was asked if he had anything to say, or any witnesses to call. He said he should like to call Dr. D'Ath, who was sitting in the court.—Dr. G. H. D'Ath then proceeded to the table, and in reply to the Clerk said he believed he could give some evidence in favour of the defendant as to the charge brought against him.—The Clerk said the Magistrates were absolutely bound by the analyst's certificate.—The Bench consulted, and said that though they did not think Mr. D'Ath could give much evidence in favour of the defendant, they were willing to hear a few words from him.—Dr. G. H. D'Ath then said that he had samples of the milk brought to him, and he examined one sample. He made enquiries as to the way in which the samples of milk were taken by the police, and, in his opinion, they were not properly taken. He also said the vessels should have been rinsed with milk, and not water, as every particle of water told against the defendant. He had had the cow milked in his presence, and had taken samples of the milk. He had sent one

sample to Somerset House, but had had no reply. He had also given a sample to Mr. Hooker, of Buckingham, who had made a report upon it, which he proposed to read.—The Clerk said he could not possibly allow this to be done.—The Chairman said the Bench had allowed Mr. D'Ath to proceed so far, but it was very irregular, and they could not allow him to go on any further.—Dr. G. H. D'Ath said he willingly submitted to the decision of the Bench, and withdrew.—Superintendent Clarke said the first sample of milk was taken from a pail in which there were three or four quarts.—The defendant said he had one more witness to call.—The Chairman did not think it would be any good in calling another witness, as they were bound by the certificate of the analyst.—The defendant: I never put water in the milk. It is not worth it.—The Chairman said it was a rather difficult case, and they decided to be as lenient as they possibly could. It was well-known that the standard of milk varied considerably. But in this case two samples had been taken on separate days. Both came from the same cow. In one case the milk was certified to be pure. That was when the cow was milked in the presence of Supt. Clarke, and the sample taken direct from the pail; but in the other case the certificate stated there was five per cent. of added water. It was impossible for them to act against the report of the analyst. The defendant would have to pay a fine of 2s. 6d. and £1 5s. costs, including the analyst's fee of 10s. 6d., making a total of £1 7s. 6d. He added that it was of enormous importance that the poor people should receive their milk pure and unadulterated.—The defendant said he should appeal against the decision on the ground of false accusation.—The Chairman said he could not see that there was any false accusation.—The defendant's wife paid the money and remarked that they had not done with it yet, but should see into it.—The Chairman informed her that it was no pleasure to the Magistrates to sit there and adjudge in such a case. He repeated that in face of the analyst's certificate they could not do otherwise than they had done.

MILK.

At Bootle, on July 5, John Scott, milk dealer, Derby-road, was fined 60s. and costs for selling milk which on analysis was found to have had one-third of its cream removed, and which had been slightly watered.

At Chelmsford, on June 28, Richard Bird, of Broomfield-road, was summoned for selling milk which was not of the nature, substance, and quality demanded.—He was fined 5s. and 7s. 6d. costs.—George Chapman, milkman, of Roman-road, was summoned for a similar offence.—The defendant denied that he adulterated the milk, but stated that he sold it as he bought it from Mr. H. Marriage's man.—The bench fined the defendant 20s. and 9s. costs, but granted a case on a point of law with regard to the form of certificate?—Joseph French, dairyman, of New Writtle-street, was also summoned for a similar offence.—On the application of Mr. Gray, who defended, the case was adjourned for the attendance of the County Analyst.

At Liverpool, on July 3, William Fawcett, 10, Marmonde-street, was fined 40s. and costs for adulterating milk; and a fine of 20s. and costs was inflicted on Frederick Wakefield, 28, Great Howard-street, for a similar offence. A fine of 40s. and costs was also inflicted on William Grundy, 53, Pleasant-street, for depriving milk of a certain portion of its cream.

ABNORMAL MILK—At Southwark, on July 3, John Morgan, cowkeeper, of Southwark Park-road, Bermondsey, appeared to a summons taken out by Mr. Henry Thomas, at the instance of the Bermondsey Vestry, charging him with having sold a sample of milk not of the nature, quality, and substance demanded by the purchaser.—Mr. F. Ryall, clerk to the Bermondsey Vestry, prosecuted; and Mr. Ricketts defended.—At the last hearing, when it was stated according to the certificate of the public analyst that the milk had been adulterated with added water to the extent of 10 per cent., the case was adjourned in order that a further sample might be taken from the cows on defendant's premises. Two samples had been taken and were submitted to Dr. Bodmer, with the result that it was found both samples were of abnormal quality.—In support of this, Dr. Bernard Dyer, public analyst for Leicestershire and Rutland, was called, and stated that he had seen the figures of Dr. Bodmer's analysis, and had no doubt that the two samples taken from the cow were of abnormal composition. The sample, however, upon which the summons was granted was beyond all doubt watered. This sample was not only deficient in solids, but in mineral contents, whilst the other two samples (those taken from the cow), though deficient in solids, were, on the contrary, unusually high in mineral contents, being thus clearly shown to be of abnormal composition. The other sample was, in his opinion, normal milk watered.—Mr. Fenwick adjourned the case, in order that the defendant should have the opportunity of calling scientific evidence.

At Chelmsford Petty Sessions, on July 5, before the Mayor (Alderman Chancellor), the Deputy Mayor, T. Kemble, Esq., Alderman Morton, Colonel Wood, and T. J. Foster, Esq., Joseph French, dairyman and cowkeeper, New Writtle-street, again appeared to answer a charge of milk adulteration. Mr. W. J.

Gray, on behalf of the defendant, intimated that the analyst was still abroad, and unable to attend. However, he asked for a dismissal on other grounds. Since the adjournment, a sample taken direct from the cow had been examined in the presence of competent authorities by Dr. Dyer. This was found to contain from 5 to 10 per cent. of what was called "added" water. It was thus certain that there had been no adulteration, and that the presence of the water and the poorness of the milk was due entirely to the dry season. What the percentage of water was in the sample tested by Mr. Pooley was not stated, and the case was again adjourned.

At Portsmouth, on June 24, Sarah Stafford, of Albert-road, Southsea, was summoned for selling milk with 15 per cent. of the cream abstracted, and which had had 5 per cent. of water added.—Mr. Hamner (from Mr. G. H. King's office) prosecuted.—The defence was that the milk was sold exactly as it was received.—Defendant was fined altogether £3.—Samuel Rawlins, of Napier-road, Southsea, for selling milk with 11 per cent. of the cream abstracted, was fined 40s., including costs.

BUTTER.

At North London, on July 5, before Mr. Paul Taylor, William Prince, of Ball's-pond-road, was summoned for selling to Arthur Bagshaw, an inspector under the Food and Drugs Act, in the employ of the Islington Vestry, butter containing 40 per cent. of foreign fat. Mr. Hoare (for Mr. Lewis) prosecuted, and Mr. Ricketts, jun., defended. The inspector said he went to the shop and asked for butter, and the assistant, William Wyatt, asked, "What price will you have, 8d. or 10d.?" He chose 10d. butter and was served. Then he said that he had purchased the sample for the purposes of analysis, and divided it according to statute. In cross-examination, the witness said that when he called the shop was "upside down," or rather, cleaned out, and the commodities were out of place. Mr. Ricketts, in defence, said he could not resist the certificate of the analyst, but he would add that the defendant was 73 years of age, and had been 43 years a shopkeeper, with no complaints before. It was a fact that Mr. Prince could sell absolutely pure butter for 8d. 10d., and 1s. per lb., and the article which was, he submitted, inadvertently supplied to the inspector was a mixture which was sold at 6d. per lb. Mr. Sidney Prince, son of the defendant, said his father was an invalid, and could not attend the Court. Frequent samples had been taken at his shop, but never before a prosecution; and the shopman had orders never to sell margarine or a mixture as butter. They were supplied with the customary paper declaring the article to be margarine or mixture. The shop was under management and he (witness) was not there more than once a week. This sample was taken on a Monday morning, when practically no business was done, and advantage was taken of this to clean up. Mr. Paul Taylor said he believed this was a case of inadvertence, and a very mitigated penalty would meet it. He would simply order the defendant to pay the costs, 12s. 6d.

HENRY THOMAS, grocer, Magdalen-hill, Winchester, was charged at Winchester Petty Sessions, on June 29, by Superintendent Bowles, of Andover, with selling adulterated butter. Agnes Ely stated that on May 28 she bought from defendant one pound of "salt butter," paying 1s. 2d. for it. The article was sold as "salt butter." She handed it over to the superintendent, who sent it to the county analyst, who certified that it contained 90 per cent. of foreign fat. Mr. Snelling, who appeared for the defence, said the article was purchased by defendant as salt butter from a tradesman in the High-street, Winchester, 11½d. per pound being paid for it. The Bench, in imposing a fine of £1 11s. 3d. inclusive, expressed the opinion that the tradesman from whom defendant had purchased the "salt butter" should pay a portion of the penalty.

At the Manchester City Police-court, on July 3, John Doherty, grocer, 182, City-road, Hulme, was summoned by the Corporation, under the Margarine Act, for exposing margarine for sale without having the same labelled in accordance with the provisions of the Act.—Mr. Rook, superintendent of the Sanitary Department, prosecuted, and the defendant (who did not appear) was represented by his manager.—Inspector Holland said he visited the defendant's shop on June 12, and found on the counter several platters of what seemed to be butter. He asked the defendant's manager for one pound of butter, pointing to one of the platters which was not labelled. The manager knew he was an inspector, and informed him that it was margarine and not butter.—The defendant's manager gave evidence, and said the reason the margarine was not labelled was that he was "cleaning down" just at the time the inspector entered the shop, and had removed the tickets to facilitate his work.—Mr. Rook: I may inform the Bench that that is a very old excuse.—Inspector Holland: When I entered the shop, your worship, this man was not engaged in cleaning down at all. He was in another part of the shop altogether, but he commenced to clean the counter before I left.—The Chairman of the Bench said there seemed to be a slight doubt whether the defendant was selling margarine as butter; if they thought he had done so, they would have imposed a very heavy penalty. However, the margarine was exposed for sale without being ticketed in the usual way, and

for that offence the defendant would be fined £3 and costs.—At the same court, Elizabeth Edwards, provision dealer, 352, Oldham-road, Newton Heath, was also summoned for selling margarine without having the same ticketed on June 12.—Inspector Honliston having proved the case, Mr. Rook said the defendant was only in a small way of business, and he did not press for a heavy fine. He understood she was ill in bed, and had sent another woman to represent her.—Defendant was fined 2s. 6d. and costs.

SPIRITS.

A MOST INGENIOUS DEFENCE.

FOR selling diluted whisky, John Blamey, landlord of the Crown and Anchor Inn, Devoran, was on July 29 brought before the West Powder magistrates at Truro. When Superintendent Bassett went there a decanter containing whisky was on the counter. The landlord did not want to sell him that, but when the officer said he would have that or none, defendant supplied it, and an analysis showed that it was thirty-six degrees under proof.—Defendant, who was represented by Mr. Trevena, of Redruth, stated that early on the date mentioned his wife was confined, and as one of the porters who frequented the house said his companions were coming to drink the health of the new arrival he diluted the whisky in readiness.—Superintendent Bassett: Why did you not tell me that?—Mr. Trevena: Because we thought you would want a dram, too (laughter). The magistrates said the defence was most ingenious, but they could not do less than fine defendant £1 and costs.

AT Alfreton, William Haslam, of South Normanton, was charged with having sold half-a-pint of rum which was not of the nature and substance demanded.—Colonel Shortt, inspector under the Food and Drugs Act, prosecuted.—Wm. Marples, assistant to Colonel Shortt, said on the 20th May he went to the defendant's public-house, and purchased half-a-pint of rum.—Colonel Shortt said that the certificate of the county analyst stated that the rum contained thirteen parts of water. The rum was thirty-five degrees under proof.—Mr. W. W. Nelson, solicitor, Alfreton, who appeared for the defendant, said he was instructed to say that the defendant had not been at the public-house very long, and when the customer came in his wife was engaged in mixing the rum with water. She had put one half of the water in, but forgot to add the other half of the rum.—Defendant was fined £1 and £1 costs.

AT Durham Petty Sessions, on June 20, William Howe, public-house keeper, at Great Lumley, was charged by Mr. B. Scott Elder, inspector under the Food and Drugs Act for the Durham County Council, with selling whisky in which there was an excess of water over and above the quantity allowed.—Defendant's wife appeared and admitted to committing an error in blending. She had not been accustomed to mixing. Fined 20s., with 10s. as costs.

SAND AND CASSIA.

THOMAS CURRY, grocer, Lumley, was charged at Durham, on June 20, by Mr. Elder with selling cassia which, on analysis, was found to be adulterated with 8 per cent. of extraneous matter, 6.70 being sand.—Mr. L. S. Liff prosecuted, and Mr. Standford, of Newcastle, defended.—For Mr. Curry it was pleaded that he bought the cassia packed in a tin as genuine, and had added nothing to it, but sold it as received. His client had no warranty, but the wholesale people who supplied him had.—The Chairman: Defendant ought to have got a warranty. The bench, believing that defendant had erred in ignorance, inflicted a small fine of 5s. and costs.

ARROWROOT.

AT Tenterden, on July 1, Adolphus Fullagar, grocer, of St. Michael's, was charged with selling arrowroot which was not of the substance and quality demanded. The information was laid by Supt. Fowle, and, after hearing the evidence, the Bench inflicted a fine of 1s. and 7s. costs.

MUSTARD.

GEORGE LEE, provision dealer and grocer, 11, Ridgway-street, Ancoats, was summoned to the Manchester City Police Court on July 3 for selling adulterated mustard. Mr. Superintendent Rook, of the Health Department of the Corporation, prosecuted, and Inspector Honliston said that on May 30 he entered the defendant's shop and purchased a sample of mustard. He was served by a girl from a tin which was labelled "Colman's Pure Mustard," and on sending a portion of the sample to Mr. Estcourt, the city analyst,

it was found to be adulterated with foreign matter, probably wheaten starch. The defendant's wife appeared, and said although the shop was in her husband's name she conducted the business entirely, and he took no part in it. The mustard was in a tin labelled "Colman's Mustard," but whether it was Colman's or not she could not say. Mr. Rook said the shop was only a small one, and he did not press the case. Defendant was fined 2s. 6d. and costs.

VINEGAR.

AT Stoke-on-Trent, on July 5, Richard Holt, chemist, Liverpool-road, was charged by Mr. Knight, inspector under the Food and Drugs Act, with selling as white wine vinegar an article which the county analyst certified to be dilute acetic acid. For the defence Mr. Holtom explained that the defendant had recently taken over the business of another person, and the article he had sold as white wine vinegar was included in the stock as such. The Stipendiary said there was no accusation of fraud, and he imposed a fine of 40s. and 15s. 6d. costs.

TINCTURE OF RHUBARB.

AT the Bingley Petty Sessions, on July 3, William Smith, grocer, Bingley, was summoned by Mr. A. Quinlan, inspector under the Food and Drugs Act, for selling compound tincture of rhubarb which was deficient in quality.—The inspector said that the sample he obtained on being analysed was found to be deficient in the amount of extractive matter and in alcohol, only about three-quarters of the proper proportion of these constituents being present, and in addition the drug was almost entirely devoid of saffron.—The defendant said he purchased the drug from a Leeds firm of wholesale druggists, and he sold it just as it was received.—The Bench imposed a fine of 10s and costs, and advised the defendant to insist upon having a warranty in future.

THE METRIC SYSTEM OF WEIGHTS AND MEASURES RECOMMENDED.

THE Select Committee appointed to inquire whether any, and what, changes in the present system of weights and measures should be adopted have agreed to the following report:—

They have in the first place received evidence from witnesses representing many different interests—(1) official, (2) commercial, (3) manufacturing, (4) trade, (5) educational, (6) professional.

They have also received from numerous corporations, school boards, and other public bodies resolutions without exception in favour of the adoption of the metrical system.

Your committee find that almost all the witnesses express a strong opinion as to the complicated and unsatisfactory condition of our present weights and measures, and of the distinct and serious drawback to our commerce, especially our foreign trade, which this system entails, differing as it does from the system (metrical) now adopted by every European nation except ourselves and Russia, as well as by far the majority of non-European countries with which this kingdom trades. The evidence, however, goes further to show that not only is our foreign trade in every branch seriously handicapped, but that the home trade would be benefited if more simple and uniform standards of weights and measures than those now existing were adopted.

Moreover, strong evidence was brought forward as to the serious loss of time incurred by English school children in having to learn the complicated system of tables of existing weights and measures, and the urgent need of the adoption of a simpler system. It was stated that no less than one year's schooltime would be saved if the metrical system were taught in place of that now in use.

Evidence from competent witnesses proved to the satisfaction of your committee that a compulsory change from an old and complicated system to the metrical had taken place in Germany, Norway and Sweden, Switzerland, Italy, and many other European countries without serious opposition or inconvenience; that this change was carried out in a comparatively short period; and that as soon as the simple character of the new system was understood it was appreciated by all classes of the population, and no attempt to use the old units or to return to the old system was made.

In the United States, where a system founded on the English units exists, a commission is at present engaged in an investigation of the same character as that with which your committee is charged, and the Federal Government has this year passed an Act rendering the metrical system compulsory for pharmaceutical purposes.

Your committee believes that the adoption of the metrical system by England would greatly tend to render that system universal.

Your committee recommend:—

(a) That the metrical system of weights and measures be at once legalised for all purposes.

(b) That after a lapse of two years the metrical system be rendered compulsory by Act of Parliament.

(c) That the metrical system of weights and measures be taught in all public elementary schools as a necessary and integral part of arithmetic, and that decimals be introduced at an earlier period of the school curriculum than is the case at present.

A NEW PHASE OF MEDICAL CHARITY.

At a recent anniversary of one of the large and needy hospitals in the millionaire districts of an American city a speaker, filled with enthusiasm for the benefits of the present hospital system, is reported to have said that one of its greatest boons was the saving of expense to the rich man. In proof of such an unjust and outrageous claim he bolstered his statement by comparing the items of expense when a patient was treated at an ordinary hotel by his regular medical attendant with those in a well-equipped charity institution supported by the liberal contributions of a Christian organisation. Instead of a daily expenditure of 5 dols. for hotel accommodation, 5 dols. for a trained nurse, 5 dols. per visit for the physician, and 5 dols. more for the board of the nurse, not to speak of the cost of the medicines from an expensive pharmacy, the patient who entered the hospital in question needed only to pay for his board and a private room. All other outlays were unnecessary and were included in the one item named. Naturally in this connection we think of the physician, who is the only one whose services are virtually considered of no account. The high price of the room added to the donations of the charitable enable the hospital to make a handsome profit, even including the general expenses for nurses, medicines, instruments, and dressings. The attending physician or surgeon, who might be looked upon as the real personage who makes any hospital what it is, is not only entirely ignored, but a deliberate attempt is made to swindle him and his outside associates in attempts at gaining a legitimate livelihood. It would appear from all this that the evolution of medical charity is distinctly in the direction of eliminating the doctor. Another step in this direction would be for hospital-managers to go into the wholesale proprietary-medicine business and prescribe remedies on their own account free of cost to the patients. Why should not money be invested as well and as profitably in medical charities and millionaire clinics, as in railroads, wheat, and mining stock? The men who run the hospitals can command all the needful capital on the hypocritical plea of charity to the poor, can obtain medical services free, can build magnificent edifices, endow beds for cast-off servants, beg for church-subscriptions, and what is now to hinder them from running the medical-charity business entirely in their own interests? They are doing it all the time, though less openly than the distinguished speaker in question has so frankly admitted.—*Medical Record*, June 1, 1895.

REFUSING TO SELL FOR ANALYSIS.

At Lambeth, on July 4, Wm. Turner, a dairyman, of St. George's-street, Peckham, was summoned before Mr. De Rutzen, at the instance of the Camberwell Vestry, for refusing to serve an Inspector under the Food and Drugs Act.—Mr. G. W. Marsden, solicitor to the Vestry, appeared in support of the summons, and Mr. W. H. Armstrong defended. The proceedings were taken under the 17th Section of the Food and Drugs Act.—Inspectors Stevenson and Groom, two officials of the Vestry, saw the defendant in James-street, Camberwell, carrying a hand-can containing milk. As they required a sample for analysis, they asked a gentleman named Arthur Groom to purchase a pennyworth. According to the evidence of the officers, the defendant refused to sell the milk, although the request was repeated by Inspector Stevenson, and eventually upset the contents of the can into the gutter. It was alleged also that the defendant refused to give his name and address until a constable had been summoned.—The defendant said he was collecting cans when he was stopped by the Inspectors, he having finished serving his rounds. He declared that he was about to pour a sample into a measure, when a number of children who had gathered round pressed against him, and caused the can to be upset. His name and address were on the barrow, and he also showed it to the officers on the can.—Mr. De Rutzen remarked that he did not know that he had ever heard a case more clearly proved, and ordered the defendant to pay a fine of £5 and 23s. costs.

ISLINGTON GUARDIANS AND THE QUALITY OF MILK.

The Clerk stated that he had received from the Public Health Committee an analysis of milk supplied to the institutions under the care of the Guardians. The milk supplied to Cornwallis Road contained of fat, 3.25; solids (not fat), 8.42; total, 11.67. Workhouse Schools—Fat, 3.52; solids (not fat), 8.57; total, 12.09. Dr. Cowen said the Board might consider that the milk had been on the good milk line.

The question arises, Would the Guardians get this quality of milk if a 3 per cent. fat standard were adopted?

BILKING BUDDHA.

THERE is a tradition that all the tricks of trade came originally from the Orient. Whether or not we are prepared to concede this reflection upon our originality, it must be admitted that our friends of the Farther East are past masters in the arts of duplicity. The most interesting illustration of this fact which we have come upon in a good while is furnished in the practice, said to have been lately established, of offering short-weight candles to Buddha. The devout follower of Gautama buys immunity from future punishment by regular offerings of candles upon the altar. A bunch of these candles is enclosed in a cardboard case. The whole consignment formerly weighed about nine ounces. With the fall of silver, however, the price of candles went up, and the pious pilgrim was confronted with a serious problem. It was a question of more money or less candle, and he promptly chose the latter alternative, but in order that Buddha may be none the wiser he encloses his short-weight candles in the same sized case as before, and, these being thrown into the altar fire without being opened, he maintains his religious standing without increasing his expenditure.—*Pain, Oil, and Drug Review*.

THE NENAGH GUARDIANS AND SIR CHARLES CAMERON.

MR. MICHAEL GLEESON, Crown solicitor, acting on behalf of the Nenagh Guardians, appeared before the Grand Jury and opposed payment of the analyst's salary because of the alleged delay in the transmission of milk analysis reports, this delay having on one occasion, it was complained, prevented the guardians from prosecuting a contractor whose milk contained a large percentage of water, as the period of one month within which a prosecution should have been brought had elapsed.

The following communication was received from Sir Charles Cameron in reference to the matter:—

"City Laboratory, 17, Castle-street,
Dublin, June 25, 1895.

"GENTLEMEN,—The Guardians of the Nenagh Union have courteously (but I must say not kindly) informed me that they have instructed their solicitor to oppose the presentment of my salary on the ground that I have delayed reporting on articles sent to me for analysis. If the guardians refer to the specimens last sent, I beg to make the following statement:—On the 24th of May the guardians sent two specimens of milk. They were received in my laboratory on the 25th of May and reported upon on the 7th of June, and I presume my report was in the hands of the Clerk of the Union on the 8th of June. The milk was not adulterated, but in the newspaper account of the meeting of the Guardians the Clerk is reported to have stated that my certificate would have been too late to enable a prosecution to have been instituted had the milk been adulterated. The Sale of Food and Drugs Act provides that proceedings in adulteration cases must be taken within 28 days from the date of purchase of the adulterated article. The Clerk had my certificate fifteen days after the date of purchase of the milk, and there were therefore thirteen days left to take any proceedings that might have been rendered necessary had I certified that the milk was adulterated. I make it a point to report on adulterated articles more expeditiously than on unadulterated ones. In my report to the Grand Jury I have shown that during the past six months nearly five hundred articles have been sent to me from the county of Tipperary for analysis, and I think that in no laboratory in the United Kingdom could so much work have been performed with greater expedition and, I might add, accuracy than it has been in mine. I do not like to intrude my personal troubles on the Grand Jury, but I would wish to say that if I have somewhat delayed my reports during the latter part of the half year it was owing to severe illness, concerning which I enclose a certificate from the President of the Royal College of Physicians. To add to my trouble my son, who was co-analyst with me for the South Riding of Tipperary and other places, died last April. Some people have an absurd idea as to the time required for chemical analysis, and think it can always be done in an hour or two. I give here a copy of letter which I have this day received in reply to an inquiry addressed to the Chief Clerk of the Dublin Police Courts: 'The usual adjournment whilst waiting for the certificate from Somerset House is at least a fortnight. Sometimes, however, the certificate has not arrived until after the fortnight has elapsed.—Faithfully yours, E. D. DALY.' Regretting that I have had to trouble you with so lengthy a communication—I am, gentlemen, yours, etc.,

"CHARLES A. CAMERON."

The case referred to in Sir Charles Cameron's letter, Mr. Gleeson stated, was not that of which the guardians most particularly complained, but a previous omission which precluded the possibility of their bringing a prosecution.

In view of Dr. Cameron's explanation and the domestic trouble which interrupted his work, the grand jury were of opinion that the salary ought to be paid, and Mr. Gleeson did not press his opposition.

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Mr. Youxe (the Analyst) brought up his quarterly report up to June last. This stated that the sanitary inspectors had submitted to him 40 samples they had purchased. Of these 18 were milks, 6 butters, 6 breads, 2 flours, 5 coffees, and 2 gins. He had much pleasure in reporting that the whole of the samples were unadulterated, and for the most part of good quality. This was the first occasion, since his appointment 12 years ago, that he had been able to present to the Vestry a perfectly clean sheet. (Applause.) The Chairman remarked that this was a surprisingly satisfactory statement. (Hear, hear.)

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The Select Committee of the House of Commons on Food Adulteration met on July 3 in private, under the presidency of Sir Walter Foster, to consider whether the evidence already taken shall be reported to the House of Commons.

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I am, gentlemen, yours truly,
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Food and Sanitation.

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mistook the "professor of aloes" for a distinguished military man, and complimented him accordingly, whereupon Holloway, taken aback, blurted out who and what he was. Thackeray merely answered, "Oh! well, I made a very natural mistake, for you, too, must have killed thousands of people."

This paragraph is of far greater public benefit than the one about the impudent fraud upon an M.P., and has the merit of being true, whilst the other lacks that advantage. As the press of England is, according to its own showing, above bribery, and filled with regard for the public weal, one might think that these truths about Holloway's nostrums would be published far and wide for the public benefit. But we do not expect that any one of the honest-professing journals will so much as refer to the question for reasons that might be found by an examination of their advertisement columns, and a calculation as to the space Holloway pays for.

DISEASED MEAT IN SHEFFIELD: RIDICULOUS PENALTY.

TAKING the law as it is generally administered, it is a safer proceeding to poison a mass of people than to steal a turnip. We do not mean the artistic poisoning of that primary æsthetic criminal Wainwright, but the vulgar sort, of which a few years ago Mr. George R. Sims wrote in the *Referee*:—

"The revelations which could be made if the mysteries of certain trades could be penetrated would startle the world. We have no enterprising Sweeney Todds among us now, but the 'summer saveloy' is, according to recent revelations, a remarkably mysterious compound; there have been meats in tins which have caused wholesale poisoning, and a pork pie has been known quite recently to be beyond even the digestive resources of an English navy.

"By-and-bye, when a society arises which considers that the health of a nation is nearly as important as its morals, we may have some greater safeguard against the tricks of the provision trade than now exists. At present the resources of civilisation seem to be entirely monopolised in putting a stop to the amusements of the people. As soon as comic songs have been banished from the United Kingdom, the last pair of boxing-gloves burned by the public hangman, the publication of Sunday newspapers suppressed by Act of Parliament, a bet upon a horse made punishable with penal servitude for life, and a game of cards created a capital offence, then some good, benevolent, philanthropic citizen may arise and become convinced by a sudden inspiration that a society which protects the public food supply would be almost as useful as a society for the protection of professional pugilists from black eyes.

"There is a law, it is true, which provides for this class of offence; but what is the use of a law unless it is enforced, and enforced vigorously? There is hardly a day passes without some scoundrel being detected in attempting to foist stuff unfit for human food upon his

fellow-creatures. And when the case is fully proved, the offender is let off with a paltry fine utterly insufficient to deter him from pursuing his evil, but highly profitable, occupation of poisoning the public.

"Let me cite a case which catches my eye even as I write. In a Liverpool paper of last Thursday I find the following:—At the Bolton Police-court a local butcher was summoned for attempting to sell 60lbs. of diseased beef to his customers. The lungs of the beast were described as in a most advanced state of tuberculosis, but the carcass had been dressed so as to disguise all trace of the disease. The butcher was *finéd twenty shillings*. Such a penalty for such an offence is an absurdity. But it is a fair specimen of the way similar cases are treated all over the country."

Such was the practice five years ago when "Dagonet" wrote the above, but our magistrates, whether they be Nupkins the great unpaid, or trained legal lights, are still almost equally tender-hearted. The turnip stealer is incontinently quodded, whilst the vendor of rotten bags of mystery or diseased meat is encouraged by low fines to pursue his abominable traffic. We hold that society requires more efficient protection against those who palm off rotten or diseased food upon their fellows, and that imprisonment with hard labour is the only adequate punishment. Considering how quickly by the sale of diseased meat a dealer can make an extra profit of twenty or more pounds such a fine as the following is a premium offered to traders in dangerous food.

At Sheffield on July 12, before the Stipendiary, William Henry Cowlshaw, butcher, carrying on business at 134, Upper St. Philip's-road, and 243, Duke-street, Park, and residing at Birley House, Gleadless, was summoned at the instance of the Health Committee, and under section 17 of the Public Health Act, 1895, for exposing for sale eight pieces of meat which were diseased, unsound, unwholesome, and unfit for food. The prosecution was conducted by the Deputy-Town Clerk (Mr. Henry Sayer), and Mr. A. M. Wilson defended.—Mr. Sayer said on May 25 Inspector Elcock and Inspector Foster saw eight pieces of beef in defendant's shop in St. Philip's-road. The slightest inspection satisfied the first-named that the meat was unwholesome and diseased, and further examination showed that the animal when living had suffered from tuberculosis in a very advanced stage. The Health Committee attached very great importance to this question, and the effect upon human beings of the consumption of the flesh of animals that had suffered from tuberculosis had also engaged the attention of a Royal Commission.—Mr. Wilson objected to matters of that kind being brought before the Court. They had nothing to do with the particular charge upon which defendant was summoned.—The Stipendiary supported Mr. Wilson's contention.—Mr. Sayer went on to say that proof of the existence of tuberculosis was generally found in the lungs, liver, and other organs of animals, but in the case under notice these parts were missing from defendant's shop,

and another suspicious circumstance was that the pleura had been stripped from the ribs, and this would undoubtedly have shown traces of the disease had it existed. Probably had the meat been sold there would have been less evidence of the existence of disease, but as it was the animal had suffered so badly from the disease that traces were clearly observed in those portions of the carcass which were found in defendant's shop. This was not a prosecution founded on theory, because experienced men who examined the meat found tubercular deposits in it. All the meat was from the same carcass, and it was exposed for sale. When defendant's attention was directed to the condition of the meat and he was asked if he considered it to be fit for human food he said he could eat it himself. He added that he intended to sell it, but remarked, "It's a bit lower down than I like it." He also said he had sold some. Inspector Elcock seized the meat, told defendant that it would be taken before a magistrate, and that he had better be present. Defendant promised to do so, and asked the inspector not to let the matter get into the newspapers. The meat was taken before Mr. G. F. Lockwood, but the defendant did not appear at the appointed time, and an order was made for the meat to be destroyed. The weight of the meat seized was 21 stones 7 lbs., and as it constituted nearly all the carcass, the animal could not have weighed more than 23½ stones, whereas a healthy carcass would have weighed double that. Mr. Sayer pointed out that such a case had not been brought forward for several years, but there had been reason to suspect that meat had got upon the market which was ———.

—Mr. Wilson: I object. That is outside the case.

—Mr. Sayer would not press the point, but there was no excuse for anyone, while, if what he had said regarding the present case was borne out, it was clear that Cowlshaw intended a fraud of a diabolical description.—Inspector Elcock deposed to seizing the meat, under the circumstances explained by Mr. Sayer. It was very dark in colour and emaciated, and there was an utter absence of fat. All the signs went to show that the animal had suffered extensively from tuberculosis. A subsequent examination of the meat revealed the presence of a mass of tubercular deposits at the joints, and it was evident that the disease was of long standing. Defendant asked him not to let the matter get into the newspapers.—Mr. Wilson: There are two kinds of tuberculosis, are there not—one infectious and the other not?—Witness: Not that I know of.—Inspector Foster corroborated the evidence in chief.—Dr. Littlejohn (Medical Officer of Health) said he examined the meat the morning it was seized. In his opinion it was unfit for human food, because of its unwholesome condition. In several places he found distinct traces of the animal having suffered from tuberculosis. The fact of the pleura having been stripped from the ribs was a very suspicious circumstance.—Mr. Sayer: In your opinion, is tuberculosis capable of being transmitted to human beings?—Dr. Little-

john: Quite so.—Mr. Wilson: But there are two classes of tuberculosis? Witness; I don't know that.

—Mr. Wilson: I know there are. Evidently my knowledge is more extensive than yours. There is the tuberculosis contagious and the tuberculosis non-contagious.—Mr. Wilson addressed the court for the defence. He was instructed by defendant that although the meat in question was not of high-class quality, it was perfectly good for human food, and was not in any way diseased. The fact that defendant so openly displayed the meat for sale, and did not in any way conceal it, showed that he believed it to be all right. He bought the animal—a cow—from his brother, and he had no idea that it was suffering from tuberculosis. Mr. Wilson called Arthur Cowlshaw, defendant's brother, a butcher and farmer, living at Arbourthorne Park, who said he bought the cow on May 22 by auction at Worksop Market. He gave £7 10s. for it, and sold it the following day to his brother, the defendant, for £7 15s. So far as he could see, the animal had no disease about it. He also saw the carcass, but did not notice any trace of disease.—By Mr. Sayer: He saw the animal's lungs, and they were perfectly right.—This was defendant's case.—The Stipendiary characterised the case as a bad one, and said he could only be surprised that in the evidence on behalf of defendant such ignorance should have been pretended. Defendant would be fined £15 and costs.

"THE TIMES" ON THE SELECT COMMITTEE ON WEIGHTS AND MEASURES.

THE new Decimal Association will claim that it has won a great victory. And certainly one more testimony in favour of the adoption of the metric system of weights and measures in substitution for our own is recorded. A Select Committee of the House of Commons has almost unanimously reported in favour of the former. There are no qualifications to this opinion, and no misgivings are expressed as to the course to be taken. They would have the metric system at once legalised for all purposes and after a lapse of two years would make it compulsory; and they propose that the way be opened by teaching it in all public schools as "a necessary and integral part of arithmetic." The arguments for these conclusions are familiar. The metric system has been in substance adopted by every European country except England and Russia, and also by many non-European countries. The United States have just taken a step in the same direction, for they have made, by a Federal law, the metric system compulsory for pharmaceutical purposes. The Committee think that not only is our foreign trade seriously handicapped by the peculiarities of the Imperial standards, but that our home trade will be benefited if simpler standards of weights and measures than those now existing are adopted. Certainly the ease with which calculations, complicated and protracted under our system, can be made where the metric system is in use is to be envied. Any child in a French school can rapidly solve problems such as would occupy twice as long a skilful calculator using our measures. There is force in the argument that school children would be the gainers by the change, even if it be an exaggeration to say that "no less than one year's school time would be saved if the metric system were taught in schools." There is the high authority of Lord Kelvin for saying that "our English system is a wickedly brain-destroying piece of bondage." The scientific argument for the change is not to be made light of. Lord Kelvin has repeatedly pressed, in the interest of science, for the abandonment of a system which makes the physicist's task needlessly laborious. Again and again he has pointed out that English men of science are placed at a disadvantage in dealing with weights and measures which must be translated into metric equivalents; and, indeed, in scientific circles, without waiting for legislation, there is a general adoption of the latter. Why, then, has our existing system, with all its incongruities, been retained? As long ago as 1862 the question was examined by a Select Committee. It has never been suffered to go entirely to sleep, and the

Decimal Association has done much to revive interest in the subject. Why has there been a reluctance to do as so many other countries have done, and why, when the proposal has been brought before the House of Commons, has it been defeated?

It is not challenging the soundness of the chief conclusions of the committee to suggest that they have not measured exactly the "area of disturbance" likely to be affected by their proposals. Wholesale and international trade ought not to be exclusively considered. The effect on retail business and the operations of workmen must also be looked at; one must think what would happen if carpenters and tailors, hawkers, hucksters, and costers were told that henceforth they must give up the yard, the pound, and the gallon, and talk of mètres and centimètres, hectogrammes and kilogrammes, litres and kilolitres. In countries where a multiplicity of standards prevailed, the introduction of the metric system was a reform of great value. But throughout the greater part of the British Empire, and indeed among all English-speaking races, the same fundamental units are in use. The reasons which brought about the change in Germany, for example, have much less cogency in this country. In the draft report which Mr. Stevenson submitted to the Committee, but failed to induce them to adopt, it is also pointed out that something has been done to mitigate the inconveniences caused in some branches of foreign trade by our system of weights. The Standards Department of the Board of Trade has taken steps to verify metric standards; and it is stated that "in recent years use has been made of the facilities provided by the Board of Trade for the verification of metric standards in science and the preparation and packing of goods for foreign countries where the metric system exists." Besides, assuming the last Committee to be right in their opinions, is no weight to be attached to the contention, supported by the Committee of 1862, that a decimal coinage is a necessary preliminary to the adoption of a metric system of weights and measures? The two things hang together in more ways than one. In replacing the copper coinage by bronze new links were formed; the new coins were prescribed fractions of an avoirdupois ounce. The Committee recommend that the metric system should be taught in elementary schools, so as to prepare people for the compulsory introduction of the metric system and the disuse of Imperial standards. They even suggest, with the same object in view, that instruction as to decimal fractions shall be given at an earlier age than is now the case in schools. All these measures seem unnecessary if it be true that the system would be instantly understood and appreciated by all classes.

Those most reluctant to adopt further changes would probably, in face of the report of the Committee and the evidence given before it, admit that it is unreasonable to maintain in its present stringent form section 19 of the Weights and Measures Act, 1878, which makes obligatory in contracts or dealings with respect to goods the use of Imperial weights and measures, on pain of the contract being void and the seller being fined. It is not enough to know that "the London County Council have ordered their inspectors of weights and measures not to prosecute traders who use metric standards for the purposes of their foreign trade." It would be expedient to set at rest once and for ever all doubts as to the legal position of those who prepare and pack their goods and publish price lists and catalogues with a view to trade in countries having metric standards. Only the Decimal Association must not drive us too fast. The transition might be more difficult than is supposed by those who look at the matter solely from the point of view of the chemist or physicist in his laboratory, the astronomer dealing with large figures, or the merchant whose business is chiefly with countries which measure by kilos and metres. If there has been a tardiness to adopt the ideas formulated long ago by Laplace and Lagrange, the reason is not solely the folly and laziness of mankind. There can be no objection to employing for scientific purposes a metric system and abandoning "the British insularity in weights and measures" on which, not without reason, one or two generations of men of science have poured contempt. But the committee is in a hurry to do much more. France, it is to be remembered, did not for a time make the metric system absolutely exclusive; the old weights and measures were, under certain restrictions, temporarily tolerated. We are probably being educated up to the point at which its introduction would work no great inconvenience and would be accepted by those who would now resent its compulsory adoption. In many arts and sciences the system is in use, and names once strange to ordinary Englishmen have become familiar. But it would be well to have more convincing assurance than any the Committee offers before assuming that popular education on this subject is complete. Perhaps, if we wait a little longer, some improvements in matters of detail may be hit upon. The latest and not the least enthusiastic advocate of the metric system contends that "the French nomenclature is not only bad, but the worst in existence," and it would be a pity to adopt in two years terms which might be discarded in as many more.—*Times*.

ADULTERATION IN BRADFORD.

THE Borough Analyst (Mr. F. M. Rimmington), in his report for the quarter just ended, states that sixty-one samples of food and drugs had been taken, and of these only three had proved to be adulterated. Proceedings had been taken in these three cases.

ADULTERATION PROSECUTIONS.

SPIRITS.

SILLY MAGISTRATES.—At Carrickfergus Petty Sessions, on July 9, Sergeant Phillips, acting as inspector under the Food and Drugs Act, summoned William Hood, publican, North-street, for having in his possession on his licensed premises on the 27th ult., a quantity of whisky which was adulterated in contravention of said Act. Mr. W. H. Arbuthnot appeared for the defendant. Complainant deposed to visiting the premises and purchasing six glasses of whisky. He kept a third, gave a third to defendant, and sent the remaining third to Dr. Hodges, borough analyst. He produced a certificate from the analyst, which showed that the whisky was under proof. Mr. Arbuthnot objected to the analyst's certificate being taken as evidence, and argued that he should have been in attendance. Their worships upheld the objection, and dismissed the case.

AT Devonport, on July 10, Sarah Ann Tozer, landlady of the Friendship Inn, Albert-road, Morice Town, was summoned by Mr. G. T. Geaton, inspector under the Food and Drugs Act, for selling to him, on June 12, one pint of brandy, which was not of the quality and substance demanded by the Act.—Mr. T. W. Martyn (Rundle and Martyn), appeared for defendant, who was unable to be present, and Mr. J. P. Goldsmith conducted the prosecution.—Mr. Geaton purchased a pint of brandy from defendant, and having had a portion of it analysed by Dr. E. C. Bean, it was found to be 36·7 under proof. The Act allowed it to be 25.—Mr. Martyn, on behalf of defendant, pleaded guilty.—Fined £1 and costs.

HEALTH RESORT DRINKS.—At Douglas, on July 12, Mr. Dowson, Theatre Royal Hotel, was fined 10s. and costs in respect of rum 1·3 below the standard; John Savage, grocer, 10s. and costs, rum 3·8 below standard; Hannah Taylor, Market Inn, 10s. and costs, for Irish whisky 3·7 under standard. A second charge was preferred against the latter in respect of Scotch whisky. The inspector said it was a very bad case, the whisky being 14·7 below standard, and he asked for a heavier fine.—The High Bailiff agreed that it was a bad case, and increased the penalty to £1 and costs.—Each offence was admitted.—The advocate for Savage stated that the adulteration was due to his son having broken the spirit test.

AT Dartford, on July 8, Alfred Richard Morris, of the Anchor-in-Hope publichouse, East Wickham, was summoned for selling half-a-pint of whisky of J. Tucker, Inspector of Foods and Drugs, on June 5, which was 27·4 degrees under proof, or 2·4 below the legal limit.—Defendant was fined 20s. and costs.

MILK.

AT Olerkenwell Police Court, on July 9, the Manor Farm Dairy Company, Limited, of Highgate, was summoned by Patrick Mernagh, sanitary inspector, before Mr. Bros, for selling, on the 8th ult., to the Great Northern Hospital, Holloway-road, a churn of milk adulterated with 14 per cent. of added water. Mr. Ricketts, solicitor, appeared for the defendants. The inspector said he saw one of the company's carts as it was entering the gates of the hospital, and told the driver he required a sample of milk from one of the churns. A sample was provided him, which was bottled, revealing the addition of 14 per cent. of water to the milk. Mr. Ricketts called witnesses to prove that the milk was sold to the hospital authorities precisely as it had been received by the company from a farmer by rail, the churns having been labelled, "Guaranteed pure new milk with all its cream." The milk received by the company was frequently tested, but the churns in question may not have been. The company had contracts with several farmers for the supply of pure milk. It was stated that a summons against the farmer had been taken out by the Islington Vestry. Mr. Bros dismissed the summons.

AT Chelmsford, on July 5, with regard to the case of Mr. Joseph French, dairyman, of New Writtle-street, who was last week charged with selling milk that was not of the nature, quality, or substance demanded, Mr. Gray, who defended, said he had had a letter from the public analyst, who was now at Rouen, stating that he should not be home until July 7. He (Mr. Gray) therefore suggested that the case should be allowed to drop, as a sample of milk had been taken from Mr. French's cows in the presence of reliable witnesses, and had been submitted to another analyst (Dr. Dyer), who certified that the milk contained from 5 to 10 per cent. of "added water."—Mr. Kemble: The water had not been put in, though.—Mr. Gray: No, sir. It was entirely due to the poor quality of the feed during the past few months.—The Deputy Chief Constable thought it would be better for the case to be again adjourned for a fortnight, and this was agreed to.

AT the Barnsley Police-court, on July 12, at the instance of John Henry Bundy, Inspector of the County Council, under the Food and Drugs Act, Elizabeth Blackshaw, of Industry-row, Stairfoot,

was charged with having sold adulterated milk.—The inspector proved making the purchase, a sample of which had been forwarded to Mr. Allen, public analyst, who certified that the sample was adulterated to the extent of 10 per cent. of water.—Defendant said she sold the milk as she was supplied with it by Mr. Henry Micklewaite, farmer, and made 2d. a gallon profit. She thought it was of good quality.—Fined 5s. and costs.

At Stoke, on July 5, Samuel Downs, of the Hill Farm, Newcastle, was summoned for selling milk from which a portion of the cream had been abstracted, on May 28. Mr. Knight prosecuted, and Mr. Sproston defended. Evidence was given as to the taking of two samples, one being from a small can, and the other from a large one. These were pronounced as inferior to pure milk.—Mr. Sproston contended that the milk in the small can was being carried to a purchaser and was taken from a boy, not the defendant's son, the defendant merely acting as carrier. In the other case he said the sample was taken in Newcastle and not in Stoke, and therefore out of the Stoke inspector's district. The defendant was eventually fined 40s. and costs.

BICYCLISTS' MILK.

At Cheshunt, on July 10, before T. Micklem (chairman), R. Ewing, and S. Trotter, Esqrs., Louisa E. Cook, a milk vendor, of Hoddesdon, was summoned under the Food and Drugs Acts.

Mr. Thomas Johnson, the inspector, stated that about half-past twelve noon on the 18th June he visited defendant's dairy at Little Giddins, Essex-road, Hoddesdon, and noticed placards in the window bearing the words "milk and soda" and "new milk." He entered the premises and asked for two glasses of new milk. Defendant served him with the milk, and on his telling her that it would be analysed, she observed, "It is last night's milk." She offered to get him newer milk, stating that her reason for giving him "last night's" milk was that she thought he was a bicyclist, and that it would be better for him. (Loud laughter.) Mr. Johnson added that a sample of the milk was forwarded to the public analyst, who, in his report upon it, stated that it was 60 per cent. deficient of fat.

Defendant: I am very sorry that you called at my house. (Laughter.) I thought you were having a walk, and I wished to oblige you. (More laughter.) The milk I gave you was set for cream.

In reply to the Bench, Mr. Johnson said defendant kept a dairy and a shop combined.

Defendant: I beg your pardon, it is not a shop. (Laughter.)

The Chairman: Was the pan from which defendant obtained the milk on the counter?

Witness said it was not a "counter pan." There were several pans in the place, and this particular one was being used for the purpose of setting cream.

The Clerk asked if the Inspector did not see that a portion of milk was in the course of abstraction, and Mr. Johnson said he asked for new milk. He took what defendant gave him; but he did not receive what he had asked for.

Mr. Johnson was asked whether the defendant by pushing back the cream to get at the milk was not making a disclosure of what she had, and he replied that his contention was that if defendant had been desirous of serving him with what he asked for he would have received a fair share of cream.

Defendant: If I had known you wanted it for analysis I would have given you cream. (Laughter.)

The Chairman told defendant that the Bench were not quite sure that she had not committed a technical offence. There was in some measure a doubt as to whether—when she pushed back the cream—she was disclosing or not. When she advertised an article for sale she must take care to supply what was asked of her. As there was a doubt as to technical liability she would receive the benefit of the doubt.

Defendant: Thank you; good morning.

PROFESSOR TICHBORNE ON SIR CHARLES CAMERON.

At Ballieboro' Petty Sessions, on July 2, Sergeant Keane, R.I.C., Inspector of Food and Drugs, had two summonses against Mr. Charles Cranston for supplying butter-milk as a contractor to Bailieborough Workhouse, which Sir Charles Cameron, Public Analyst, stated to be adulterated. Sergeant Keane applied to have the cases withdrawn, as he had been served with a notice by Mr. Chambers to produce Sir Charles Cameron as a witness in the cases, and the bottles containing the third part of the sample in each case had burst.—Mr. Chambers: The summonses I have seen says that the milk contains 100 per cent. of added water, which means that it was all water.—Dr. Ryan: That is not so. It means half water and half milk.—Mr. Brett, D.I.: It means that 75 per cent. of water has been added to 100 parts of milk, in addition to 25 per cent. allowed for churning purposes.—Dr. Ryan read the certificate, and said that it meant that the sample was half water and half milk.—Mr. Chambers: I was speaking to Professor Tichborne last week, and he says the certificates are misleading, and that no other analyst would give them in such a way except Sir Charles

Cameron.—Mr. Irwin: I would think that the certificate means that the sample was all water.—Dr. Ryan: It means that 100 per cent. of water was added to 100 per cent. of milk.—Mr. Chambers: I have no doubt but that is what it means.—Dr. Ryan: At all events, the cases are withdrawn.—Mr. Chambers: I ask for costs.—Mr. Broome: We have been striking fines by false analysis up to this.—Dr. Ryan: How is that?—Mr. Broome: If he says the milk was all water—it is not true.—Dr. Ryan: But he does not say that.—Mr. Chambers: There was another sample of buttermilk taken by Sergeant Keane, and I handed one of the bottles to Professor Tichborne, who certified that it contained 12 per cent. of added water, which was not in excess of 25 per cent. allowed for churning purposes.—Dr. Ryan: What does 12 per cent. of added water mean in that?—Mr. Chambers: It means 12 per cent. of its own weight.—Sergeant Keane: The certificate I got in relation to that case was that the milk was poor and doubtful.—Mr. Chambers: I served notice on the police to produce Sir Charles Cameron for examination, and I ask for costs.—Mr. Brett: If Sir Charles Cameron is produced as a witness in any case in future, I will ask that the total costs be paid by the defendant if he is convicted.—Mr. Chambers: The magistrates cannot allow over £1 costs.—Mr. Brett: On the 26th of last month Mr. Chambers was informed that the case would be withdrawn as part of the evidence had exploded.—Sergeant Keane, in reply to Dr. Ryan, said that 23 days elapsed in one case before getting a reply from Professor Cameron, and longer in the other.—Mr. Chambers: The reason I ask for costs is to raise the question before the Grand Jury.—Mr. Gibson: I would be inclined to give 10s. costs in each case.—Mr. Brett: I object to any costs being given.—Mr. Chambers: I object to Mr. Brett interfering in the case. Sergeant Keane is the servant of the Grand Jury and independent of him.—Mr. Brett: I can appear in any case brought by the police. In this case, through an accident, we cannot produce the necessary evidence.—Dr. Ryan: There has been too much delay in giving a return of the analysis, and Sir Charles Cameron is a servant of the Grand Jury.—Mr. Brett: Then your reason for allowing costs is unnecessary delay?—Dr. Ryan: Yes.—Mr. Irwin: Both cases are withdrawn, with 10s. expenses allowed to the defendant in each. I dissent from the order as regards costs.—Mr. Brett: I quite agree with you.

ANOTHER MILK CASE.

The adjourned case against Joseph O'Reilly for supplying milk, as a contractor, to the workhouse, on April 30, which Sir Charles Cameron certified to be adulterated with 10 per cent. of added water, was called.—Mr. Chambers, solicitor, appeared for defendant.—Mr. Brett, D.I.: This is a queer case. Sir Charles Cameron says it was adulterated with 10 per cent. of added water, and Mr. O'Reilly's analyst said it was adulterated with 5 per cent. of added water.—Mr. Chambers: That is a wrong statement. He said that by making an allowance for deterioration he had no doubt that it was pure milk.—Mr. Brett: The professors at Somerset House say it was pure milk.—Dr. Ryan (reading from certificate): "From consideration of the result of analysis, and making allowance for deterioration by age, we are of opinion that the milk affords no evidence of added water."—Mr. Chambers: There is no way of fixing a standard for new milk.—Dr. Ryan: There is no difference between water naturally in milk and the water added to milk.—Mr. Irwin: The Somerset House analysis is conclusive.—Sergeant Keane: There is a fee of 10s. 6d. to be paid for the certificate.—The case was dismissed and 10s. costs allowed to the defendant, Mr. Irwin again dissenting against allowing costs.—Mr. Chambers: If the grand jury refuse to pay the expenses I won't ask it from the sergeant.

GINGER.

At Dartford, on July 8, George Green, grocer, of Belle Vue Welling, was summoned for selling $\frac{1}{2}$ lb. of ginger which consisted of 25 parts of whole ginger and 75 parts exhausted ginger.—Defendant said he took over the business in April, and this ginger was in stock at the time.—He was fined 7s. 6d. and costs.

At Leek, on July 15, Thomas Goodwin, grocer, of Chorley-street, and Richard Oliver, grocer, Britannia-street, both of Leek, were fined 10s. and costs for selling adulterated ginger.—In Goodwin's case the ginger was proved to contain 30 per cent., and in Oliver's case 75 per cent. of spent or exhausted ginger.—Both defendants submitted that they sold the ginger as they had bought it, and, after they had been fined, they were advised to take proceedings against the persons from whom they had purchased the article.

TINCTURE OF RHUBARB.

At Bingley, on July 3, William Smith, grocer, Bingley, was summoned by Mr. A. Quinlan, inspector under the Food and Drugs Act, for selling compound tincture of rhubarb which was deficient in quality. The inspector said that the sample he obtained on being analysed was found to be deficient in the amount of extractive matter and in alcohol, only about three-quarters of the proper portion of these constituents being present, and in addition the

drug was almost devoid of saffron.—The defendant said he purchased the drug from a Leeds firm of wholesale druggists, and he sold it just as it was received.—The Bench imposed a fine of 10s. and costs, and advised the defendant to insist upon having a warranty in future.

BUTTER.

THE case of William Potter, shopkeeper, Billingley, which came before the Barnsley Bench on July 15 was a very hard one—even the Bench felt it so. He was charged first with selling margarine which was not properly labelled as such, and with selling adulterated butter.—The first charge was withdrawn; Mr. Rideal, on defendant's behalf, pleaded guilty to the second.—J. H. Bundy, inspector under the Adulteration Act, proved that he bought three-quarters of a pound of butter from the defendant on the 14th June for 8½d. It had been analysed, and Mr. A. H. Allan certified that it contained 40 per cent. of butter and 60 per cent. of margarine.—Mr. Rideal said the stuff was bought from a wholesale dealer in Barnsley, and was invoiced to defendant as "Best Kiel butter," and he paid 10½d. per lb. for it wholesale. He kept a very small shop, and sold about six pounds of butter per fortnight. This was got as usual, and he (Mr. Rideal) was assured by the gentleman who supplied it that he had no reason to doubt it was not butter, but, dealing largely, he was unable to trace the source from which it had reached him. The defendant had acted quite innocently in the matter, and was entitled to sympathy in the case.—A fine of 5s. and the costs was imposed.

At Dartford, on July 8, Arthur Edmund Bowes, grocer, of Belvedere, was summoned for selling ½lb. of butter which consisted of 40 parts butter and 60 parts of foreign fat, on June 7.—Defendant was fined 40s. and costs.

LINSEED MEAL ADULTERATION.

ABORTIVE PROSECUTIONS.

At Ligoniel Petty Sessions, on July 5, before Messrs. John Rodgers, J.P. (chairman); George Kidd, J.P.; Felix O'Hagan, J.P.; John Mack, J.P.; and Dr. O'Connell, J.P., a number of shopkeepers residing at Ligoniel were summoned by Sergeant Higgs for having for sale linseed meal that was adulterated. The evidence went to show that there was a large percentage of adulteration in the meal. Mr. Wellington Young, who defended, pointed out that the case did not come within the scope of the Food and Drugs Act. The case was dismissed.

IMPORTANT APPEAL UNDER SECTION 10 OF THE FOOD AND DRUGS AMENDMENT ACT, 1879.

In the Justiciary Appeal Court, on Friday, June 28, before Lords Adam, M'Laren, and Kinnear, the appeal *Dunlop v. Goudie* was heard. James Dunlop, publican, Jarvey-street, Bathgate, took an appeal from the Sheriff Court of Linlithgow in a case which arose out of a complaint by Paul Goudie, sanitary inspector for the burgh of Bathgate, laid against the appellant under the Food and Drugs Act. The sale complained of was a sale of spirits too much under proof. On the 31st December, 1894, the sale complained of took place; the usual analysis followed upon the 2nd January, and on January 15th the appellant was cited to appear before the Sheriff for trial on January 18. The question of law for the opinion of the Court was whether in this complaint, brought under the provisions of the Summary Jurisdiction (Scotland) Acts, 1864 and 1881, and the Criminal Procedure (Scotland) Act, 1887, the provisions of section 10 of the Food and Drugs Amendment Act, 1879, should have been complied with, and a citation given on seven days' *inducia*. That section provided that in all prosecutions "the summons shall not be made returnable in a less time than seven days from the date it is served upon the person summoned." Lord Adam pointed out the appellant only got three days' *inducia*. The question was whether that was sufficient, and that question depended upon whether or not the 10th section of the Act applied to Scotland and Scottish procedure. The section occurred in an Act applicable to Scotland, and one of the principal reasons for introducing the Act was to reconcile differences between England and Scotland, and it would be rather difficult to hold that the result of the Act was to create greater differences than had previously existed. His Lordship had no doubt, notwithstanding the fact that English nomenclature was used in the section, that it was meant that it should be applicable to Scotland as well as to England, and that every person accused under the Act in Scotland was entitled to a charge of seven days before being asked to appear. The question remained whether, having regard to what took place

before the Sheriff, any reason existed why the appellant should not be entitled to found upon the error that had been committed. Upon that question also his opinion was in favour of the appellant. The other Judges concurred, and the appeal was sustained, the conviction was set aside, and the appellant was found entitled to ten guineas expenses.

Counsel for the Appellant—Mr. Young. Agent—Robert Broach, solicitor.

Counsel for the Respondent—Mr. M'Lennan. Agent—Thos. Liddle, S.S.C.

SHOREDITCH VESTRY AND FOOD ADULTERATION.

It is usual for the clerk when reporting the result of prosecutions under the Food and Drugs Act not to give the name of the offender, but J. J. Clark now brought forward a motion placed upon the agenda by himself and Mr. F. Lockyer to the effect that the clerk should state the names.—Mr. Clark pointed out that the adulteration of articles gave one tradesman an unfair advantage over another by enabling him to undersell. He did not think the fines inflicted were at all adequate.—Mr. Porter seconded.—Mr. Wells moved that this should be done after the first conviction.—Mr. Belstead agreed with the amendment, but in the end the original motion was carried.

ADULTERATION IN POPLAR.

THE analyst (Mr. W. C. Young) has reported that during the quarter ending June last, he had analysed 72 samples submitted to him by the Sanitary Inspectors. This total included 36 of milk, 6 of butter, 12 of bread, 6 of oatmeal, and 6 of coffee. Of the milks, 25 were genuine, 1 deficient in cream to the extent of 90 per cent., and 10 adulterated with water in various proportions from 5 to 40 per cent. respectively. Of the butters, 4 were genuine and 2 adulterated, 1 with 60 per cent. and the other with 95 per cent. of foreign fat. Of the oatmeals, 5 were genuine, and 1 adulterated with 15 per cent. of barley meal. Of the coffees, 5 were genuine and 2 adulterated with chicory to the extent of 70 and 89 per cent. respectively. The samples of bread and flour were all genuine and unadulterated.

MONTROSE AND MILK ANALYSIS.

MR. WILSON, Sanitary Inspector, reported to a meeting of Police Commission on Thursday that several samples of milk had been forwarded to an analyst for examination. On April 5, 12 samples had an average of 3.23 per cent. of fat; on May 14, 11 samples showed 3.40 of fat, and on June 26th 12 samples averaged 3.22. A few of the samples were of a rather poor quality, and several were designated as high class, and the majority showed a quality of fairly good milk. No adulteration was reported by the analyst. Ex-Baillie Ford thought that the names of those who supplied the bad milk should be published. Provost Mitchell, who presided, pointed out that if that were done they would be laying themselves out for an action of damages, and stated that since the milk had been sampled and analysed the quality had become better. The matter then dropped.

ADULTERATION IN DERBYSHIRE.

MR. JOHN WHITE, F.I.C., reports:—During the quarter ending June 12, 255 samples of food and drugs have been received by me for analysis, as follows:—64 from Colonel Shortt, 60 from Captain Sandys, 66 from Mr. F. A. Shortt, and 65 from Inspector Hewitt. The samples consisted of the following articles: Milk 40, butter 35, lard 19, cheese 1, bread 2, coffee 30, oatmeal 26, mustard 10, pepper 4, ground ginger 23, condensed milk 1, sugar 2, arrowroot 3, corn flour 1, pearl barley 1, ground rice 3, vinegar 1, rum 20, whisky 10, brandy 4, gin 3, tincture of rhubarb 5, spirits of nitrous ether 4, cream of tartar 3, linseed meal 2, precipitated sulphur 1, bicarbonate of soda 1.

No less than eight of the 40 samples of milk had been adulterated; four by the addition of water, and four by the removal of a portion of the cream. The latter result may be obtained in two ways, either by partially skimming the milk, or by the more expeditious way of adding separated milk, which contains only the merest trace of fat, to whole milk. The worst samples were one containing 10 per cent. of added water, and another showing a deficiency of 40 per cent. of fat. In addition to the samples returned as adulterated, ten others were of very poor quality, and it is probable the majority of these had been tampered with prior to sale. I may add that Inspector Hewitt, acting under the directions of Colonel Shortt, obtained several samples of milk on a Sunday, in

a district from which complaints had been received of the quality of the milk supplied on that day. All the samples, however, proved to be genuine, with the exception of one, which was deficient of a small percentage of its fat.

Four samples of butter contained an excessive amount of water, and were consequently certified to be adulterated. The respective percentages of water were 18, 19, 20, and 25, while the standard I adopt is 16 per cent. This standard is, in my opinion, distinctly favourable to the manufacturer, as properly made butter will always contain a lower amount. At the hearing of the case against the vendor of the sample containing 19 per cent. of water, I was subjected to a lengthy cross-examination by his solicitor, the object being to discredit my analysis by endeavouring to show that I adopted too low a standard. This object was not accomplished, as the Bench accepted my evidence, and a conviction followed. The vendor of the sample containing 20 per cent. of water produced a warranty of the purity of the butter from the wholesale dealer by whom he was supplied, and having satisfied the magistrates that he acted in good faith, the case against him was dismissed. It is gratifying to be able to say that a summons was immediately granted against the wholesale dealer for giving a false warranty. This method of adulteration is of grave and serious importance to the public, but more especially so to the agriculturists of this country. The sale of butter containing an excessive proportion of water is of comparatively recent growth, and the bulk of it is of foreign origin. The gravity of the fraud, which is of a three-fold nature, is abundantly shown in the case of the sample to which I have already referred, containing 25 per cent. of water, or 9 per cent. more than should be present under any conditions. First, the honest manufacturer is severely handicapped in competition with such an article; secondly, the grocer who retails the stuff is liable to loss, as some of the extra water may run away while the butter stands in his shop; and thirdly, the consumer who buys this substance and pays at the rate of at least 1s. per lb. for so large an excess of water, is undoubtedly grossly defrauded.

Three samples of coffee were adulterated with chicory, the percentage present being respectively 55, 60, and 90. As the price of chicory is only about one-half the lowest price at which these mixtures are sold, the retailer obtains a very handsome profit by the admixture, and the pocket of the purchaser suffers correspondingly.

Several samples of oatmeal contained traces of barley meal, but the quantity present in each instance was so small that its occurrence was probably accidental, and I accordingly passed the samples as genuine.

One sample of ground ginger contained at least 50 per cent. of "spent" or "exhausted" ginger—that is, ginger from which the pungent and aromatic qualities had been abstracted by some solvent, probably for the purpose of making a flavouring for ginger beer. The worthless residue is then re-ground and mixed with unexhausted ginger, and the mixture sold as genuine. The other samples were genuine, though three were of very low and inferior quality.

Two samples of spirits, viz., one of rum and one of whisky, had been largely adulterated by the addition of water beyond the amount necessary to reduce them to the lowest strength (25 degrees under proof) at which the Act permits them to be sold. To the rum 13 per cent., and to the whisky 20 per cent. of water over and above the proper quantity had been added. These were flagrant examples of dishonesty; for while the spirits had been very largely reduced in value, there was no corresponding reduction in price. Six other samples of spirits were slightly below the legal standard, but I passed them as genuine.

One sample of tincture of rhubarb was entirely destitute of saffron, while two others were of poor quality.

Two samples of spirits of nitrous ether were deficient of their active principle, ethyl nitrite, to the extent of 50 per cent. in one case, and 60 per cent. in the other, and were, therefore, not in accordance with the requirements of the British Pharmacopœia. The vendor of one of the samples maintained in court that he was entitled to sell as spirits of nitrous ether an article of lower strength than is laid down by the Pharmacopœia, provided he described it as of a lower specific gravity. I contended on the other hand that if a drug be sold under its recognised and official name, it must comply in strength with the requirements of the Pharmacopœia. The magistrates eventually accepted my contention, and fined the vendor.

The whole of the other articles proved to be genuine. The total number of adulterated articles was 21, which shows a percentage of 8.2, as compared with 10.1 for the preceding quarter.

I have also analysed for the Public Health Committee 28 samples of water, and have reported the results of analysis to them. This makes a total of 283 articles analysed by me during the quarter.

No samples have been received under the Fertilisers and Feeding Stuffs Act.

ADULTERATION IN CORK.

THE County Analyst, Mr. D. J. O'Mahony, F.C.S., reports that for the period ending June 30, 1895, there have been analysed, under the Sale of Food and Drugs Act, 423 samples as follows—347 milks, 60 adulterated; 19 butters, 3 containing excess water; 57 spirits, 7 adulterated. Thirty-eight convictions for adulterated milks, 12 cases pending and 11 dismissals, 7 of which were due to

inspectors having failed to seal retained samples in presence of vendors, two dismissed, as defendants produced certificates of analyses which differed slightly from the official analyses. The inspector in one of these cases called attention, without effect, to the fact that the unofficial analyst's certificate was not evidence, and that the person who signed the certificate should be produced as witness. In the other case the magistrates did not order the reference sample to be sent to Somerset House. The eleventh case was dismissed before the evidence for defence was well begun; this result was so disheartening to the inspector that he destroyed immediately the reference sample, consequently no appeal could be lodged. A defendant at Rathcormac pleaded guilty, and was rewarded for his truthfulness by being fined one penny. Nineteen butters examined; all were free from mixture with foreign fat; three contained excess water. Two of those cases are pending, the third was dismissed, the Bandon magistrates failing to see fraud in selling water at butter prices. The sample contained 26 per cent.

Fifty-seven samples of "spirits" examined; all were free from injurious ingredients foreign to spirits. The greater number were flavoured patent spirit—four varied from 19 to 16 o.p., 46 from 3 o.p. to 24 u.p., 7 adulterated with water below the limit allowed—25 degrees u.p. Five convictions followed and two dismissals. In one case the inspector failed to use the words of the 14th section—"To have same analysed by public analyst." In the other case the defendant swore that the sample was sold to the inspector as a "mixture" and not as whisky, though the defendant had no notice exhibited in his shop stating that the spirits sold were below 25 degrees u.p., the prosecution being for spirits 38 degrees u.p.

A sample of milk sent by the governor of H.M.'s male prison was of a very good quality. One brown coffee sugar sold as Demerara was found to be a beet sugar coloured with aniline dye. In all 57 convictions were obtained, resulting in £65 fines and costs being lodged to the credit of the grand jury. Work was submitted from only 26 inspectors, some populous districts, such as Queenstown, not contributing a single sample. Four samples of drinking water examined; three were, in their then condition, suitable for drinking purposes, and ranked as moderate quality waters of first-class. The fourth sample was unsuited for domestic purposes, as it contained excess of lime salts.

Although the County of Cork Grand Jury have not yet adopted the Fertilisers Feeding Stuffs Act, three samples of fertilizers were examined, a sample of nitrate of soda, dissolved bones, and a superphosphate; the two latter were up to their respective standards; the Chili saltpetre contained only 88 per cent. of nitrate of soda.

SOME POINTS FOR THE MAX NORDANITES.

THE new fad is degeneracy, and the fearful wildfowl who in the intervals of political lunacy condescend to instruct the public through the great newspapers, have been "Nordaning" us until even the straightest thinking detester of cant finds himself looked at askance as a degenerate. Dr. Clifford Allbutt has written a few words of sturdy common-sense anent the latest fad, which the *Contemporary Review* has done well to publish. He says:—

"It is so easy to notice defects, either in others or in ourselves. In others they seem to stand out in bold and cheerful relief, while in ourselves they thrust themselves upon our notice in the most annoying manner. When we agree with the Psalmist that 'we are fearfully and wonderfully made,' it is our fearful liability to break down or get out of order that we are chiefly thinking of. Perhaps this is but natural, for it is always the evil in things that most sharply impresses us. Comfort is a passive, hazy sort of sensation compared with the clear-cut acuteness of pain. Besides which there's no need to pay any attention to the good qualities of things. They'll never bother you. 'Well enough' can be safely 'let alone.' Ill, however, demands our constant attention and action.

"Health will take care of itself, disease must be cured at once if possible. A healthy man doesn't know that he has such a thing as a stomach; a dyspeptic doesn't know that he has anything else. Hence pain is the great educator, the chief spur to investigation. If there were no suffering there'd be no medicine, no anatomy even; pathology is the starting-point of physiology. So long as all goes well and smoothly we care nothing about our interior make-up, but let 'dys-' anything develop, and the digging and probing begin at once.

"Does not this state of affairs have a strong, though unconscious influence upon our mental attitude as a profession toward the human machine? We are kept so continually engaged in patching

and tinkering at it that we are in danger of coming to look upon it as a bundle of defects. The laryngologist declares that a healthy (or artistically symmetrical) nose or throat is rare; the gynecologist deplors the faulty plan of construction of the uterus and vagina; the oculist announces that a 'normal eye' is to be found only in the text-books; and the bacteriologist regards the young human body merely as a congenial culture-medium for the Klebs-Loeffler and the adult one for the Eberth bacillus. We are prone to rate our patients much as Falstaff did his recruits, 'Tush, tush; mortal men, food for powder, food for powder!' only the grains of our 'powder' are alive and wiggle, and assume a variety of comma-shapes. Even as sanitarians we seem to delight in populating the heavens above, the waters, the earth beneath, the dust of our streets, the food upon our tables, with hosts and swarms of tiny savages to whom the human body is a helpless prey whenever pounced upon. Existence would be impossible but for germicides, say we. It is positively dangerous to be alive! In short, we often forget that the human body is not a pulpy victim of circumstances, but the toughest, most resisting, most marvellously adaptable, and most ferocious organism that the sun shines upon. It can flourish where nothing else can, and fatten on a diet of any other organism that can be mentioned, not excepting the pathogenic bacilli.

"In the first place, the lesson that the school-ma'am is so fond of impressing upon the infant mind, 'Man is physically the feeblest of all animals, but by his superior brain he masters all,' is utterly untrue. Man is physically the finest, most dangerous animal in the world. Not a bird or beast or even fish that he can't beat at its own game, if he sets himself about it. The Blackfoot Indian will run down a deer, knife in hand; even the 'tireless wolf' can be overtaken and killed if you can only keep on his trail. The negroes of Mozambique spring right into the water and attack sharks, armed only with a short knife. The Sikh will face a tiger with his short, heavy scimeter, and a thousand tests abundantly demonstrate that civilized man is as much superior to the savage as the latter is to the animals. Club or sword in hand, man is a match for the most ferocious beast of prey in a fair, stand-up fight, and the club or its descendant is as much a part of us as our bones or skin; but for it we should never have allowed our teeth and claws to degenerate into such feeble objects. Its use has made us right-handed; right-handedness has specialized the cortex to such a degree that speech was possible, and speech makes thought possible. So that our mental superiority is purely an outgrowth and a part of our muscular superiority. In the language of Tommy Atkins in Kipling's ballad, *homo sapiens* is 'a pore benighted heathen, but a fust-class fitin'-man,' and two-thirds of his virtues, moral, physical, and mental, are the fruits thereof. And yet we talk of him professionally as if he were a clam without a shell.

"In the second place, there is no known organism that can defy the elements as he can. Any zoologist will tell us that no other mammal and no bird has one-half the geographic range that the human species has. His faithful friend the dog will accompany him almost everywhere, but only by having his food, shelter, and even clothing provided for him by the superior species. We speak of being 'as rugged as a bear,' but it takes three distinct species of *Ursus* to keep pace with man from the tropics to the pole. A dozen or more species of deer are required for the same match. Even the domestic animals, when carefully housed and fed by him, are far inferior in toughness, and one of the greatest obstacles to his progress in many regions is the impossibility of finding any beast of burden or milk-giver that will live in the climate with him. The only species that can even enter the lists with him is the blue-winged teal, and he is disqualified at once by the fact that he is the 'very moral' of a fashionable valetudinarian, spending his summers in Labrador and his winters in Florida.

"Much of this faculty is, of course, due to man's power of constructing shelter and clothing for himself, but still more to his world-wide range of food materials. Look at him in the tropics, subsisting on rice and fruits, only sawdust and shavings under his boiler, so to speak; in the Arctic regions, gorging upon seal-meat and whale-blubber, firing his engine up to the explosion point. His instinct meets the situation. A Hindoo would look with loathing on the eighteen or twenty pound meal of seal-blubber of the Eskimo, and we carnivora of the temperate zone would hesitate about attacking it. Yet a professional friend of ours has assured us that on a mid-winter trip with dog-sledges near the Alaskan shores of the Arctic Ocean he positively lost all appetite for bread, lean meat, fruit, sugar, etc., and cared for nothing but the unsalted dry salmon and rancid seal oil which formed the food of both his Eskimo guides and their dogs. A pint of the latter beverage, carried in the uncured skins of the animal, he declared, was as refreshing and appetizing after a long day's run as hot coffee with cream. When we remember that the whole party was sleeping out on the ice every night, in a temperature of from 30 degrees to 60 degrees below zero, with no shelter save their reindeer skin, night-bags, and their sleds piled up on the windward side of them, we begin to see the reason for this almost pure hydro-carbon diet. There was not room in the human stomach for enough of any other material to furnish heat to keep up the bodily temperature against such fearful odds. But think of the splendid adaptability of the creature! Our respect for the human machine becomes immeasurable. At the other extreme, look at Stanley and his Somalis, labouring forward day after day in heat and fever-fog through the jungles of the Congo, every-

thing carried on the heads of the men (no horses, oxen, or even asses could stand the work and the climate), all on a diet of roasted bananas, sugarcane, and green corn.

"The same toughness and faculty of adjustment manifest themselves even more strongly when we come to consider the unfavourable environment in which man places himself in the various occupations of civilised life and the strain of city surroundings. Scarcely a trade or occupation can be mentioned in which most of those engaged in it are not vigorous, healthy, or long-lived. We speak of 'occupation-diseases;' it is true there are such, but none of them ever affects more than a small percentage of those engaged. Even when they occur they are symptoms of lowered vitality, either local or general, on the part of the sufferer, in most cases. Many of them can be avoided entirely by cleanliness and observance of the ordinary laws of health. 'Painters' colic,' for instance, is caused entirely by eating the mid-day lunch with unwashed hands or upon spattered boards or tables, and can be completely escaped by always thoroughly cleaning the hands before eating. 'Phosphorus-necrosis' never attacks a healthy mouth or jaw, and can be prevented by the prompt filling or removal of decaying teeth. 'Chimney-sweeps' cancer' finds a perfect prophylactic in the daily use of soap and water. It was long supposed that in 'miners' consumption' and 'printers' phthisis' and 'knife-grinders' asthma' we had a group of diseases practically necessary risks of the three occupations, but the first is completely out of the list now, first, because the death-rate from tuberculosis is no higher among miners than in the rest of the community, and, second, because a similar carbonised condition of the lungs is being found to exist in a considerable proportion of dwellers in manufacturing towns and smoky cities without any corresponding increase in the prevalence of pulmonary tuberculosis. It is also more than suspected that the irregular hours and worse habits of the 'typo' have much more to do with his 'consumptive' tendency than the dust of dried printers' ink in which he works.

"Of all occupations probably none has had a blacker reputation for unhealthfulness, both popularly and professionally, than that of the coal-miner. Working as he does hundreds of feet underground, in wretched little burrow-like passages, in an atmosphere foul with coal-dust, fire-damp (CH_4), 'choke-damp' (CO_2) and powder-smoke, exposed to the most frightful accidents by explosion, by water, by falling rock, surely no mortal organism can long resist the pressure. When we further remember that in the English mines the galleries in which he works scarcely average *four feet* in height, and that in coal-getting ('holing under' the seam) he often works for yards at a stretch in a space *two feet or less* in height, so that he has to lie flat on his side to swing his pick; that the mine is usually both warm and damp, so that he emerges dripping wet at the pit-mouth into an atmosphere from 30 degrees to 60 degrees lower; that his dwelling is a mere barrack, usually badly built, badly drained, and overcrowded; that his wages are so irregular that life with him is generally 'either a feast or a famine,' we marvel that the breed doesn't become extinct. No wonder it was for long years rated as an extremely unhealthy occupation. The question has been carefully investigated within the last ten years, however, with the astounding result that 'the comparative mortality-figure of these labourers is considerably below that of all males, and, if we exclude accidents, only slightly exceeds that of the most healthy class, the agriculturalists.' (Dr. Ogle, Census Statistics of 1881.) The same authority also reports that 'his mortality from phthisis is remarkably low.' The Labour Commission sums up its findings in the sentence: 'The weight of evidence seems to be against the idea that coal mining is an unhealthy occupation.' That veteran gladiator, the human body, has risen to the emergency again and conquered just as it used to do in the ages when it lived on bear-meat and ground-nuts by choice, mussels and seaweed by necessity, and sucked its paws when it could get neither.

"The soap-renderer, the hide-scraper, the tanner, the refuse-sorter literally spend their lives amid the most offensive odours and putrefying materials, and yet their mortality is scarcely perceptibly heightened thereby. The workers in our foundries, our smelters, and our engine-rooms live at terrific temperatures for hours at a stretch with comparative impunity. The Swansea copper-smelter, for instance, works hard for seven or eight hours a day in a temperature of from 102° to 110° Fahrenheit, exposed to a glare, when the three doors are opened, of from 350° to 400°, drinking from two to three gallons of water a day to supply his loss by perspiration, and yet he is a hale, hearty fellow, and lives to a good old age.

"In fact, man can accustom himself to work with safety and even comfort at almost any temperature, pressure, degree of moisture or dryness, in almost any position or atmosphere, providing he is reasonably well fed and housed, and maintains a fair general condition of health.

"And it were well for our bacteriologic brethren, indeed, for all of us, to remember that the toughness and resisting power of the human body are just as great against disease and all its germs as against any other unfavourable influence; that the fixed cells of our own bodies are to the deadliest bacilli as a regiment of British infantry to a swarm of Hottentots; that the hottest place a disease germ can get into is a healthy bronchus or stomach.

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Food and Sanitation.

SATURDAY, JULY 27TH, 1895.

THE LONDON WATER SCANDAL. QUEER ANALYSES.

To most people in London the experience of the past winter was bad enough. Householdors were the victims of "bursts" which the acts of the London water monopolists ordained should be repaired at the householder's expense, although the "bursts" were principally owing to the fact that the main pipes were laid by water companies at insufficient depths to save expense. In South London, the pipes in many parts were only some eight inches below the surface, and service pipes had to be laid at corresponding depths, with the result that whole districts were victims of burst pipes, and deprived of water for weeks. The accounts, however, were demanded all the same, although the water was not delivered, and the com-

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panies who control London's water supply had, moreover, the audacity to claim as a special virtue the fact that they put up standpipes, by means by which the public could mess, slop, and bedraggle themselves to secure a necessary of life. How much illness this abominable state of things caused mattered not to the water companies, for what concerns them is dividends, at no matter what cost to public health or convenience.

East London has now a water famine. As one writer says:—

"Whilst the people of the East-end have been starved for water, a trickle through the pipes for one or two hours a day at the hour when the water was least wanted being all of the precious liquid that was given them, the company has actually been selling large quantities of water to the local authorities for watering the streets. That is, it has neglected to carry out its statutory obligations to give a proper supply of water to householdors, who will have to pay the water rates all the same, and it has sold for hard cash water which it is under no obligation to supply. The workman has often not been able to wash his face or to get a cup of tea, but the roadways have been watered, to the profit of the water company."

This condition of things is surely bad enough, but there is even worse behind. For the public protection there is made regularly what purports to be an analysis of the water supplied to Londoners. We have had occasion to point out before to-day some peculiarities about the analyses supplied by the water companies, and some London vestries have taken the very wise precaution of securing independent analyses by their own public analysts. The results are very significant, and show that there is grave reason for questioning the accuracy and value of the analytical reports hitherto

furnished as to the purity and quality of our water supply. In a report just issued by Mr. Charles E. Cassal, F.I.C., Public Analyst for St. George's, Hanover Square and Kensington, Mr. Cassal frankly exposes the methods of the water companies. Mr. Cassal says:—

“A letter, dated 17th January, 1895, addressed by the secretary of the Grand Junction Water Company to the vestry clerk, and a letter from Mr. W. Crookes, analyst to the water company, addressed to the secretary of the company, have been handed to me by your vestry clerk. I beg to report upon these documents as follows:—

“The letters relate to the analysis of a sample of water taken from a standpipe in Davies-street on the 15th November, 1894. This sample was submitted to me by your sanitary inspector, and I reported that the results of analysis showed the sample to consist of water which was insufficiently purified for public supply, and which was unfit for drinking purposes. Your medical officer of health, Dr. Corfield, having also considered the results, expressed a similar opinion.

“The letter from the company's secretary states—first, that my report was submitted to Mr. William Crookes, analyst to the company; and, secondly, that important measures have been adopted “with the view of ascertaining how the filter beds of the various companies are working, and of warning the officials should it ever appear that the filtration is in any way imperfect.”

“It is satisfactory to learn that the companies have decided to adopt such measures as those referred to in the last paragraph.

“The company's analyst states that he has carefully examined the results of my analyses, and that he has “as far as possible,” compared them with the results of his own analyses of what he calls “the corresponding sample” drawn by his assistant from the standpipe at Kensington-park-road. The only ground for calling this a “corresponding” sample appears to be that the standpipes in Davies-street and in Kensington-park-road are both supplied from the Kew works of the company. I have to point out that under these circumstances it is not permissible to refer to the samples as “corresponding” samples. Such a description can only justifiably be applied to samples taken at the same point, at the same time, and under the same conditions.

“Mr. Crookes proceeds to find fault with the method of analysis employed by me in dealing with the sample of water referred to. I am not concerned to defend my methods of analysis. Those methods are perfectly well known, they are extensively and successfully practised, and the great majority of experts neither deny nor doubt their value. It is misleading to introduce highly technical matters of this kind into official reports and letters, since they can only be advantageously discussed by analytical experts. It is my duty to advise your Vestry that no importance can be attached to any of the statements made by the company's analyst about

processes of analysis, in his letter to the company. The assertions that a particular process is “old and untrustworthy” and that the “combustion process” of Dr. Frankland is “now generally adopted in all water analyses which have any claim to accuracy,” are assertions which are wholly erroneous and which cannot be scientifically maintained.

“The company's analyst finds himself unable to compare the analytical data obtained by him from the Kensington-park-road sample with the analytical data obtained by me from the Davies-street sample in order to arrive at the “character, amounts or properties of any impurity which may be present.” Apart from the fact that the samples were not “corresponding” ones, the institution of a comparison between the analytical figures obtained in the widely-differing processes to which Mr. Crookes refers is well known to be an absurdity. The conclusions drawn from the figures can be compared, and these conclusions are, as a rule, practically the same, when the same water has been analysed by the different processes. While Mr. Crookes avows himself unable to draw intelligible conclusions from my figures, I have the satisfaction of stating that I am prepared to form an opinion from a consideration of the figures obtained by him, should they be submitted to me.

“It may be of interest to point out that the observations of the Company's Analyst upon “oxygen absorbed,” “nitrates,” and so-called “free ammonia” are quite beside the mark, and are thoroughly misleading. In the first place those observations are based on the gratuitous and unjustifiable assumption that the two samples—that from Davies-street and that from Kensington-park-road—were “corresponding” samples. Secondly, assuming that corresponding samples had in reality been analysed, the figures obtained for “oxygen absorbed” depends upon the process employed. There are different processes for obtaining this figure, and its meaning can only be appreciated when the process is known. Thirdly, “free ammonia” is a misleading term. In my report it is shown that the term “free ammonia” has a particular meaning—a meaning which all analysts attach to the term in water analysis. If the term be taken, as it should be, to mean “saline” ammonia, then it is ridiculous to assert that the Thames-derived waters do not contain it. Its detection depends on the way in which it is looked for.

“Finally, the statements made by the company's analyst as to the “average amount” of nitrates in the Thames-derived waters in reality only serve to make the exceptionally low amount found in the Davies-street sample particularly significant, and it is unfortunate that the company's analyst should have inadvertently overlooked the fact since it is one of considerable importance, under the circumstances, as telling against the sample of water in question.

“The company's analyst goes on to inform the secretary of his company that “it is undeniable that for a great part of the month of November the floods in

the Thames Valley and the swollen condition of the river rendered filtration exceedingly difficult to all the Companies drawing their supplies from that river," and that "water drawn on the 15th would probably be in a worse condition than it has ever been before." The 15th would therefore appear to be an unfortunate date for the company, but, in spite of this, according to Mr. Crookes, "the water was properly purified and perfectly fit for domestic use." This conclusion appears to have been partly based on the results of a "bacterioscopic" test, and I may take the opportunity of remarking that, at present, the "bacteriological" method affords nothing more than an additional test of the roughest and most misleading character for the existence of pollution.

"I feel bound to call attention here to an extraordinary statement which has been made by the two analysts retained by the Water Companies (Messrs. W. Crookes and James Dewar). These gentlemen issue a monthly report, which is quoted in full in the Metropolis Water Examiner's Monthly Report. It would appear from the reports for July and August last that for "some considerable time" *the samples of water presumed to have been drawn for analysis from the mains of the Chelsea Company were in reality taken from a main supplied by the New River Company*, and the results of analyses recorded as relating to the Chelsea Company in reports covering a period, as it seems, of *at least several months*, must be regarded simply as the results of duplicate analyses of the water supplied by the New River Company. The Companies' Analysts remark that "this erroneous labelling is most unfortunate," and from their point of view it unquestionably is so. Inasmuch as the results of analyses of the waters supplied by these two Companies generally differ very considerably, the New River water being, as a rule, much purer, it is somewhat surprising that the unfortunate mistake was not discovered before, more especially as it is stated to be owing to an "unexpected coincidence" between the results of analysis of the two waters, and the "repetition of this (unexpected) coincidence for several months," that the conviction that there was something wrong was ultimately "forced upon" the Companies' Analysts. It will be seen that the matter is one of considerable interest, especially to those who, at different times, have had occasion to disagree with the conclusions of the Companies' Analysts.

"The Companies' Analyst suggests that in stating some of my analytical results in "parts per hundred millions" my object was to "magnify" those results, and in this connection proceeds to make reference to the distance between the earth and the sun — a matter which, so far as I am aware, has no particular bearing on water analysis. I may mention that the form of statement complained of was not introduced by me. It was adopted some years ago, and is still in use in this parish, merely because my predecessor in office preferred it as making the figures clearer to non-experts.

"I have only to add that, as a responsible public officer, a public analyst is not concerned to magnify or to minimise anything. It is not the business of a public analyst to make out a case either for or against the water company whose water is officially submitted to him for examination. It is his duty to deal with facts, and the fact remains that the sample of water taken from the Davies-street standpipe on the 15th November last was polluted and unfit for drinking purposes. No scientific chemist who impartially considers the analytical results, and is able and willing to give an opinion upon them, can arrive at any other conclusion."

Mr. Crookes may be able to satisfactorily answer this crushing exposure by the St. George's, Hanover-square, public analyst. If so, he and his employers owe it to the public that the answer be at once forthcoming.

THE LATEST DODGE TO ESCAPE CONVICTIONS.

LIKE stock-jobbers, racing men and similar bad characters, the professional adulteration thief has learnt wisdom by experience. He is inclined to cut his losses and run his profits. Under Section 6 of the Act of 1875 he is liable to a penalty of £20 if he sells, for instance, adulterated milk; but if he has had a taste of £20 penalties, and knows the Act, he can save a "tenner" at least by refusing to sell for analysis. Indeed, the penalties under Section 17 are usually from 20s. to 60s., so the refusal would average a saving of some £17 to a vendor who, like Mr. William Brown usually tastes the full penalty the Act allows. But a case at the West London Police-court on July 19 shows an even more artful procedure than that of refusing to sell for analysis.

Mr. Chambers Leete, Clerk of the Kensington Vestry, applied for a summons under the Malicious Damage Property Act. He said the circumstances of the case were a little peculiar. One of the Inspectors appointed under the Adulteration of Food Act obtained a sample of milk for analysis, and after the sale was completed the man took the bottles and broke them to pieces, throwing them into the street, saying he did not intend to be fined £20 again.—Mr. Plowden, who heard the application, said the question could be raised under the summons for adulteration.—Mr. Leete: We cannot prove the adulteration. The milk is gone. Proceeding with his remarks, Mr. Leete urged the Magistrate to grant a summons under the 52nd Section for wilfully breaking the bottles, which were the property of the Vestry.—Mr. Plowden: I think you can take a summons on the bottles (laughter).

Here the vendor did not refuse to sell; he simply smashed the bottles. Section 17 does not apply to him, and he can only be summoned for damaging bottles value a few pence. The remark, "He did not intend to be fined £20 again," shows he had reckoned the relative values of the two procedures—refusing to

sell, or smashing, and on the principle of cutting his losses chose the latter. Food and Drugs Act Inspectors will require to keep a tight grip on their samples where the articles are liquids or easily destroyed, as the plan of smashing may spread, and if so, unbreakable bottles may be necessary.

THE FOOD AND DRUGS ACT INSPECTORS AND MR. JAMES HUDSON'S BRIBERY ALLEGATIONS.

THE Weights and Measures Inspectors have asked Mr. James Hudson to prove his slanderous aspersions on Food and Drugs Act Inspectors, and Mr. James Hudson is just as likely to do so as the sky is to fall and enable us to catch larks easily. Anyone who saw that gentleman's demeanour when he was asked point blank for proofs by the Select Committee need not have been told that he had been drawing on his imagination for his facts, and had not the grace to acknowledge it. His impudent shuffle and assertion that the victims of the bribery could not be brought to give proofs impressed no one at the committee as worth a shred of credence. It is right that as a body the inspectors should repudiate the slander, but to go any further with their traducer would be a loss of dignity. "It is no use," says an old proverb, "to pour water on a drowned rat."

ADULTERATION PROSECUTIONS.

MILK.

ANOTHER CASE FOR THE SOMERSET HOUSE IGNORAMI.—At Bromley Petty Sessions, Henry Jarvis, milk seller, St. Paul's Cray, was summoned by Inspector Tucker for selling adulterated milk at Caislehurst.—Mr M. A. Adams, public analyst, reported that the sample was 87 parts of new milk and 13 parts entirely deprived of fat.—Mr. Gregory, who defended, submitted in defence that the milk was pure; defendant had himself milked the cows at 4 a.m. on the 14th, and had the milk in his possession till the hour it was handed to the inspector, 6 a.m. The sample which had been left with the defendant was sent to an analyst, and his certificate was that the milk was a pure one and had no added water. He asked that the third part of the pint should be sent to Somerset House. The case was adjourned for that purpose.

CASH IN ADVANCE.—At Chelmsford, on July 19, Joseph French, dairyman, New Writtle-street, was fined 10s. and £2 3s. 6d. costs for adulterating milk. The County Analyst, who refused to give evidence until his expenses were guaranteed, stated that the percentage of added water was 7 per cent. In cross-examination, however, Mr. Pooley admitted that he could not distinguish between an excess of water in abnormal milk and the excess of water in milk where part of the water had been added. There was no fixed legal standard for milk; the standard was derived from experience.—For the defence, Mr. W. J. Gray contended that the milk analysed was exactly in the same condition as it came from the cow. The presence of water was entirely due to the dryness of the season and the scarcity of food.—Defendant positively denied that he had been guilty of adulteration. The sample was from the mixed milk of his 12 cows. Mr. Bailey added that he had known the milk of an individual cow to be as low in quality as the sample analysed, but never the mixed milk of a number of cows.

MORE JOBS FOR THE SOMERSET HOUSE INCAPABLES.—At Worcester, Robert Taylor, milkman, Ombersley-road, was charged with selling adulterated milk. Mr. Dingle prosecuted. Mr. Pacy, sanitary inspector, gave formal evidence of his authority to act, and Mr. Sheppard, his assistant, deposed to purchasing milk from defendant. Mr. Ross, partner with Dr. Swete, the city analyst, said he had analysed the milk in question and could swear to its containing 5 per cent. of water. Dr. Swete also analysed it. Defendant pleaded not guilty. He said he saw the cows milked and would call witnesses to prove he put nothing in. The milk was

under his eyes all the time till it was put into his cans. He had the milk from Mrs. Newey, Severnside. The tins were dry when the milk was put in. The cans were washed and wiped two hours before the milk was put in them. No other milk was mixed with that he had from Mrs. Newey. He did not buy milk from any other persons. Harry Dale, boy in the employ of Mr. Taylor, and a man named Jones, who milked the cows, gave corroborative evidence. Mrs. Newey said she measured the milk into Mr. Taylor's tins, which were perfectly dry, and no water was put in. The case was adjourned for an analysis by the Somerset House authorities.

THE FORM OF CERTIFICATE.

AT Bournemouth Police-court, John Aldridge Parsons, dairyman, of the Holdenhurst-road, was summoned for selling to Detective Sergeant Bowles, of Stockbridge, on the 13th ult., a certain article, new milk, which was not of the nature, substance, and quality demanded.—Mr. J. Druitt, jur., appeared for the defence.—The allegation was that the milk was adulterated with 8 per cent. of added water, that being the effect of the certificate given by the county analyst (Dr. Angell), but Mr. Druitt contended that the milk was in the same condition when he sold to complainant as when it was delivered to defendant by Mr. Holloway, of Holdenhurst. Evidence was given by defendant and other witnesses, and Mr. Druitt submitted also that the certificate of the public analyst was bad, not having been drawn up in accordance with the terms of the statute, which made it necessary for the public analyst, in the case of milk and other perishable articles, to set forth upon the face of the certificate whether the sample submitted to him had undergone any change in its constitution which would be likely to interfere with the analysis. After a long consultation the Chairman said the magistrates had come to the conclusion to dismiss the information on the ground that the public analyst had not complied with the provisions of the Act of Parliament. They wished further to state that in their opinion there should be proper precaution taken to lock the churns, so that their contents could not be tampered with.

MILKING THE SABBATH.

ON July 19, Inspector Parker, of the Birmingham Health Department, summoned George Burgoine, Heath-street, Balsall Heath; John Webber, Vincent-street; Edwin Gill, Kent-street; and Emma Bridgens, Longmore-street, for selling milk that was not pure. In the case of Burgoine, Dr. Hill's certificate showed that the milk contained 10 per cent. of added water, and a fine of 20s. and costs was imposed. In the case of Gill there was 21 per cent. of added water present, and a fine of 40s. and costs was inflicted. The milk purchased from Webber contained 9 per cent. of added water and was 12 per cent. deficient of fat. Webber was fined 20s. and costs. The milk obtained from an employee of Mrs. Bridgens was certified to contain 24 per cent. of added water. In this instance the penalty was raised to 60s. and costs.

Mr. Brame remarked that it was rather a significant fact that all the foregoing samples were taken on a Sunday morning. They might very reasonably draw an inference from the fact that this sort of dealing took place on a Sunday morning, when the officers might not be supposed to be on duty. It was the intention of the Bench, if similar cases occurring on Sundays came before them, to deal more severely with the defendants.

Mr. Carter (magistrates' clerk): How many samples did you take on this Sunday?—Inspector Parker: Thirteen.

And how many were adulterated?—Six.

Motto for the Balsall Heath milk vendors: Remember thou keepest watery the Sabbath day.

THE WARRANTY QUESTION AND JURISDICTION.

AT Clerkenwell, on July 20, David Kerr, of Brook Farm, Oakham, Rutland, was summoned by the Islington Vestry for having given a false warranty in writing to the Manor Farm Dairy Company with respect to the quality of milk supplied by him to the company.—Mr. Toler, barrister, for the defendant, contended that the magistrate had no jurisdiction, the offence, if committed, having been committed at Oakham, where the label of warranty was attached to the churns. He also contended that the vestry was not the aggrieved party, but the Manor Farm Dairy Company, who were summoned for selling adulterated milk, but defended themselves on the warranty supplied by the present defendant.—Mr. Horace Smith thought the best way would be for him to decline to hear the summons on the ground of non-jurisdiction, and then the whole point could be raised on the vestry applying for a mandamus to cause him to hear the case. He was not satisfied that he had jurisdiction, and these points in the Act wanted settling once for all.

SPIRITS.

THE "UNDERPROOF" GAME.

At North Holland Petty Sessions, Boston, on July 17, Samuel Anderson, innkeeper, Wigtoft Fen Houses, was summoned by Supt. Crawford for unlawfully selling a certain article of food, to wit, rum, which had been admixed with water so that the mixture contained 67.5 degrees of proof spirit instead of 75 degrees, which was the minimum of alcoholic strength allowed by law for rum, and was not of the nature, substance, and quality demanded by the purchaser, contrary to Section 6 of the Food and Drugs Act, 1875. —There was also a charge against Jesse Green, innkeeper, Wigtoft, of unlawfully selling whisky which had been admixed with water so that the mixture contained 72.5 degrees of spirit proof instead of 75 degrees, which was the minimum of alcoholic strength allowed for whisky. —The date of both alleged offences was June 10, and the samples had been examined by Mr. C. H. Southwell, of Boston, the county analyst, whose certificates showed the deficiencies stated. —In the first place, the defendant said he had kept his house, the Golden Ball, for 18 years, and had not had such a charge preferred against him before. The bench, after examining the analyst's certificate, said it showed a very large percentage of deficiency, and the defendant would be fined 10s. and costs. —In the second case, the defendant Green said the whisky had evaporated in the cask, which had got low. Supt. Crawford, he said, at the same time took samples of gin and brandy, and they were found to be all right. This case was withdrawn on payment of 3s costs.

ADULTERATION IN THE WEST RIDING OF YORKSHIRE.

At the Bradford West Riding Court on July 18, John William Hodgson, landlord of the Hare and Hounds Inn, Wibsey, was fined 40s. and costs for selling whisky which was adulterated with 18.3 parts of water. The defendant said he had put the water in by mistake in a moment of irritation. —Betty Saville, grocer, of Wibsey, was fined 10s. and costs for having margarine exposed for sale unlabelled. The defendant had a quantity of margarine exposed for sale unlabelled, and she sold it as butter to the inspector. She denied the offence, alleging that the margarine was not exposed for sale.

FOR BAGS OF MYSTERY.

At Cheltenham, on July 18, Wm. Charles Peglar was summoned for having on the 2nd inst. exposed for sale meat which was unfit for human food. Dr. Garrett, the medical officer of health, gave evidence of having paid a visit to defendant's shop, where he found a breast and shoulder of veal, about 4lb. of rump steak, a string of sausages weighing over 7lbs., two sides and one quarter of lamb, lambs' plucks, a tub of salted meat, and the fore half of a sheep. The first lamb's pluck he saw was full of tuberculosis, and the substance of the lung was full of matter the result of abscesses caused by the tubercles; and the carcase of the lamb from which it was taken showed evidence of tuberculosis. Another pair of lungs were in a similar condition, and the other meat was in a putrid state and unfit for human consumption. In cross-examination, the Medical Officer said the tuberculosis might have been developing for six weeks. As to the sausages, it would have been dangerous for anyone to have eaten them. The whole was seized and destroyed by a magistrate's order. The defence was that the lambs were bought in open market, at Gloucester, at a fair price, and had only been killed the evening previous to the officer's visit, and that, as to the other meat which was bad, arrangements had been made to have it buried. The Bench considered it a bad case, and imposed a fine of £10 and costs, or six weeks.

A QUESTION OF ALUM IN FLOUR.

At Southampton, on July 12, Mr. Arthur Henry Sims, Eastleigh, was charged under the Food and Drugs Act with selling self-raising flour which contained alum. Mr. Charles Lampport, who appeared for the defence, at the outset applied for a remand for the purpose of submitting the flour to an independent analyst, but the Bench ruled that the case should proceed as far as practicable. P. S. Bowles, Inspector under the Food and Drugs Act, gave evidence as to the purchase of a packet of self-raising flour sold by the defendant, and said he afterwards sealed it and forwarded it to Dr. Angell, the public analyst. On June 12 he received the doctor's certificate, which showed that the preparation contained .77 of alum or some equivalent preparation, which was a form of adulteration calculated to be prejudicial to health. Dr. Angell on being called did not say that alum as such was present, but that the flour contained its physiological equivalent in the form of a preparation of aluminium, and that quantity calculated as alum was equal to

fifty grains per one pound of flour. In his opinion the preparation had the same effect upon the stomach as alum itself. Cross-examined: There must be some acid added to make self-raising flour. He did not believe that alum was an actual constituent of the flour. Mr. Lampport: Then surely that ends the case. Witness said that it had been held that fifteen grains of alum in a four-pound loaf was injurious. There were traces of aluminium in natural flour, though not to any great extent. The sample submitted to him was injurious to health. For defence Mr. Lampport contended that he was entitled to have the summons dismissed on Dr. Angell's admission that there was no alum in the flour. The Bench supported the advocate's contention and dismissed the summons. On behalf of the defendant it was stated that the mixture was absolutely pure, and the profit on a packet was only a farthing.

SOMERSET HOUSE AND LARD.

At Houghton-le-Spring, on July 18, the case of the Durham County Council against Messrs. Pearman and Corder, wholesale grocers, of Sunderland, who were charged, at a court held a month ago, with selling lard alleged to be adulterated with 10 per cent. of cottonseed oil, again came up. It will be remembered that defendants were stated, in evidence given by Mr. B. Scott Elder, to have sold to Robert Curry, grocer, of Lumley, a quantity of lard, and on a sample of the same being obtained by witness and submitted to Mr. Stock, the analyst for the county of Durham, the last-named gentleman certified that the article examined by him was mixed with 10 per cent. of cottonseed oil. Mr. Stock maintained this assertion at the petty sessional hearing. Mr. Curry was protected by a warrant from Messrs. Pearman and Corder, and the latter held a warrant from Messrs. Fowler, Limited, lard refiners, of Liverpool. Messrs. Pearman and Corder were proceeded against, and Messrs. Fowler assisted them in the defence by putting the case into the hands of Messrs. Bellinger and Cunliffe, solicitors, of Liverpool, who engaged Mr. Mulholland, barrister, of Manchester, a gentleman well up in matters of the kind under notice. For the defence three most eminent experts were called, and they all declared that after having analysed the lard there was not a particle of cottonseed oil mixed therewith. Mr. Mulholland asked that the case be dealt with by the magistrates on the merits of the evidence. The latter, however, decided to adjourn the case for a month, and in the meantime send the sample of lard to Somerset House chemical officers for analysis. On Thursday the decision of the Somerset House authorities was made known by the clerk of the court reading the following letter:— "Somerset House, London.—Dear Sir,—The sample of lard marked '54,' and referred to in your letter of the 21st ult., was received here on the following day, securely sealed. We hereby certify that we have analysed the lard and declare, from a consideration of the analytical results, that we are of opinion that the sample in question contains no cottonseed oil.—As witness our hands this 10th day of July, 1895.—R. BANNISTER, F.I.C., F.C.S.; G. LEWIN, F.I.C. —The Clerk to the Justices of Houghton-le-Spring, County of Durham." The case was thereupon dismissed. Mr. A. T. Crow, solicitor for defendants, asked for costs against the Durham County Council. The defendants had been put to great expense, having been compelled to bring the best experts to be got. The Chairman of the Bench (Mr. E. Richardson) asked Mr. Crow if he had an idea what the costs were. Mr. Crow: About £350, your worship. The Chairman (laughing): A very small order, Mr. Crow. Mr. Crow: We had to pay Mr. Mulholland a considerable fee. Mr. Iliff, who appeared on behalf of the Durham County Council, objected to the application of Mr. Crow. He was not, however, against the Somerset House analyst being allowed a fee, and reasonable expenses to the analysts called by the defence. Ultimately the Bench allowed a guinea to the Somerset House analyst, three guineas to each of the three experts, three guineas for counsel, and 10s. 6d. as court expenses.

DISEASE AND DISINFECTANTS.

In the last number of our contemporary *The Chemical Trade Journal*, Mr. H. C. Standage says:—

"One word on antiseptics and disinfectants. The germ theory of diseases has greatly developed, and received much thought and attention lately, but all explanatory theories assert that the germs are brought from some other body or locality where they are found in sufficient numbers to create an epidemic. I would ask these theorists if the living moving maggots bred in cheese are imported from any foreign source: are they not generated in, bred, and fed on the decaying mass constituting the cheese itself? You open a fine hard-crust Stilton cheese, and in the middle find a moving mass of maggots. Were the germs of these maggots imported from the outside source through the hard crust into the interior of the cheese? I think not, but were generated after the manner above suggested about spontaneous generation. Germs, microbes, bacteria, or what you like to call them, exist everywhere we all know, but it is only when they meet with conditions of blood suitable to fructify therein that human diseases are engendered. Keep your blood pure and, *ipso facto*, nerves strong and healthy, and you can swallow a mouthful (a few million) of these germs and develop no

disease therefrom. But let the blood be immature, as in the case of the new-born child, and you have but to inoculate that child's blood with a few germs, as in vaccination, and you will start the blood in a ferment caused by the germ struggling to grow and reproduce itself, too frequently at the expense of the child's breath. (Now vaccinationists don't be down on me for this assertion, or I may venture to retaliate with some telling facts that will demolish all your beautiful theories about vaccination). When we see the house flies dancing and playing 'kiss in the ring,' in the air of our apartments, are they not swallowing some freshly formed germ that has just grown to a size discernible to their very powerful eyes, and that which we think to be one fly touching another is, in fact, both flies darting after the same morsel of food: for if you watch the flies closely you will observe they never actually touch or collide with each other.

Now, presuming that the air of our apartment is alive with invisible germs, how can we best destroy this living mass which doubles and quadruples itself every second until at last the air becomes too foul to breathe? Our usual course is then to introduce some pleasant smelling so-called disinfectant, which disguises the unpleasant odour, but it does not necessarily thereby destroy the living, growing mass of germs, that still continue to thrive. A disinfectant, to be true to its name, must be one that will act chemically on these germs, whereby their constituents are separated, and the germs thereby cease to possess vitality. The chemicals that seem to fulfil this purpose most efficiently are chlorine gas, which apparently acts by seizing on the hydrogen constituent of the germ whereby life is destroyed, *i.e.*, put salt on a slug and note the short times it lives afterwards; sulphurous acid gas, which, by its efforts to combine with the elements of water will seize on the hydrogen and oxygen constituents of the germ and so destroy it; and carbolic acid, which by supplying the carbon element in superabundant quantity enable the germ to feed 'not wisely, but too well,' so that it dies of a surfeit of one of its constituents, bursting because there is not an adequate supply of oxygen and hydrogen present to keep pace with the abnormal growth."

WHAT THE NEW MINISTER OF THE BOARD OF AGRICULTURE PROMISES.

The *Meat Trades' Journal* publishes the following letter: "On Tuesday, the 16th inst., a deputation from the Liverpool and District Butchers' Association waited upon Mr. W. H. Long, who has since been returned to Parliament, and who will be the Minister of the Board of Agriculture under the new Government.

"The deputation brought four points before the right hon. gentleman's notice:—

- "1. Compensation for tuberculous meat seized and destroyed.
- "2. Alteration in the mode of inspection of meat.
- "3. The permissive nature of the General Order *re* Transit of Cattle.
- "4. Compensation for the compulsory closing of private slaughterhouses.

"On each of these questions, I am pleased to inform you, we received most favourable and sympathetic replies. Taking them in order, Mr. Long's position is as follows:—

- "1. Mr. Long says that when a beast is bought in the open market, at a fair price, having passed the inspection of one of Her Majesty's veterinary inspectors, and consequently showing no signs of being tubercled, if after slaughter the carcass is found to be unfit for human food in consequence of its tuberculous condition, then compensation should be paid to the purchaser from the Imperial funds.
- "2. Mr. Long is decidedly of opinion that when meat is seized as unsound and unfit for human food, the existing law should be altered so as to allow the owner of such meat the right and opportunity of calling witnesses, and of being heard before the decision is given.
- "3. Mr. Long promised that the General Order with respect to the transit of cattle should receive his earnest and immediate attention.
- "4. Mr. Long is emphatically of opinion that when private slaughterhouses, which are kept in a thorough sanitary condition, are compulsorily closed by order of the local authorities, then compensation should be paid.

"The right hon. gentleman said it would be his endeavour to make himself thoroughly acquainted with the questions affecting the interests of the trade, and further promised to carefully study all communications sent him.

"The importance of these pronouncements, coming from such a responsible source, must form my apology in asking for the insertion of this letter.—Yours faithfully,

"F. W. HERBERT, Secretary,

"Liverpool and District Butchers' Association."

Tuberculosis is as much entitled to compensation as pleuro, and the procedure up to the present has been a hardship on meat traders.

OLIVE OIL.

MR. W. PERCY CHAPMAN, Her Majesty's Consul at Leghorn, in a report to the Foreign Office, alluding to the prevailing custom in Italy of adulterating olive oil, says that while fine olive oil is usually considered to be both palatable and nutritious, as well as a healthy article of diet, it may be conceded that adulterated as well as common olive oil—rancid or tainted because made from defective fruit—are both very objectionable. Adulteration is still prevalent with a certain class of trade, as is also the practice of selling a very inferior article and calling it Lucca oil. Only recently it was proved in one of the London police courts that a firm of oilmen, owning a number of shops, were in the habit of supplying their customers with an article dubbed "salad oil," which was simply a mixture of seed oil with olive oil—the latter necessarily of the lowest quality, since it would not pay to use a fine quality for such a vile purpose. The plea of the defendants, that their customers did not know what salad oil was and could not appreciate the difference between a genuine and an adulterated article, would only show that the former preferred to trade upon the supposed ignorance of their customers, in order, naturally, to secure for themselves an extra profit, and to distance more honest competitors.

Oil in so-called Florence flasks should be entirely avoided by consumers in England, since through the unscrupulousness of some traders these pretty flasks have been degraded to a vile use, and cotton-seed oil pure and simple, or some adulterated rubbish, put into them. As bearing upon this, it should be mentioned that the Italian Customs authorities hardly seem to appreciate the importance to Italy—the leading olive oil producing country of the world—of prohibiting the adulteration of olive oil. For otherwise they would hardly permit the mixing of cotton-seed oil with common olive oil to be carried out in the *entrepot*, or Government bonded warehouses (the cotton-seed oil being in bond), for the sole purpose of exportation. It is hardly necessary to add that export houses of repute here in the fine olive oil trade are not guilty of such a practice: as also that pure and fine Tuscan oil is to be had without difficulty, and, indeed, is exported hence largely to London and other markets. Still, it is essential to state that the only guarantee the public in England can have lies in the name and standing of well-known firms of good repute, who, importing the article direct, are able to vouch for it, and who place it on the market. A practice followed by some second-rate concerns (for no house of good standing would thus sink its name) of supplying retailers with bottled oil bearing only the names of the exporters, not the names of the importers, is not to be recommended. It is too often a cloak for a cheap and nasty article, since the object is generally to make a larger profit than would be obtainable by selling fine Lucca oil guaranteed to be such by an importing firm of repute. It is no doubt owing to dishonesty in trade that many acquire a dislike for olive oil as food simply because a good part of what is sold is of very inferior quality, and perhaps also adulterated stuff—in short, fit for soap-making or other industrial purposes, but certainly not for the table. Hence, no doubt, originated the advice given in a book of cookery, published not long ago in England, to the effect that in preparing salads as little olive oil as possible should be used, because it was often of such bad quality.

ADULTERATION AND THE GENERAL ELECTION.

THERE is another topic about which the manufacturing candidates of both parties are silent on the electioneering platforms. It is the topic of the adulteration of English manufactured goods. It is not open to question that British trade has been damaged within recent times by nothing so much as by the practice of adulteration and the falsification of goods of all kinds, and particularly of our woollen, cotton, and silk goods, and of our hardware. The skilful incorporation of shoddy with wool so as to produce goods of apparently high quality has done more to close the markets of the world against our manufactures in that line than anything else. The same thing is true to a still greater extent as regards the adulteration of cottons and calicoes—the adulteration with stiffening materials composed mainly of a mixture of china clay and chloride of magnesia. British silks are being driven out of our own colonies because they are adulterated with jute and weighted with dye stuffs. Also, the New Zealander who wants to buy a scythe, and the Australian joiner who would have a chest of tools, are now careful to shun the produce of Sheffield, and to select only articles of American manufacture. What we want as a chief means to bring about the revival of our trade in distant countries is a law to put down those manufacturers, very greatly in the majority, who adulterate and falsify the articles made by them, getting us a bad name in the world's markets and helping to ruin the national commerce. But such a thing is never mentioned on the political platform. It might injure the candidates.—*Newcastle Evening News*.

CIGARS UP TO DATE.

PAPER cigars are one of the most recent forms of adulteration in Germany, where two manufacturers have been punished for making them. In one instance only the outside leaf consisted of

tobacco, the rest of the cigar being composed of brown paper steeped in tobacco juice and then dried. In the other case, a cigar-maker had actually entered into a contract with a paper manufacturer for a special kind of brown paper to be made for him from tobacco remnants and paper pulp. The sheets of paper were afterwards cut out into strips and rolled into the form of cigars.

BUT WE CAN BOAST OF W. T. STEAD AND THE MATTEI CANCER CURE.

ACCORDING to the *Times of India*, the latest annual report of the Chemical Analyst to the Government of Bombay seems to indicate that there is a steady increase in wilful poisoning for purposes of revenge, and the proportion of fatal cases is also increasing. One hundred and seventy-five cases were reported during 1894, and some fifteen hundred articles were chemically examined in connection therewith. There were fifty instances of poisoning by arsenic, the proportion of deaths from this cause rising to 50 per cent. Cases of datura poisoning were double the number of the previous year, and opium-poisoning is also largely on the increase.

A curious point is that many poisoning cases reported were quite wanton and motiveless. In others, again, the poison, generally arsenic, was administered to men by, or at the instigation of, their wives. A singular case is that of the Subordinate Judge of Bijapur, who died five hours after calling in a native "quack-doctor." That worthy treated him with scrapings from a "matras," a piece of stone-like substance, which on analysis was found to contain arsenic and sulphur. Another "matras" possessed by the same individual contained mercury and sulphur, with some particles of gold, which the owner declared to be a specific in cases of fever. These mysterious medicinal preparations are crudely made and as crudely administered, and the chances of patients treated with them vary according to the proportions in which the different ingredients are scraped off.

Mercury, copper sulphate, the seeds of yellow oleander (*Cerbera thevetia*), strychnine, and phosphorus were other poisonous materials employed by would-be murderers, though arsenic appears to have been the general favourite, and two attempts were made to destroy life by administering powdered glass. It is observed, curiously enough, that the use of the latter substance almost always leads to the detection of the offender, whilst it is not found to be dangerous to the life of those to whom it is administered.

The "matras" is not, however, equal to Mattel's dirty water at about 1s. 6d. per oz.

TREE TRUNKS AS FILTERS.

A WELL KNOWN Austrian engineer, M. Pfister, says the *Railway Review*, is stated to have discovered a remarkable property of the trunks of trees, namely, that of retaining the salt of sea-water that has filtered through the trunk in the direction of the fibres, and he has constructed an apparatus designed to utilise this property in obtaining potable water for the use of ships' crews. It consists of a pump, which sucks up the sea-water into a reservoir and then forces it into the filter. As soon as the pressure reaches 1.5 to 2.5 atmospheres the water makes its exit from the other extremity of the trunk, at first in drops, and then in fine streams, the water being described as free from every trace of its original saline constituents.

THE SELECT COMMITTEE ON ADULTERATION.

THE Select Committee appointed to inquire into the working of the Sale of Food and Drugs Act reports that it has not had sufficient time to conclude its investigation, but it has been agreed to report to the House of Commons the evidence already taken, and to recommend that a similar committee should be appointed in the next Parliament. Mr. Edmund Gosse, of the Board of Trade, is specially thanked for preparing a translation and *précis* of the adulteration laws of foreign countries.

HOW TRADERS INJURE THE REPUTATION OF GUINNESS'S STOUT.

AT the Marylebone Police-court, on July 16, Albert Wythe, grocer, etc., of 2, Mill-lane, West Hampstead, was summoned under the Merchandise Trades Marks Act for selling stout with a false trade description attached to it. Mr. Humphreys, barrister, was for the prosecution. Messrs. Guinness, Son, and Co., the well-known brewers, of Dublin, had been in the habit of supplying the defendant's firm with their extra stout in bulk, and with labels to put on the bottles in which it was sold. According to an agreement the defendants were not to sell any other kind of brown stout. Mr. Elliott, from the firm of Messrs. Hartley and Co., the London

agents, called at the defendant's shop on the 5th ult., and found Coombs' stout and Guinness's stout both on the counter. He purchased half a dozen bottles of the latter, the labels having been recently put on. The contents of one of the bottles was analysed in Dublin by Mr. George E. Beare, who found the specific gravity to be 1056.3, whereas the original specific gravity was 1072 to 4, showing a deterioration of 16 deg., or an equivalent of 14½ gallons of water to a cask of 56 gallons. In the witness's opinion it was not Guinness's extra stout.—The defendant cross-examined with the object of showing that the stout might have evaporated in course of transit and during the operation of bottling, which would have reduced the gravity.—Mr. Beare admitted that exposure would alter the gravity, but added that it would take six months' exposure to have produced the deterioration in question.—The defence was that the stout was what it was represented to be, and that the 16 deg. gravity had been lost through evaporation.—Mr. Floudden said the defendant had advanced a number of ingenious defences and hypothetical arguments, but there could be no doubt that an offence had been committed. He fined the defendant £5, with 10 guineas costs.

PRODUCTION OF FRENCH BRANDY.

DURING the course of a debate, which recently took place in the French Chambers, the following statements were made with regard to the production of brandy in France. In the year 1850 the total production of alcohol of every sort was 891,500 hectolitres or 19,613,000 gallons; out of this total 815,000 hectolitres or 17,930,000 gallons were made from wine, cider, or from other fruit products; there remained, consequently, only 75,500 hectolitres or 1,661,000 gallons of trade brandy (*alcool d'industrie*).

In 1876 the total production of brandy had risen to 1,709,000 hectolitres or 37,598,000 gallons, of which 1,054,000 hectolitres or 23,188,000 gallons were trade brandy, and 655,000 hectolitres or 14,410,000 gallons were made from wine, cider, or fruit.

At this date the phylloxera made its appearance, and, as a consequence, the amount of brandy made from wine decreased steadily, whilst on the other hand the production of trade brandy increased enormously, and quite out of proportion to the diminution which occurred in the production of wine brandy; indeed, for one hectolitre or 22 gallons of wine brandy which disappeared no less than three hectolitres or 66 gallons of trade spirit made from corn, molasses, or beetroot took its place. Thus in the year 1886, out of a total production of 2,052,000 hectolitres or 45,144,000 gallons, not less than 2,000,000 hectolitres or 44,000,000 gallons were trade spirit.

In 1889 there was so much over-production that the Chambers thought fit to decree by law on the 8th of July, 1890, an import duty of 3 francs per 100 kilogs. on maize and on rice with the view of diminishing the amount of brandy produced from farinaceous substances. As a consequence of the imposition of this duty the amount of brandy produced from this substance declined from 758,000 hectolitres or 16,676,000 gallons in 1889 to 392,000 hectolitres or 8,624,000 gallons in 1891. As far as the production of alcohol from maize and rice was concerned the object was attained, but the general situation did not change. It is true that there was a diminution of 350,000 hectolitres or 7,700,000 gallons from farinaceous substances, but on the other hand there was a corresponding increase in the amount of brandy produced from beetroot and from molasses. The fabrication of trade spirit was still further developed, and in 1893 the total production of alcohol had reached the extraordinary figure of 2,476,000 hectolitres or 54,472,000 gallons.

The consumption had at the same time augmented, but not in the same proportion as the production, which in 1892 and 1893 increased so rapidly that as a natural consequence the surplus stock of alcohol on hand on the 31st of December, 1893, was found to be 2,980,805 hectolitres or 65,579,690 gallons. The amount in hand is no doubt serious, but it becomes all the more so in view of the vintage of 1893. The wine produced in the month of September, 1893, would not in the natural course of things be made into brandy until the month of February or March, 1894. As the amount of wine turned into brandy increases, by so much will the trade brandy be put on one side, and the natural brandy will regain its original position. The situation is regarded in France as very serious for the departments of the north, where the greater part of the trade brandy is now produced.

BELGIAN MARGARINE PRODUCTION REGULATIONS.

EVERY owner of a margarine or artificial butter factory, or of vessels and utensils together forming an apparatus for the manufacture of margarine or artificial butter, is bound to make a declaration to the office of the receiver of excise. The owners of oleomargarine factories or tallow-melting houses are bound to observe the same formality.

The manufacturers referred to in the preceding article are bound to facilitate the Government officials in the performance of their duties. They must furnish these officials with the means of calculating the amount of raw material consumed, and of products

obtained, and permit them to take the necessary samples. They are likewise bound to account for the origin of the raw materials.

Any attempt to suppress excisable material is punishable with a fine of 2,000 francs.

Any manufacture of margarine or artificial butter carried out without a declaration otherwise than by means of the vessels described as for this purpose in the declaration is punishable with a fine of 5,000 francs.

Besides the confiscation of utensils and imprisonment of from three months to two years, the fine referred to in the preceding paragraph is doubled if the act has taken place in an illicit factory, or, in the case of a legally-established factory, elsewhere than in the localities where the utensils described in the declaration are kept.

If a manufacturer of margarine or artificial butter works without having paid or guaranteed the duties, or if he has been mulcted in a fine for one or other of the reasons mentioned in paragraph 2 and 3 of the present articles, the administration can, if deemed necessary for the assurance of the duties owing and the fines incurred, seize and remove, by an order of the President of the Tribunal, all the vessels and utensils of the factory.

MIXED AGAIN.

At Manchester, on July 17, Peter Rowlinson, 38r, Hyde-road, Ardwick, grocer and provision dealer, was charged with selling margarine as butter, contrary to the provisions of the Merchandise Marks Act, on June 20. The charge was brought at the instance of the Manchester Corporation. One of the inspectors said he went to the shop of the accused on the day named. He saw seven parcels of butter and margarine on the counter. Three were labelled "Margarine," and four were unmarked. From one of the parcels, which was unmarked, and which was supposed to be butter, the inspector purchased 1lb., for which he was charged 10d. On analysis it proved to be margarine. The defendant said that what the officer had bought was margarine, but it was a mistake. It so happened that the night before, owing to the hot weather, the

butter and margarine were taken into the cellar, and when brought up in the morning a parcel of butter had got on a platter labelled "Margarine," and a parcel of margarine, which was only 6d. per lb., had got in the place of the butter, and was being sold as butter at 10d. per lb. He believed at the time that it was butter. His system of distinguishing the two substances was as follows:—All the platters were labelled with the word "Margarine" on one side, but when butter was placed upon them that part of the platter upon which the word was labelled was turned to the inner side of the counter, and was not visible to the customer.—The bench inflicted a fine of 40s. and costs.

MR. STEVENS AGAIN.

At Southwark Police-court, on July 16, Thomas F. Stevens, a dairyman, carrying on an extensive business at 40, Swan-place, Old Kent-road, appeared to a summons taken out at the instance of the Bermondsey Vestry, charging him with having sold milk deficient of its natural cream to the extent of 20 per cent.—Mr. Ricketts, who appeared for the defence, said the defendant must plead guilty owing to the fact that he was unable to identify the sample purchased by the inspector. The defendant was supplied with milk under a warranty that it should be pure milk, but owing to pressure of business some was purchased from a strange dealer, and it must have been of this that the prosecution purchased a sample—Previous convictions having been proved, the defendant was fined the full penalty of £20 and costs.

THE HEALTH WATER PIPE

NEVER POISONS THE WATER.



PATENTEES:

WALKER & CO., HECKMONDWIKE.

**Non-Poisonous,
Non-Corrosive,
Non-Volatile.**

IZAL
DISINFECTANT.

*The Surest Protector
against FEVERS, SMALL-
POX, CHOLERA, DIPH-
THERIA, & INFECTIOUS
DISEASES.*

A NEW DISCOVERY—NOT a coal-tar product.

IZAL AS A DEODORISER.

It has **NO** equal. Conclusive proof has been obtained in cases of **Advanced Cancer**, in which the **Stench** was so **Sickening** that the nurses could not have borne it without **IZAL**. It was equally successful in neutralising the Smell of a **decomposing corpse** in a case where **other deodorisers were entirely useless**. **IZAL** mixes readily with **Water, Acid, Salt Liquids and Sea-Water**. Being **Non-Volatile**, it is more **persistent** and more **powerful** than Carbolic Acid, and perfectly **Safe**, being **Non-Poisonous**.

ONE GALLON makes 200 gallons of ACTIVE LIQUID, whereas Carbolic is usually given to be diluted 1 in 80.

The COST of IZAL is but ONE PENNY for 4½ Gallons.
SEND FOR IZAL PAMPHLET WITH DIRECTIONS.

IZAL MEDICAL SOAP. This belongs to the same class as the Toilet Soap, but being stronger, is more applicable for Surgeons' use before and after operations, and for antiseptic purposes in the sick room. It also affords a powerful agent in the treatment of Skin Diseases. In boxes, 2s. each.

IZAL CREAM. Bland and emollient. A very convenient antiseptic application for the skin, and useful for rubbing on the bodies of fever patients during the period of desquamation, thus preventing infection from the scales. In tubes, 1s. each.

IZAL OINTMENT. A powerful antiseptic ointment extremely valuable for the healing of wounds, burns, and scalds, chapped hands, broken chilblains, etc. In pots, 1s. 1½d. each.

IZAL TOOTH POWDER. This is a powerful antiseptic powder, destructive to the acid forming bacteria, which cause the

decay of the teeth and sponginess of the gums. Its daily use will keep the teeth sweet and the gums healthy. In boxes, 1s. each.

IZAL LOZENGES are efficacious in Coughs, Colds, and Sore Throats, more especially when of an ulcerated or diphtheritic nature. They are invaluable as a preventive against infection. Price, 1s. 1½d. per box.

IZAL SMELLING SALTS, for the cure and relief of Influenza, Catarrh, Cold in the Head, Faintness and Giddiness; useful whenever a smelling bottle is required. Price, 1s. 1½d. per bottle.

IZAL EMBROCATION is effective and useful in treating Sprains and Bruises. It is a superior preparation, powerfully antiseptic and quickly relieving any unusual muscular strain. For Domestic Application, 1s. 1½d. per bottle; for Veterinary use, 2s. per bottle.

Sole Proprietors and Manufacturers:

NEWTON, CHAMBERS & CO., Ltd., THORNCLIFFE, SHEFFIELD.

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London.

COLEMAN'S "WINCARNIS"

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

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Have been awarded.

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Food and Sanitation.

SATURDAY, AUGUST 3RD, 1895.

ITALIAN OLIVE OIL SWINDLES.

It is by no means a pleasant thing for retail traders to learn that a Hull analyst has found that out of ten samples of olive oil from Italy, which he recently examined, only two were genuine. The analyst in question, Mr. John S. Lindford, thus explained how wholesale dealers are in the first place swindled, and how, in their turn, the retailers are made to suffer the disgrace of a police-court prosecution for adulteration of which they cannot reasonably be supposed to have any knowledge. The firm by whom Mr. Lindford is employed sold some olive oil to Mr. Henry Mells, chemist, Kirton. Supt. Crawford, acting under the Food and Drugs Act, purchased some of the oil, which

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"SANITAS" Kills all Disease Germs.

"SANITAS"—"Valuable Antiseptic and Disinfectant."

—Times.

"SANITAS"—"Enjoys general favour."—Lancet.

on analysis by Mr. C. H. Southwell, public analyst, Boston, showed an adulteration of 20 per cent. of cottonseed oil. Mr. Mells was therefore summoned at the North Holland Petty Sessions, on July 17, when Mr. Southwell gave evidence that good olive oil was about three times the value of cottonseed oil. Genuine olive oil was necessary for the manufacture of official preparations of the Pharmacopœia, of which it entered into the composition of 15. —The Chairman: How is it mixed, and when is it supposed to be mixed?—Mr. Southwell: Oh, at any time.—The Chairman: By the manufacturer?—Mr. Southwell: Yes, or by the retailer even. It would not be possible to tell where or when it was mixed.—Mr. Upsall: All you can tell is that you found it in that condition?—Mr. Southwell: I found it in that condition.—The Chairman: The intrinsic value of it in that condition would be about two-thirds less?—Mr. Southwell: About that.—Defendant: I bought the oil as pure olive oil.—Mr. Upsall: And you sold it as you bought it?—Defendant: Certainly.—The Chairman: I quite believe that, but it is a matter of serious importance to the public.—Mr. Southwell: I may say that I have had four samples sent to me this quarter, and I have found three of them to be genuine.—The Chairman: They may have charged the defendant the full value for the oil?—Mr. Southwell: That is possible.—Mr. John S. Lindford, of Hull, analyst to the firm from which the oil was purchased, was called to explain how it was that the oil left his firm in an adulterated state. He said he analysed samples of all oil sent out. The sample of this oil received by his firm was found to be pure, but when the bulk was received they omitted to submit a sample to him for analysis, and it was not until the defendant had received what he had ordered

that they found it was adulterated. The oil must have been adulterated in Italy, and his firm had a remedy, but it was in Italy. (Laughter.)—Mr. Dyer: And the defendant would have a remedy against you?—Witness: Yes.—The Chairman: Did you discover the oil to be impure before this case arose?—Witness: Oh, yes; a month perhaps after the defendant got his oil, and since then we have sent out no more of it.—Mr. Upsall: Did you notify this to the defendant?—Witness: No; the oil had been supplied to a good many customers, and we could not pick them out.—The Chairman: I think it is very unfair to the defendant to bring him here through that.—Witness said that of ten samples of olive oil he had examined from Italy only two were pure.—The Chairman: It is very hard on a respectable tradesman that he should be brought here under the stigma of having sold an inferior article.—Mr. J. Clarke: You know all your customers, I suppose?—Witness: Yes, sir.—The Chairman thought it was very unfair to the defendant that no warning was given to him when the oil was found to be adulterated.—Mr. Upsall: You admit that you sold him the oil as a pure article?—Witness: Yes.—The Chairman: And charged the price of the pure article?—Witness: Yes, sir.—The Chairman: You believed at the time that it was pure?—Witness: Yes.—The Chairman: And you were taken in?—Witness: Yes, we were taken in.—The Chairman: I suppose you returned the proportion of the purchase money after you found the oil was impure? (Laughter.)—No answer.—Dr. South was then sworn, and was asked by the Chairman whether in its application the result would be affected by the purity or otherwise of the olive oil used for medical purposes.—Dr. South: Yes. Of course, olive oil is very seldom given internally; it is used chiefly externally, but it is very essential that the oil should be pure.—The Chairman: And if you order it you expect it to be the genuine article?—Dr. South: Certainly. It would make a great difference in the keeping of the article for one thing; pure oil would keep much better than impure; and the smell would be another thing.—The Chairman, after consulting with his brother magistrates, said that unfortunately the defendant was the only person they could deal with, as the oil was found on his premises. That oil was admitted to be impure, and as olive oil was sold for medicinal purposes it was expected to be a pure article, and its impurity might be a serious matter. To warn other people from selling an impure article it was necessary they should inflict a fine on the defendant, but that fine, he need hardly say, he hoped would not be paid by the defendant, because he was as innocent of any intention to commit a legal offence as any member of that Bench, and he would leave that Court without any stain on his respectability as a tradesman. At the same time he was the only person the Bench could deal with, and they must show their disapprobation by fining him £1 and costs.

The above case illustrates a very serious grievance

suffered by traders under the existing Acts. The wholesale firm buy olive oil from sample which they cause to be analysed. They may be blameworthy for not having an analysis made of the bulk delivered, but in the stress and hurry of business it would not be possible for any wholesale firm to have every delivery of goods analysed, and if it were possible, the cost would be very heavy and the delays be fatal to business. Thus the wholesale trader must take a great amount of goods on good faith, and the retailer must do likewise. At the same time the public require protection from fraud, and the public interest needs that there should be some point at which the law can step in to prevent swindling. To make the law such that the production of an invoice stating that the article was bought as olive oil would have exonerated Mr. Mells from blame, and caused the prosecution to be withdrawn would appear at first sight to be only fair, but a little close examination of the question at issue shows how dangerous this procedure would be, and that it would encourage fraud to grave public injury. The retailer would escape scot free, being innocent, and so in his turn would the wholesale dealer, for this latter also purchased the article as pure olive oil, and even took the precaution of having it analysed. The only person left for the law to punish would be the Italian original vendor, who is outside the jurisdiction of the English Courts, and could laugh at any attempts to reach him. None the less, the case is a great hardship to the retailer who is prosecuted and fined, but how to make impossible that hardship, and still keep up what must be preserved—a pure food supply—is a problem as hard as any the Sphinx even could propound. It is one that will tax the ability of the new Food Products Committee to its utmost, but in the meantime, whilst olive oil is for the retailer so dangerous an article to vend, traders would do well to sell only such oil as the wholesale dealers will guarantee is pure. The enormous operations of Crosse and Blackwell enable that firm to select pure oil, and retailers who buy from them need not fear prosecutions. In the present condition of the olive oil trade a word to the wise should be sufficient.

THE SARSAPARILLA HUMBUG.

OUR contemporary the *Pharmaceutical Era*, has the following richly humorous paragraph in its London correspondence:—

“HOOD NOT TO BE HOODWINKED.

“Ever since C. I. Hood and Co., of Massachusetts, started pushing business in a large way over here, they have been worried by imitators and substituters. About a month since they had to expose a Bristol fraud, and now they have had to turn their attention to a man running a stall in Fleet-street for the sale of ‘Hood’s Sarsaparilla Tablets.’ The hawker asserted before the Alderman at the London Mansion House that he worked for a man named Hood living at an address in South London, but it was proved that no such man

was known at that address, and so the petty offender was removed to the cells for seven days.

"This firm, by-the-way, lost six tons of advertising matter through the collision with an iceberg of the freight boat that was bringing it over."

Considering that the sarsaparilla nostrum was exploded many years ago, it is, perhaps, an unmixed blessing that an iceberg sent the six tons of advertising trash to the bottom of the sea. The manner in which the English public are being gulled by American quack nostrum gangs has become so grave a scandal as to need prompt legislation. The M.P. who would bring in a short Act compelling the trash to bear a guinea stamp, and thus render impossible the sale of Safe cures, pink pills for pale people, and the like nostrums would do a great public service.

WHISKY AS IT IS MADE.

DURING a prosecution in Calcutta recently for the fraudulent manufacture of spirits by a European named John Croft, the following interesting inventory of some of the contents of that enterprising individual's laboratory—or cellar, rather—was produced:—One hundred bottles of essence of whisky and brandy, one bottle essence of Irish whisky, essence of pineapple, sweet-almond oil, two large bottles of œnanthic ether, two bottles malt ether, a large jar containing extract of grapes, a vial of nitric acid, tincture of capsicum, tincture of tobacco, tincture of liquorice root, oil of grapes, jars containing tincture of apricot, tincture of plantain (bananas), tobacco and chillies, caramel, and packets of oxide of manganese. This list is said to embrace all the essential elements of the noted brands of Scotch whisky, which are so popular in India, any of which were said to be made to order as required.

M'yes—but what about the Indian corn, damaged fruit, &c., whisky commonly sold in the United Kingdom?

BOVRIL STILL ADVANCES BY LEAPS AND BOUNDS.

THE seventh ordinary general meeting of the shareholders was held on July 26, the Right Hon. Lord Playfair, G.C.B., LL.D., in the chair.

The Chairman, in proposing the adoption of the report, said that last year he congratulated the shareholders upon the position of the company, and he told them that they had paid off certain liabilities, in the time of their prosperity, in order to clear their accounts as completely as possible, and he also said that he trusted, when he met them this year, he would be able to report a prosperous twelve-month's business. The accounts before them showed that had been the case. How far they might view the past year as a normal one he did not know. The influenza which prevailed, whilst the enemy of the human race generally, was a great friend to bovril, and largely increased the consumption of that commodity. To some extent undoubtedly the influenza was the cause of the increased sales, but he thought the knowledge of what bovril was was permeating the public mind that was gaining the increased confidence of the public—a confidence which, as the Company got older, he believed would be still more permanent. The difference between bovril and the ordinary meat extracts was that, whilst one was a useful stimulant and might add to certain constituents of the human body, it contained only about 2 per cent. of the necessary conditions for building up the fabric of the human body, and bovril does contain those constituents which are so necessary for nutrition. That knowledge was acted upon by medical men, and they knew when they desired something to build up the

wasted frames of invalids that they had in bovril the means doing so. That he believed was one reason for the largely increased consumption. The accounts showed that they were able to pay—what he might call a large dividend—one of 15 per cent. for the year, which, with a bonus of 5 per cent., made a total of 20 per cent. (Hear, hear.) But not knowing how much their increased business might be due to the influenza, or how far it was connected with a general increase of confidence in Bovril as a nutritious food, they had thought it wise to add to their financial strength, and they therefore proposed to add £25,000 to the reserve. (Cheers.) Why should they build up a considerable reserve? If they looked at their assets the first figure was goodwill, trade marks, and patent rights, £69,618. Now, with a prosperous company like theirs, that was a realisable asset, but if at any time they became not prosperous and things went to the bad, that would not be a realisable asset, such as capital invested in land or houses or machinery, etc., where the asset would be saleable and realisable, and, therefore, they thought there should be a reserve which was equivalent to writing down a large amount of the £69,000 in goodwill and patent rights, and other assets of that kind. They had accepted in the past the policy of the Board of making a good reserve, and they had added substantially to that reserve, and it was now £45,000. They had also taken advantage of their prosperity to pay off their debenture debt, and in the middle of September it would be completely paid off. Some had been drawn for, and the rest they had the right to pay off at a premium of £102, and so they would not be charged that 6 per cent. for money they no longer required. Although he thought the influenza had a great deal to do with the great sale of bovril, that did not explain the whole increase. There was no influenza now, and yet the sales were much larger than at the corresponding period last year, and that convinced him that there was a growing knowledge now of bovril. There were prejudices still, but people knew that the very best beef was taken and could only be used. But prejudices died hard, and the scanda which people from interested motives spread about as to the mode in which bovril was made was disappearing, and their sales, he was glad to say, that month were extremely satisfactory. They were now about to introduce a new product to which they attached considerable importance. As bovril was so much used in the case of invalids recovering from weakness, they had prepared a dried albumen. Albumen was exactly the same composition as flesh and blood; if they could get albumen in a dried form it would be a very important thing to have, especially for invalids, for it enabled soup or food to be strengthened to as great an extent as could be wished. The albumen was dried at a temperature below coagulation, and had nothing added to it to preserve it—its dryness preserving it—and it contained 85 per cent. of true flesh-forming matter.

The report was adopted.

ADULTERATION PROSECUTIONS.

SOMERSET HOUSE AND VINEGAR.

AT Southampton, on July 24, William Day, Southern Drug Company, was, on adjourned summons, charged with selling as white wine vinegar an article not of the substance and quality demanded, the borough analyst saying it was diluted distilled acetic acid. The Town Clerk (Mr. G. B. Nalder) appeared to prosecute, and Mr. H. D. M. Page defended. The Town Clerk said that of the sample sent to Somerset House it was said it was "distilled vinegar, commercially known as white wine vinegar, and that it does not consist of diluted distilled acetic acid." He was going to ask the Bench to allow Mr. Brierley, borough analyst, to go in the box, and then to withdraw the charge. He might say he was entitled to urge that the certificate from Somerset House was not evidence, and could not be used at all. Mr. Page said he had no objection to the course proposed by Mr. Nalder. The sample that remained with his client was sent to Dr. Muller, whose analysis practically agreed with that from Somerset House. His client bought the vinegar from a leading house, and sold a perfectly genuine article. Mr. Brierley explained that he had to deal with what was submitted to him as white wine vinegar. He could buy that as a genuine article over the counter at Southampton. Mr. Page said he did not see any necessity for travelling outside the case. Mr. Brierley proceeded to state that in giving the result of his analysis it was in a general sense, but Somerset House had done so in a specific sense. As to whether the article was commercially known as white wine vinegar, that, he took it, was out of his province. What he had to determine was simply whether it was of the nature, substance, and quality as submitted, and he said it was not. Mr. Page was proceeding to address the Bench, when Mr. Payne, interposing, hinted that he saw no necessity to pursue the matter, as the case was going to be withdrawn. Those gentlemen did differ sometimes.—In connection with a similar adjourned summons against William Walters, chemist, Oxford-street, for whom Mr. Lampport appeared, the Town Clerk said he also proposed that the summons in this case be withdrawn. In this case the defendant pleaded guilty, but as the case was similar he had said that it should await

the result of the Somerset House analysis. Mr. Lamport said he should have no objection to the proposal of the Town Clerk to withdraw the cases. Both cases were then withdrawn.

MILK.

At Newark, on July 25, John Wilkinson, milk seller, Clinton-street, Newark, was summoned for selling milk not of the substance and quality demanded by the purchaser, on June 27. Mr. W. A. Smith appeared to watch the case on behalf of Mr. Tomlinson, Newark, the original vendor of the milk. Mr. Wilkinson was undefended. The prosecution was undertaken by Mr. Geo. Horspool, inspector under the Food and Drugs Act for the borough of Newark. He deposed to taking samples of milk from the defendant on June 27. Dr. Ashby, the borough analyst, reported that there were nine parts of added water in a sample sent to him. Mr. Smith pointed out that the figures of the analysis totalled up made 111.3, which was 2 per cent. in favour of the defendant. The magistrates agreed that the parts were greater than the whole, and that the figures were faulty. The inspector said he could not explain it, as he did not understand the matter; he relied upon the analyst entirely. The Bench said the evidence was faulty and the case must be dismissed.

At Liverpool, on July 24, Job Gadie, milk dealer, Ruskin-street, was fined 10s. and costs on two informations for selling milk to which water had been added. A similar fine was imposed upon George Hodgkinson, milk dealer, Sessions-road, for a like offence.

At Kidderminster, on July 26, Mrs. Mary Ann Robins, of Sutton Farm, was charged with having sold milk in which there was 9 per cent. of added water.—The Bench fined defendant, against whom there had been previous convictions, £10 and costs.—James Duffield, of Offenmore-road, was fined 10s. and costs for selling new milk from which 17 per cent. of cream had been extracted.

At Swansea, on July 29, Ann Dalling, a milk vendor, of Norfolk-street, was fined 40s. for selling milk which was adulterated to the extent of 19 per cent.—Elizabeth Stevens, of Mount Pleasant, for a like offence was fined the same amount.

A SOLICITOR ON MILK.

At Lawford's Gate, on July 25, William Owen, of Hambrook, was charged on remand with selling milk adulterated with 6 per cent. of added water. Mr. H. H. Gregory appeared for the prosecution, and Mr. H. R. Wansborough defended. The case had been adjourned in order that samples of the milk might be sent to Somerset House for analysis. Mr. Gregory reminded the bench that he proved his case on the last occasion, and was about to proceed with other remarks, when Mr. Wansborough interposed and said Mr. Gregory had made his speech when the case was first heard. *Mr. Wansborough then addressed the bench for the defence, and contended that it was impossible to detect the addition of water to milk, as there was 88 or 89 per cent. of water in milk, and only 11 or 12 per cent. of solids.* The constituents of milk would vary according to the condition of the cows and the nature of their food. At the time when this complaint was made the defendant's cows were being fed on grain, which resulted in a deterioration in the quality of the milk. There was no attempt whatever on the part of his client to deceive his customers. The two analysts who had examined the milk differed to the extent of 100 per cent. as to the amount of added water which it was alleged to contain. The bench said they were of opinion that no attempt at fraud had been made in this case. It was well known that milk varied in quality, and this was a case that the bench would have been glad not to have had brought before them. The case would be dismissed.—A similar charge against John Collins, for whom Mr. J. Nichols appeared, was also dismissed.—The same solicitor on the preceding day defended Henry Bishop, dairyman, of North-street, Bedminster, who was summoned for selling milk adulterated with 11 per cent. of added water. Sergeant Beer, an inspector under the Food and Drugs Act, stated that on the 3rd inst. he saw the defendant on Clifton-hill, and bought a pint and a-half of his milk, telling him that he intended to submit it to the public analyst. He divided the sample into three parts, and defendant kept one. He produced the certificate of the analyst. In reply to Mr. H. R. Wansborough, who defended, he said that samples of the defendant's milk had been taken in 1890 and 1892, and had not been found impure. Mr. Wansborough quoted authorities to show that it was practically impossible to detect the adulteration of milk by water. There was no agreement among analysts as to what constituted the standard of genuine milk. The bad quality of the milk might be due to the condition of the cow itself from want of succulent young grass in the dry season. Mr. Arrowsmith: The defendant should get his milk from good cows. *Mr. Wansborough said that if there was no rain no good milk could be got. Until the Conservative Government came into office they had no rain, but directly they had a respectable Government in office they had plenty.* Defendant was called by Mr. Wansborough, and denied having adulterated the milk. During the dry season grass had been scarce, and the cows had been fed

on grain, with the natural result that the milk was inferior. The bench came to the conclusion that the milk was adulterated, and fined the defendant 20s. and costs.

EXTRAORDINARY SOMERSET HOUSE CERTIFICATE.

At Kanturk Petty Sessions on July 27, before Mr. William N. Leader and Mr. G. Sharpe Bolster, J.P.'s, an adjourned case under the Food and Drugs Act, which involved some interesting points, came on for hearing. Sergeant Francis Hutchinson, local inspector under the Food and Drugs Act, prosecuted, the defendant being a farmer named Dennis Duggan, residing at Coolclough. The defendant (who was represented by Mr. E. A. Beytagh, solicitor, Kanturk) was charged that "On the 30th of May, at Coolclough, defendant did unlawfully sell to the said complainant, to his prejudice as purchaser thereof, an article of food, to wit, one pint of new milk, which was not of the nature, substance and quality of the article demanded by said complainant as such purchaser, contrary to the law in such cases made and provided, such milk being adulterated with 20 per cent. of water."

The sergeant having proved the sale of the pint of milk, described having divided it into three samples. One sample he forwarded for analysis to Mr. Daniel O'Mahony, of Cork, the county analyst; the second sample he retained; and the third sample he gave to the defendant. The sergeant handed in the certificate of Mr. O'Mahony stating that the milk sent to him for analysis had been adulterated with at least 20 per cent. of water, the percentage of fat being 1.93.

On the last court day Mr. Beytagh, for the defence, sought to put in evidence the analysis of Mr. Walter Thorpe, of Limerick, to whom the defendant had forwarded his sample. Mr. Thorpe's certificate stated that the sample forwarded to him contained no added water, the percentage of fat, according to his calculation, being 1.68.

Sergeant Hutchinson objected to Mr. Thorpe's certificate being put in evidence as he himself should be there to support it; he not being the county analyst appointed by the Grand Jury, therefore his certificate could not be accepted as evidence. Besides, he charged the defendant with tampering with the sample entrusted to him.

On that day the magistrates who held with Sergeant Hutchinson on the point of the inadmissibility of Mr. Thorpe's certificate directed the Petty Sessions clerk (Mr. Fetherston) to forward the second sample, which was retained by the sergeant, to the Somerset House authorities for analysis so as to dispose of any possible doubt there may be in the case.

To-day Mr. Fetherston handed up to the magistrates the certificate from the Somerset House Laboratory of the analysis of the sample of milk which he had forwarded to them as directed. That certificate gave the percentage of fat contained in the sample as 1.50, and then went on to state—"From the consideration of the analytical results we are of opinion that the milk affords no evidence of the presence of added water."

Sergeant Hutchinson contended that this certificate not having complied with the requirements of the section could not therefore be relied on or accepted as evidence. It did not set forth from whom they received the sample (as they were bound to do), and it also gave the wrong number, 28, the number on the sample forwarded them being 82. That certificate might have reference to the analysis of a sample of milk from the North of Ireland.

Mr. Beytagh, addressing the bench, said the sergeant's argument was sheer nonsense. The sample had been forwarded to Somerset House by Mr. Fetherston, by the magistrates' directions, where it was carefully analysed, and the result was the same as that forwarded by the Limerick analyst, Mr. Thorpe. If they could not accept the analysis of Mr. Thorpe, could they go behind that of Somerset House, which clearly established the innocence of his client who for so long had been under this terrible charge of fraud? With regard to the difference in the numbers, that was surely a clerical error, the figures being reversed by mistake, 28 being substituted for 82. His client had been charged even with tampering with his sample, and there was not the slightest foundation for that accusation, as was clearly shown now, when the analyses of the Limerick gentleman and the Somerset House authorities gave the same result. His client could not be held responsible for the blunder which might have been made by that gentleman in Cork, and he confidently asked them to dismiss the case on the merits.

Mr. Leader said the magistrates were perfectly prepared to convict. They would impose a penalty of £2 and costs.

Mr. Beytagh immediately gave notice of appeal.

SPIRITS.

At Northampton Borough Petty Sessions, Eli Eales, publican, Floore, was summoned for a breach of the Food and Drugs Act by selling diluted brandy at Floore on June 5.—Mr. C. C. Becke defended.—Fined 10s. and 6s. costs.—Jonas Newitt, publican, Floore, was summoned for a similar offence at Floore on June 5.—Mr. C. C. Becke again defended, and the defendant was fined 10s. and 6s. costs.

At Retford, on July 22, Walter Kirkby, landlord of the Vaults, Carol-gate, was fined £5 and expenses for selling whisky and gin diluted with water to a greater extent than allowed by law. Mr. Garforth, inspector under the Food and Drugs Act, said he purchased whisky and gin, which had since been analysed, and the certificate of the county analyst stated that the whisky contained 22.4 parts of added water, the lowest quality of whisky allowed by law, and the gin 19 parts. Mrs. Kirkby said she was out, and her husband, who mixed the spirits, did not understand it.

At Worthing, on July 24, James Lee Carpenter, of the Steine Hotel Shades, pleaded guilty to a summons charging him, through his servant, with selling whisky not of a quality and substance demanded by the purchaser, being adulterated with six per cent. of added water. The defendant said he was not aware of the circumstance, and he would take care that such a thing did not occur again. Fined 16s. 6d., including costs.

At Petworth Henry Croysdill, landlord of the Half Moon Inn, Kirdford, was summoned for selling to Sergeant White, on June 25, whisky of the lowest legal strength, and containing 23 parts of added water.—Defendant said he would plead guilty, but he did not act with the intention to defraud. P.S. Waite deposed to buying the whisky, which was sold him by defendant's wife. It was forwarded to the analyst, whose certificate showed that the sample contained 77 per cent. of whisky of the lowest legal strength and 23 per cent. of added water. Defendant and his wife were sworn, and gave evidence showing that the matter was the result of an accident, his wife drawing the whisky in a measure in which there was some water.—The Bench said they must convict, but the license would not be endorsed. Defendant would be fined £3 including costs.

THE LAW AND THE PUBLICAN.

At Haslingden, Dionysius Law, licensed victualler, of the Bay Horse Inn, Haslingden, was summoned for selling adulterated whisky.—Mr. J. L. Whittaker prosecuted, and Mr. Hyslop was for the defendant.—Mr. Whittaker stated that on June 12 P.S. Harrison visited defendant's house and purchased a pint of Irish whisky, for which he paid 2s., from Mrs. Law. He then told her he had bought it for the purpose of analysis, and offered to divide the whisky into three parts. She went upstairs to see her husband, and afterwards took the officer into an adjoining room and showed him a card on which were the words, "Public notice. All spirits sold at this establishment are diluted from 10 to 35 per cent., according to price." The sergeant afterwards found a similar card in the bar, but it was hidden from view behind some decanters, and he did not see it before making the purchase. The price the officer paid was for the best Irish whisky. The sample was sent to the public analyst who certified that it was 31 degrees under proof, or in other words that it contained 6 per cent. excess of water. Defendant told Sergt. Hall that his wife had mixed the whisky and had done it at random.—It appeared from the evidence that Supt. Proctor accompanied Sergt. Harrison to the house, and gave him the money to purchase the whisky, but remained outside while the purchase was effected, and, under these circumstances, Mr. Hyslop urged that Harrison was not the purchaser, as stated in the summons, but merely the messenger or agent of Supt. Proctor. Mr. Hyslop contended that this was a fatal point. He further urged that as there was a notice in the room, stating that the spirits were diluted, there was no offence, and in support of this quoted a decision of Chief Justice Cockburn, who held that there was no offence even if the purchaser did not observe the notice.—The case was dismissed.

TRYING TO POISON HIS FELLOW-BEINGS.

JOSEPH NICHOLLS, butcher, of Longton, was fined £40 and costs at the Longton Police-court, on July 29, for attempting to sell bad meat. Mr. Ramsdale, who defended, said it was impossible to get very good meat for the low figure for which it was being sold by his client. The magistrates said the case was a most serious one, for the defendant was trying to poison his fellow-beings.

SELLING DISEASED MEAT.

In the Linnithgow Small Debt Court, on July 26, proof was led in an action, at the instance of John Scott, foreman butcher, South-street, Armadale, against the Armadale Co-operative Society (Limited), for £3, the amount of two weeks' wages. Pursuer averred that he was dismissed from defenders' service without getting 14 days' notice, to which he was entitled according to agreement. Defenders contended that pursuer refused to obey their Managing Committee's instructions in respect that, instead of destroying 50lb. of diseased sausages, he mixed them with good meat and made small sausages of them, and which he sold for 8d. per lb. Pursuer in his evidence admitted having sold some of the meat which he was told by the committee to destroy, and stated that his reason for not

destroying the whole of it was because he found some of it to be perfectly sound, and what was unsound he destroyed in the presence of his assistants. The two assistants, who were called as witnesses, denied that any of the meat was destroyed in their presence. At the conclusion of the evidence the Sheriff held that the pursuer had not made out his case. He therefore dismissed the action.

PRISON FOR A DISEASED MEAT VENDOR.

WILLIAM GEORGE ONIONS, butcher, 177, Spring-hill, was fined £5 and costs by Messrs. Fisher and Ryland, at Birmingham, on July 26, for exposing for sale meat unfit for human food. The meat, consisting of beef, mutton, and lamb, was seized by Inspector Edwin Hothersall, and examined by Dr. Bostock Hill, who found it slimy and green, and on the verge of putrescence.—In default of paying the fine, Onions was ordered to go to prison for a month.

BAD MEAT AT ST. HELENS.

At St. Helens, on June 27, George Wrigley, a butcher, of 44, Peter-street, was charged with depositing for sale unwholesome meat. The Town Clerk prosecuted, and Mr. Ernest Swift defended. The case for the prosecution was that on the 29th ult. Meat-inspector Smirthwaite visited defendant's shop, and there found a number of small pieces of beef exposed for sale in the window which were in an unsound condition. He returned to the shop in ten minutes, and found inside the shop the remainder of a forequarter of beef. It was all in a stinking, soft, and sour condition. The meat was seized, condemned, and destroyed.—In reply to Mr. Swift, Smirthwaite said during that week there was a good deal of excessive heat and thunder. The heat would cause it to "work." Evidence was also given by Dr. Robertson, medical officer of health and borough analyst, and Mr. W. G. Dixon, veterinary surgeon.—Having been twice previously convicted, a fine of £10 and costs was imposed, or two months' imprisonment.

BUTTER.

At Liverpool, on July 24, John Callaghan, provision dealer, Stanley-road, was fined 40s. and costs for exposing for sale three lumps of margarine without a label.

BRISTOL CHAMBER OF COMMERCE.

FOOD AND DRUGS ACTS (1875-79).

A COMMUNICATION was read from the Liverpool Chamber of Commerce calling attention to the hardships inflicted in certain cases owing to the present state of the law with regard to prosecutions instituted on the certificates of public analysts in cases of alleged adulteration, and wherein it was stated that this matter had been brought prominently to their notice in consequence of such action having been taken against members in respect of alleged adulteration of lard, and although the same proved abortive the parties were put to very considerable expense in successfully maintaining the purity of their goods. While the Chamber do not in any way wish to weaken the hands of the authorities in dealing with food adulteration, or do anything that might lead to a relaxation of effort on their part, they are of opinion that injustice was done owing to the fact that in such cases the certificate of the prosecuting analyst might be accepted as evidence by the magistrate, while the certificate of the analyst on the part of the person proceeded against could not be so accepted. Considerable expense had in consequence to be incurred in securing the personal attendance of expert witnesses, often at a distance from home, to prove the correctness of the defendant's analysis. It was suggested, as a means of removing the hardship complained of, that it should be provided by law that the certificates of the analysts, both on the part of the prosecution and of the defence, should be accepted, and that the magistrates, on production by the defendant of a certificate certifying purity, should order the third sample, always provided in such cases, to be sent to Somerset House. The Liverpool Chamber requested this Chamber's co-operation in the matter, as there had been similar instances of prosecutions in this city.—Mr. Parker moved, and it was resolved to inform the Liverpool Chamber that the Council of the Bristol Chamber concurred in their views, and would be prepared to assist in moving for an amendment of the law.

WEST SUSSEX COUNTY COUNCIL AND ADULTERATION.

At a meeting of the Sale of Food and Drugs Acts Committee, held on July 12, the public analyst (Mr. Otto Hehner) reported

that he had submitted to him nine samples of butter, seven of ground pepper, four of olive oil, six of spirits, and two of oatmeal. The whole of the samples of butter, pepper, and oatmeal were quite genuine. The low prices of Australian butter during the last quarter rendered margarine altogether superfluous, and adulteration of butter with margarine was, in consequence, very rare. Margarine, which came into use in Paris during a time when butter could not be procured, and has since remained in use, is at best an emergency article for the poor when butter prices are high. He could not but look forward with satisfaction to the time when margarine will no longer be required as a butter substitute, and this time, with Australian butter of good quality at sixpence per pound retail, appeared to be rapidly approaching. With regard to the olive oil, three samples consisted wholly of the much cheaper cotton seed oil. He considered it most imperative that the present law, which allows, in most cases, the real adulterators to go scot free, be so altered and amended that somebody is made responsible for such frauds as the mixing of cotton oil with olive oil. Of the six samples of spirits only two were over the strength fixed by the Sale of Food and Drugs Amendment Act, and four were watered. Of these four, however, two were only very little below the limit, and two others were watered with six and 23 per cent. of water respectively. Thus, out of a total of 28 samples, seven, or exactly one-quarter, were adulterated.

On the motion of Major-General Godman (alderman), these proceedings were approved, and the report of the public analyst was received.

HERTS COUNTY COUNCIL AND THE ADULTERATION OF MILK.

THE County Analyst (Mr. Ekins) reported that "during the quarter ending June 30, 1895, thirty-six samples of food have been submitted to me by your inspectors. The samples consisted of sixteen butters, fifteen milks, two coffees, and one each of lard, ginger, and sugar. Of these, two samples of butter and three of milk were adulterated. With regard to the adulteration of milk, I should like to remark on the change of method that has of late years become apparent. Formerly, water pure and simple was added, and its detection was easy. Now 'separated milk' (that is, milk which has been deprived of nearly all its fat) is added, and owing to the very low standard adopted its detection is almost impossible. The vendor having already made his profit out of the cream or butter, the addition of the commercially valueless residue, which in properly conducted dairies is given to the pigs, is as great a fraud as the addition of water, since the mixture is sold at the price of genuine rich milk. I hope, therefore, the magistrates will support the condemnation of samples showing poverty in fat, bearing in mind that, owing to the very low standard of fat (2.75 per cent.) now adopted, when a milk is denoted as being, say, 30 per cent. deficient in fat, that most probably 50 or 60 per cent. has been abstracted."

ISLINGTON VESTRY AND ADULTERATED MILK.

ON July 26, an extraordinary meeting of the Vestry was held, and the Vestry Clerk stated that the solicitor had applied for and had been successful in obtaining a mandamus, compelling the Clerkenwell police magistrate to hear a case of milk adulteration which he had recently ruled out of his jurisdiction. The milk was supplied to the Great Northern Central Hospital, and was found to be adulterated. It came from Rutlandshire, and was delivered at Highgate Station. The barrister for the defendant, at the hearing of the case, argued that it was not within the jurisdiction of the Court, and the magistrate concurring dismissed it.

Mr. Cuffin moved that the solicitor be instructed to go on with the case.

Mr. Wightman Cooper said he did not think Islington should go out of its district to administer the Food and Drugs Act.

Dr. Buckell said it was one of the planks in the Progressive programme at the last election that the Food and Drugs Act should be rigidly administered, and now they had one of the apostles of the party standing up and taking objection to a course which the Public Health Committee desired to follow, in order that persons should not be cheated. If the Vestry could not get a mandamus, he ventured to think that a great many of the individuals who sent milk from the country would continue to send it adulterated with impunity. The motion was agreed to.

A MAGISTRATE'S JURISDICTION.

IN the High Court of Justice, on July 25, Mr. Macmorran moved *ex parte* for a rule nisi calling upon Mr. Horace Smith, Metropolitan Police Magistrate, to show cause why he should not hear and determine two summonses taken out by Mr. Patrick Mernagh, Inspector of Nuisances for St. Mary's, Islington, under

the Food and Drugs Act, 1875. The learned counsel stated that on June 15 last the inspector saw milk being delivered at the Great Northern Central Hospital in Islington. He took samples, which, on being analysed, were found to contain 14 per cent. of added water. Proceedings were taken against the Dairy Company who supplied the milk, and they proved that they had received the milk with a warranty. Subsequently summonses were issued against the farmer in Rutlandshire who supplied the milk to the Dairy Company, and when these came on for hearing objection was taken that the magistrate had no jurisdiction to hear and determine, on the grounds that the warranty was a label attached to the churns in Rutlandshire, and that the churns were delivered at East Finchley, outside the jurisdiction of the inspector. The magistrate upheld the objection. He (the learned counsel) submitted that the magistrate had jurisdiction to hear and determine, and that therefore he was entitled to a rule.

Their lordships granted a rule nisi.

DOVER TOWN COUNCIL AND ADULTERATION.

THE Town Clerk reported that five samples of butter obtained by the Inspector of Nuisances had been analysed, with the result that they had all been found to be genuine. Two samples of milk were also analysed, one being genuine, and the other containing 6 per cent. of water, but as the bottle containing the second sample was broken, it would be impossible to prosecute, even if it had been thought desirable.

LINDSEY COUNTY COUNCIL AND ADULTERATION.

THE report of the Public Analyst (Dr. Muter) for the quarter ended June 30, 1895, stated that the total number of samples analysed was 49, of which 41 were genuine and eight adulterated. Eight persons had been summoned for the adulterations, and fines varying in amount had been inflicted.

MOREHAMPTON COUNTY COUNCIL AND ADULTERATION.

MR. S. CLOWES, the Inspector of Weights and Measures for the Northern District, presented his annual report under the Food and Drugs Act for the year ending Mar. 31, 1895. Forty-nine samples had been purchased in the district during the past year, and of these one sample of milk and one of whisky were reported as being adulterated. Mr. T. Mattinson, the Inspector of the Southern District, reported that thirty-five samples had been analysed, and one gin, two whiskies, and three brandies were found adulterated.

THE DIGESTION OF FARINACEOUS FOODS.

CHAS. H. STOWELL, M.D., WASHINGTON, D.C.

A FEW weeks since I was very much interested in reading an article by Prof. E. H. Bartley, of Brooklyn, on the digestion of the farinaceous foods. Later this article appeared in the *Dietetic and Hygienic Gazette*. In this same journal there was an editorial which gave the latest method of treating diabetes by the use of the carbohydrates. The two articles, almost side by side, were so opposed to each other that I desire to place myself on the side of the one as against the other.

In Dr. Bartley's article he takes exception to the report of the Committee of Chemists who considered the question of the effects of digested starch on the system, and made their report that even in large quantities grape sugar was without effect. Dr. Bartley objects, simply by asking how they knew that what they reported was true. Had they experimented for themselves? It is the old question of the boy asking his teacher how he knew the first letter was "A."

As this digested form of starch, glucose, enters so largely into the manufacture of candies, beer, and—so Dr. Bartley says—into our cooked fruits, it becomes very important to learn what serious effects such use of these articles have on the system. The most popular beer on the market to-day has recently been shown to have more glucose in it than any other brand analysed. To the presence of this glucose does Dr. Bartley attribute the ill effects of this drink, as I understand it. This is a drive at the prohibition people sure enough, as we all had previously supposed that the dangerous ingredient in beer was the alcohol, and the alcohol only. It may be necessary for us to establish new societies with this thought in mind!

Let us note particularly what the writer says about the use of sweets in fruits. He says that the cane sugar used in cooking our fruits, jellies, preserves, and fruit pies is all changed into glucose by the boiling and the fruit acids. Yet no one scarcely need be told that the housewife only brings her pears or peaches to a boil, not subjecting them to the "prolonged boiling" necessary for this

change even with an acid. He declares that the reason why some persons can eat raw apples "without stint and without after-distress," and yet "cannot eat apple pie without distressing after-effects," is because the latter contains this digested starch. It occurs to me there is more difference between ripe, raw apples and the average apple pie, with its historic crust! Another unfortunate illustration is where the statement is made that "Some persons can drink lemon juice and water, but are sickened by lemonade or lemon pie." As if lemonade were boiled; for it must be boiled if this change in the sugar is made. And lemon pie, it occurs to me, has something more in it than glucose to make it indigestible.

Dr. Bartley is no friend to the sweets, for he deals the candy makers a death blow. He relates "several cases of death" from the use of candy which contained glucose; yet everyone who knows anything about the manufacture of candy certainly knows that the very best candy in the world contains this same glucose. One principal argument advanced against the use of articles containing glucose is that the glucose may be absorbed too quickly from the stomach. The argument is advanced that the place for the normal manufacture of this product is below the stomach, where the starch is slowly digested and absorbed. If the starch be changed into glucose before it passes through the stomach then it may be too quickly absorbed, and, thereby, "may prove too great a tax upon the liver," and "the blood may be overcharged with dextrose." But the fear which the doctor might excite by this use of the word "may" fortunately has no foundation in fact.

All this question must now be regarded as settled by some recent work from the hands of Dr. J. H. Kellogg, of the Battle Creek Sanitarium. Dr. Kellogg has been at work a long time in his laboratory of hygiene, in just this line. He reports that he has made an examination of the contents of the stomach, after a test meal, in 4,875 cases to determine whether or not salivary digestion goes on in the stomach. The results were most positive. In 669 of these cases there was complete change of all the starch; while in only 87 cases, or 1.8 per cent., was there little if any change. Although contrary to the generally accepted theory, yet it is now evident that the action of saliva is continued while in the stomach, there converting the cooked, but undigested, starch into the form of sugar known as glucose. It is certain then that Dr. Bartley's position will not hold. Glucose in the stomach will not cause "too great a tax on the liver," and will not "overcharge the blood," and will not appear as sugar in the urine. Nature normally digests our starchy foods in the stomach; this is the latest verdict. If she does this we need not worry that the placing of an identical, but artificial, glucose in the stomach will cause an incurable disease. Thanks to Dr. Kellogg, we may now continue to eat our candy and enjoy our sweetened fruits without fear. And those who indulge in beer may rest assured they have only the old enemy, alcohol, to consider.

But I cannot let this pass by without adding additional proof in this line. For some years there has been a growing sentiment in Germany that the treatment of diabetes was not on correct lines. Hirschfeld has recently said that diabetic coma is favoured with a diet excluding the carbohydrates. Both he and Schmidt declare that we should guard against giving too much animal food. Schmidt allows all his diabetic patients only a small quantity of albumin, but gives them large quantities of starch and fat. He says this diet actually diminishes the amount of sugar in the urine. Grube impregnates the system with the carbohydrates. Williamson, of Manchester, says the ordinary home-made bread is far preferable to the prepared diabetic flours. The whole idea of the latest workers is that glucose is simply a normal product of digestion; without harm in health, and even of possible benefit in disease.

MORE BACTERIOLOGY.

Dr. McClintock, of the University of Michigan, points out that not even that dainty adjunct to the breakfast-table—the egg—is free from the ravages of the "ubiquitous microbe." The doctor took up the task of ascertaining whether eggs were infected with bacteria, and, if so, whether before they were laid or not. A healthy laying hen was obtained, and after repeated washings in a sublimate solution she was placed in a sterilised cage. The hen laid regularly every other day, and the eggs were obtained as soon as possible after being laid and some of them wrapped in sterilised cotton and placed in an incubator. All these eggs, it is said, became decomposed and swarmed with bacteria. Other eggs taken from the hen as soon as laid were broken, and cultures made from their contents. Some of these culture-tubes developed; others remained sterile. Some days after the hen was killed, and, with due precautions, culture-tubes were inoculated from various portions of the oviduct. Most of these tubes developed. The evidence here seems to point to the fact that the egg was inoculated during its passage down the oviduct before the shell was formed. It does not, of course, follow that all eggs contain microbes, nor does it follow that even where bacteria are present they are in any way harmful. It is a matter of common knowledge that eggs kept excluded from the air will keep almost indefinitely. It is, moreover, difficult to understand how the experimenter succeeded in completely sterilising his hen and her cage, and, if he succeeded in that temporarily, in keeping her sterile. The feathers of the bird, especially when shut up, would offer the more favourable medium

for propagating bacteria, and it is possible that hence came the microbes. But, after all is said, what we want to know is the utility of information of this kind. If Dr. McClintock had boiled his eggs, and after that found in them the germs of some specific disease, such as typhoid or diphtheria, there might be cause for trouble; or, better still, he might have boiled himself, and saved us one more example of bacteriology run mad.

THE GROCERS' COMPANY AND ADULTERATION.

THE cost of adequately enforcing the Adulteration Acts is a sore question. Here are a few points given by Mr. J. Innes Rogers to a representative of the *City Press*, which are well worth the attention of the Food Products Committee when it meets. Our contemporary says:—

"As the representative of one of the largest grocery houses in London, a house whose business extends over every part of the United Kingdom, Mr. Innes Rogers is entitled to speak in some degree in the name of the grocery trade. And the members of the grocery trade have a grievance—a grievance which a half-hour's conversation with Mr. Innes Rogers showed is a just one. They are dissatisfied with the present law relating to the adulteration of food. They contend that the supervision which is at present exercised is worse than useless, as the inspectors employed by County Councils and other bodies have only the power of entry into retail houses, so that, whilst the retail dealer is punished, the real delinquent—the wholesale trader—escapes. Adulteration, they say, can only be stopped, if stopped at all, at the fountain head, and this, it is said, could be done if the Court of the Grocers' Company would exercise the duties which their charter imposes upon them, and which for more than a century have been allowed to fall into desuetude. It is the restoration of their rights to be represented by the Grocers' Company in fact as well as in name that Mr. Innes Rogers asks for on behalf of the grocers of London, and the object of my visit was to ascertain the position of matters; the real attitude of the Grocers' Company to the members of the trade with which their name is identified. Mr. Rogers expressed himself ready to answer any questions I chose to address to him, remarking that the subject could not be too well ventilated, as it was a matter which vitally affected one of the largest and most important trades in this country.

"Let me say at the outset," he remarked, "that I am acting in no spirit of antagonism to the Grocers' Company. The suggestions which I made before the committee were of a friendly character, and they were made under the firm belief that their adoption by the company would very materially improve and strengthen their position, and at the same time benefit the grocery trade and the public alike."

"You are of opinion, I believe, that the members ought to revive their active association with the trade?"

"Certainly. The company's powers to hold land were only granted on condition that the members should fix a standard of purity in food, and prevent adulteration. For more than 100 years they have not exercised those powers. Had the court still retained their connection with the trade, and had their powers been judiciously exercised by people connected with the trade, the necessity or the Adulteration Acts would not have arisen. The Grocers' Company, as you are aware, was originally a fraternity of Pepperers. It was founded in 1345, and the objects of the fraternity were of a social and charitable character. It was incorporated by letters patent under the style of the Grocers' Company in 1373. A charter of Henry VI. in 1428 allowed the company to hold land, notwithstanding the Statute of Mortmain, and the subsequent charters gave the members control not only over the grocers of London, but over all druggists, confectioners, tobacconists, tobacco cutters, and sugar refiners, who were considered to have been branched out of and bred by grocers. The wardens had power to enter the warehouses and shops of all persons carrying on those trades within a three-mile radius of the City for the purpose of inspecting articles, with a view to preventing adulteration, and likewise assaying their weights. Nay, it was more than a power; it was a duty which was imposed upon them. And up to the time of the Great Fire, when, owing to the destruction of their property, they fell for a time into

poverty, they regularly discharged this part of their duty. Their officers—technically termed “garblers”—seized spurious material, and the Wardens and Court of Assistants were in the habit of committing to prison all persons found guilty of adulterating articles of food. As you know, no such power exists under the adulteration law of to-day: the Court of the Grocers' Company alone have the power, and might with advantage exercise it. The Apothecaries, who were formed into a separate company, still carry out their duties relating to adulteration, and exercise some supervision over the trade, as do the Goldsmiths, the Fishmongers, and, I believe, a few other guilds. But the members of the Grocers' Company, which is one of the wealthiest of the City guilds, and which represents, or rather misrepresents, one of the largest trades, and one that requires more supervision than any other, have allowed theirs to lapse, and, apparently, have no intention of reviving them. It is a trade which was never of the importance it is in the present day, and in which adulteration was never so rampant.

“Does the company, in the present day, associate itself in any way with the trade?”

“Not in the slightest degree. It has gradually ousted grocers from its court and livery, and, according to the modern use of the word, I do not think there is a single grocer on its livery, although there are a few Mincing-lane brokers on its roll. By No. 22 of the bye-laws of 1711, it is enacted that “all persons using the mystery within the limits, and desiring to take their freedom of the society, or translated by the Lord Mayor, be admitted.” This provision, the court say, “has simply become obsolete.” In 1759 and 1762 this right began to be filched away. It appears perfectly clear that any grocer who applied for the freedom within the limits was entitled to it. Apprentices were formerly all bound at the hall. Since the company ceased to exercise control over the trade there has been no such thing as a trade apprenticeship. Admission to the freedom can only be obtained by patrimony or by apprenticeship to a member of the court—not a trade apprenticeship. Formerly it was a nominal apprenticeship—a person not a grocer promised to teach, and another person not a grocer promised to learn the art and mystery of a grocer. Now, it must be an actual service to a member of the company, not one of whom, as I believe, belongs to the trade, so that grocers are entirely ousted. The election to the livery is even more difficult. This great company, therefore, which, with its income of about £40,000 a year, and powers of exercising supervision, could confer enormous benefit upon it, has entirely alienated itself from the grocery trade. Its expenditure in 1879 was returned at £31,497, of which £14,500 was expended upon various charities, the maintenance of the company's schools and the like, and £17,000 upon banquets, the maintenance of the hall and offices, and pensions for the relief of decayed members of the company. Please do not misunderstand me. I do not object to the banquets and entertainments of the company. The promotion of good fellowship has always been a marked part of the work of the City guilds, and they have a right, so long as they fulfil the duties imposed upon them, to spend their money as they think best. But I say that the Grocers' Company does not carry out its duties to the grocery trade, and that it should spend some large portion of its income in doing so.

“Do you consider the Grocers' Company a suitable body to exercise in the present day the control you suggest?”

“I think it might be made a suitable body. The court already have the powers, and if they were to admit members of the grocery trade to the guild, they would be brought into touch with the trade. They might employ properly-trained analysts for a supervision of public and private warehouses, and brokers, merchants, and dealers' sale-rooms in London, and perhaps in other parts of the country. Such supervision is not at present exercised in any way whatever; the adulteration law does not provide for it, though it is provided for by the wisdom of our ancestors in the powers of the Grocers' Company. I can mention a case in point. The firm which

I represent recently drew the attention of the City analyst to a parcel of adulterated oatmeal lying in a public warehouse within the City bounds, and he stated that he had no power to deal with it as it was not on sale. As I read the Grocers' charter the company could have seized it had the court exercised their powers. Under the existing law we might have sold it to a retail grocer, who could have been prosecuted and punished for exposing it for sale, although perfectly innocent. Thus, you see, the law begins at the wrong end of the stick. The Grocers' Company, by exercising its powers, could take care that the person punished is the manufacturer or wholesale dealer, and stop the fraud there. There were a good many matters verging on adulteration over which, in former times, the court exercised control, and over which they might well exercise control in the present day. They included inferior wares, the mixture of chicory with coffee, of arrowroot and other farinaceous matters with cocoa, and flour with mustard; and they had the power of fixing standards of purity. Then, too, instead of voting large sums for endowing scientific research, they ought, I think, to provide the Government with the means—say £10,000 a year—for the establishment and maintenance of a proper analytical department, where researches into the constitution of food could be carried out by the highest available scientific talent. At present there is no trade or special qualification required for an analyst, and it ought to be a very skilled profession. The court of the Grocers' Company have the means of making it so. Then, again, I do not think it is unreasonable to expect them to assist the trade charities. At present there is no general fund for the relief of decayed grocers. And it was never so much wanted as in the present day, as owing to competition and other matters there is an immense amount of suffering. We have one Society—the London Grocers' Benevolent Institution—for the relief of decayed grocers. It is an admirable institution, and has 88 pensioners on its roll. There is a deficit nearly every year, and during the past six years the committee have been obliged to sell out £4,900 stock. And yet, during the past 56 years the Grocers' Company, which was founded with the object of protecting, and exercising supervision over, grocers, has only contributed £650 to that institution—an average of £12 a year. It is needless to say that with sufficient means the usefulness of the institution could be largely increased. The institution I speak of only extends to London. There is no general foundation designed to relieve distress among any grocers in the kingdom generally, among whom, owing to the modern stress of competition, there are too often very many cases of grievous distress.”

“Then you consider, inasmuch as the Grocers' Company does not carry out the duties to which you have referred, that the court have forfeited their power to hold land?”

“I believe that if the matter were tested in the Courts that would be found to be so. They are not carrying out the duties imposed upon them by their charters, and are, therefore, not entitled to the privileges they confer. If the Crown were to call upon them to produce their charters, and it were shown that they were not complying with the conditions under which they were granted, their leases would at once, I imagine, revert to the Crown. Therefore, if there is any difficulty in getting the money for a central analytical department—which more than anything else is needed—it is a question whether the Government should not take the funds of a guild which neglects to perform duties which are imposed upon it by the terms of their charter.”

“Having thanked Mr. J. Innes Rogers for his courtesy, I then withdrew to ponder over the possibilities of the suggested changes: and to picture a ‘restoration feast’ of a very different kind from that which a few hours afterwards was to be held, a feast—in other words, a festival—to celebrate the restoration of powers which have for so long lain dormant, and the exercise of which would materially benefit a very large and important section of the community.”

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Food and Sanitation.

SATURDAY, AUGUST 10TH, 1895.

ANOTHER BELL AND BANNISTER COW.

At Aston Police Court, on August 2, Henry Brown, farmer, was summoned for selling half a pint of milk

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deficient of 50 per cent. of its natural fat. Mrs. Brown said they only kept one cow, and she could only attribute the poorness of the milk to shortness of keep. Defendant was fined 40s. and costs. It was suggested that the cow should be loaned to Mr. Bannister, to illustrate his lecture on Somerset House curiosities at the British Institute of Public Health Congress at Hull, but as there was a doubt if it could survive the journey it is probable that visitors to the Congress will be deprived of that treat.

A "HIGHLY RECOMMENDED" WHISKY.

THE following is the composition, according to the *Pharmaceutical Era*, of a highly-recommended whisky:—

St. John's bread	...	...	5 grams.
Bruised liquorice root	...	...	5 gram .
Bruised orris root	...	...	1 gram.
Sodium chloride	...	...	2 grams.
Spirit nitrous ether	...	...	2 grams.
Spirit juniper	...	...	10 grams.
Alcohol	...	...	400 grams.
Hot water	...	...	600 grams.
Acetic ether	...	...	3 drops.

Mix the ingredients and allow them to remain in a well-covered vessel for twenty-four hours, then filter.

ADULTERATION PROSECUTIONS.

MILK.

At Manchester, on July 31, James Townsend, Elliott-street, Bradford, was fined 10s. 6d. and costs, and Catherine Marshall, Derby-street, Ardwick, 20s. and costs for selling to an inspector milk containing, in the one case, 5 per cent., and in the other, 10 per cent. of added water. Mr. Rock, superintendent of the Sanitary Department, Town Hall, prosecuted

At Cardiff, before the Stipendiary at the Cardiff Police Court, on July 30, Elizabeth Mitchell, of 156, Bute-road, Cardiff, was sum-

moned on information laid by Philip David, a local inspector of nuisances, for selling milk from which 25 per cent. of its natural butter had been abstracted. Mr. Andrew, deputy town clerk, prosecuted. The defendant was fined 40s. and costs.

At Paisley, on August 3, Christina Hamilton, Alton Farm, was fined in 20s., with 36s. 6d. of expenses, for having, on 28th June, sold a quantity of milk to an assistant sanitary inspector, which, on being analysed, was found to be deficient in natural fat to the extent of 20 per cent.

At Coventry, on August 3, before Dr. McVeagh and Mr. F. W. Franklin, Frederick Ferneyhough, milkseller, Peel-street, Red-lane, was summoned on the information of William Henry Clarke, Inspector of Nuisances, for selling adulterated milk. The Town Clerk (Mr. L. Beard) appeared for the prosecution, and Mr. R. A. Rotherham for the defendant.—Mr. Clarke stated that on the 11th July he saw the defendant delivering milk in Spon-street, and he purchased a pennyworth. A sample was taken to Dr. Bostock Hill, public analyst, who certified that it was adulterated with 20 per cent. of added water. The defendant told him that he purchased it from Mr. Joseph Norman, Durham House, Keresley, and it was sold in the state in which it was received. Mr. Clarke afterwards took a sample of Mr. Norman's milk—Mr. Norman being also charged with the offence—and on its being analysed it was certified to be adulterated by the abstraction of 36 per cent. of its natural fat, and the addition of 11 per cent. of water.—Evidence was given for Norman to prove that the milk was put into the churns in exactly the same state in which it came from the cow, and that nothing was abstracted or added.—The magistrates said they considered the charges proved, as they could not get over the analyst's certificate.—Norman (for whom Mr. Norman, Birmingham, appeared) was fined £5 and 35s. costs, and Ferneyhough 20s. and costs, 24s.

At Margate, John Henry and Benjamin Abbott, of King-street, were summoned on August 2 for selling milk which was adulterated. Penderd Pegden, of Church-street, and J. Kemp, Park Court Dairy, Birchington, were summoned for the like offence.—Messrs. Abbott Bros.' case was the first gone into.—Mr. Walter Hills appeared for the Sanitary Committee, and Mr. Ricketts defended.—Mr. Hills stated that the milk purchased by the Sanitary Inspector (Mr. Edward Elliott) was found to contain 20 per cent. of added water.—The Inspector proved the purchase of the milk of Ernest Haycock, one of the defendant's employees, from one of Messrs. Abbott's churns, to dividing it into three parts, and to taking one part to the public analyst, and it was found that 80 per cent. was pure and that there were 20 per cent. of added water. At the request of Messrs. Abbott, he took samples of milk from a can on the following day at the South-Eastern Station, which, on being analysed, was found to be absolutely pure.—Sidney Harvey, Watling street, Canterbury, deposed that on July 11 he received a sample of milk marked "No. 3," and found 80 parts of real milk and 20 parts of added water.—In cross-examination, he said milk varied in quality. He had read a case in which an inspector saw two cows milked, and took samples, and on its being analysed by two experts it was found to contain 15 per cent. of water.—Mr. Ricketts addressed the court at some length, pointing out that the quality of milk varied according to locality and other circumstances, and that the standards of analysts should also vary. He also stated that the milk in question came from Swindon, Wilts, that it was delivered to the defendants from Waterloo station, and sent down to Margate from New Cross, and that Messrs. Abbott's employees had not in any way tampered with it, but had delivered it in the same state as that in which it was received. He referred to a case in which a porter at Finsbury Park Station had been detected in the act of stealing milk and adding water. He suggested that such may have been the case in reference to this milk, but, as it had passed through several hands at the station no evidence could be given by the Company as to the men's names. He also stated that Messrs. Abbott exercised the fullest possible care to supply pure milk only. He called John Lowe, a canman in the defendant's employ, who said he received the milk on the evening of the 10th July. He delivered it to the manager, who locked it in the dairy. He did not tamper with it in any way—Ernest Haycock, said he sold the milk to the inspector. He received it from the manager and sold it in the same state.—Arthur William Haycock, manager to defendants at Margate, deposed that he delivered the milk to the previous witness, exactly as he received it. No water whatever was added to it.—John Henry Abbott, one of the defendants, said they bought all their milk on written warranty as to purity. He had made inquiry at Waterloo station as to the porters who had charge of the milk after its arrival there, but could not ascertain their names. He had given instructions to their branch managers to deliver milk as it was received. The churns could not be locked during transit on the railway, and anyone could open them.—Mr. Hills said he did not suggest, for a moment, that the firm allowed their milk to be tampered with.—The witness said he paid about £40 a year to have their milk analysed. He had had milk analysed from the same firm as this milk, and it had been found to be pure.—The Mayor said the Bench felt it their duty to convict, and there would be a fine of 20s. and costs. At the same time, the Bench desired him to say that they thought there was no reflection on Messrs. Abbott, who, they thought, had done all they could to prevent adulteration taking place.—In Mr. Pegden's case, Mr. Hills stated that there was 28 per cent. of added water. Evidence having been given, Mr. C. F. Gibson stated that the defendant had run short of milk and

had to buy a supply, which he delivered in the state in which [he] received it. Evidence was added to this effect; and the defendant was fined £1 and 20s. 6d. costs.—In Mr. Kemp's case, the added water amounted to 13 per cent.; and the fine and costs inflicted were £1 9s. 6d.

CO-OPERATIVE MILK.

At Stonehouse, on Aug. 2, the Plymouth Co-operative Society was summoned for selling adulterated milk.—Superintendent Roberts, of the Devon Constabulary at Stonehouse, said that on June 27, about 10 20 a m, he was in High-street. He saw No. 3 milk cart belonging to the Co-operative Society. He asked the man who had charge of the cart for a pennyworth of raw milk. He received the milk, divided it into three equal parts, and informed the man who he was and what he had made the purchase for. He sealed the milk in three bottles, kept one himself, sent one to the county analyst at Exeter, and returned the other to the man. Since then the county analyst had written him stating that there was at least 10 per cent. of water adulterating the milk.—Mr. Bickle (Bond, Pearce, and Bickle), who defended, contended that the percentage was quite an ordinary one. He quoted an investigation made by the Somerset House authorities to form a standard, and as the result of which it was found that an average of 273 animals gave 10 per cent.—The Bench said that the case against the defendants was not proved, but it was their opinion that Mr. Roberts had done quite right in bringing the case forward.—The case was dismissed.

BUT THE EIGHT PER CENT OF WATER COW WAS NOT SHOWN.

"PERHAPS the most valuable part of the proceedings at the opening of the Eastern Counties Dairy Institute in Gyppeswick Park on Tuesday" says the *Ipswich Journal*, "was the lecture by Professor Lloyd, the greatest English authority on Bacteria in the Dairy. The majority of people do not realize when they are praising the "flavour" of their butter that it is due to the development of living microscopic atoms in the milk after it has left the cow. Professor Lloyd, however, showed that such was the case. He demonstrated that it was very important that butter should be made according to the most cleanly and scientific methods, in order that the introduction of unhealthy organisms should be avoided. He also opened up a vista of the future which the Americans are or may be making for the manufacture of their butter, by the cultivation of flavoursome microbes. There is a microbe called No. 41, which would be described as a very delicate morsel, if that were not far too large a word for it, and in its multiplied forms it gives a most agreeable relish to the butter. It has not yet been naturalized in England, but speaking in all seriousness, Professor Lloyd urged that when people in other countries were pursuing investigations so keenly, we in England should not be content with rules of thumb and traditional learning, however good it might have seemed. And therein—without pleading their cause in any way—he made out a strong case for the Eastern Counties Institute."

DR. KENWOOD ON MILK EPIDEMICS.

DR. H. KENWOOD, medical officer of health for Stoke Newington and Finchley, says that "it is high time, with these epidemics constantly cropping up, that something more should be done to prevent their recurrence." He points out that, practically, present action is restricted to preventing the further spread of the outbreak after it has already worked a varying amount of harm. The necessity for further steps is a growing one, because—

1. Cowkeepers are becoming less and less generally milk retailers, and are not, therefore, affected to anything like the same extent as the latter by the consequences of a milk epidemic. Moreover, cowkeepers do not (and apparently would not) recognise the necessity of excluding the milk of cows suffering from transitory, often slight and generally obscure, ailments that might furnish an infective quality of milk.

2. The establishment of large companies, with extensive and irregular areas of distribution, is gradually displacing the small man with a small and circumscribed area to supply, and the result is a much greater difficulty in tracing the origin of a milk epidemic.

Dr. Kenwood suggests (*inter alia*) the careful examination of all milk cows at short intervals, preferably once a week, the prompt isolation of those animals likely to furnish infective milk, and the adoption of means that would deter the cowkeeper from mixing the milk of such animals with other milk. Further, he suggests the appointment of special inspectors of cows and cowsheds.

BUTTER.

At Salford, on August 2, before Mr. Alderman W. Robinson and Mr. Alderman Jenkins, James Nathaniel Pearson, provision dealer, 126, Trafford-road, Salford, was fined 20s. and costs for having exposed for sale margarine which was not labelled as such. Inspector Marriott, of the Food and Drugs Department of the Corporation, proved the case, which was conducted by Mr. Holmes, the Deputy Town-clerk.

COFFEE.

At Cardiff, on July 31, Matilda Randall, Dorset-street, was charged with selling coffee, adulterated with 90 per cent. of chicory. Mr. Andrews, assistant town clerk, prosecuted, and Mr. A. Rees, solicitor, appeared for the defendant.—Philip David, an inspector under the Food and Drugs Act, stated that on Saturday morning, July 16, he visited the shop of the defendant. Mrs. Randall was in the shop, and he asked her for half a pound of coffee. She handed him a tin wrapped in a piece of paper, for which he paid 5d.—The Stipendiary: Is that the market price of coffee?—Witness: No, the price of coffee is from 1s. 8d. to 2s. per pound.—Mr. Andrews: What is the price of chicory?—Witness: Sixpence per pound.—The Stipendiary: But for this mixture of chicory and coffee you say you paid fivepence for the half-pound?—Witness: Yes.—Examination continued: Witness said he told the defendant he had purchased the coffee for the purpose of having it analysed, and if she liked to have a share of it she could.—Defendant replied, "I had better have part of it," adding that she thought it was analysed before she bought it. Witness divided the contents of the tin into three parts, one of which he gave to the defendant, and another he took to the public analyst.—Mr. Andrews here read the certificate of the analyst, who said the coffee was adulterated with 90 per cent. of chicory, and added, "No change had taken place in the constitution of the article which would interfere with the analysis." That, Mr. Andrews maintained, was evidence of a fraudulent mixture.—The Stipendiary said he noticed that on the tin there was this label:—"Guaranteed to be a mixture of finest Bruges chicory and choicest coffee."—Mr. Andrews (to witness): Was your attention called to that label?—Witness: Not at all.—The Stipendiary: Was the article wrapped up in this paper when taken from the shelf, or did the defendant put the paper round it?—Witness: She wrapped the paper round it before she gave it to me.—The Stipendiary: Then the tin was standing on the shelf not wrapped up?—Witness: I could not see. It was taken from a shelf behind the counter, and it was behind other articles. The Stipendiary: When the defendant took the tin in her hands was the label visible?—Witness: I did not see it. I was not aware of the label until I opened the package.—The Stipendiary here consulted with his colleague on the bench, and then turning to the defendant's solicitor, said, "The summons is dismissed."—Mr. Rees said he thought it only right he should mention that the defendant declared she told the inspector that it was a mixture and also pointed out to him the label on the tin.

SAGO.

At Romsey, James Philpott, grocer, of Winchester-road, was summoned for selling adulterated sago, containing 50 per cent. of starch, which was not sago starch, on the 4th of June.—Defendant pleaded not guilty.—Agnes Healey, residing at Winchester, proved purchasing the sago by instructions received from Sergeant Bowles, inspector under the Food and Drugs Act.—Sergeant Bowles produced the certificate of the analyst showing the sago to contain the above-mentioned.—Defendant, in excuse, said his wife, who was unaccustomed to the shop, sold seed tapioca for sago.—The Mayor remarked that the public must be protected against this sort of thing, but as this was defendant's first offence they would only fine him 2s. 6d. and costs.

At Andover, on July 29th, William Edward Lee, manager of the Andover branch of the International Tea Company, was charged with selling sago adulterated with 50 per cent. of starch other than sago starch, contrary to Section 6 of the Food and Drugs Act, 1875. Mr. Frederick W. Beck, of the firm of Messrs. Neve and Beck, of London and Luton, defended. Agnes Healey, wife of a pensioner living at Winchester, deposed to being served at the defendant's shop, on June 19, with a pound of "small sago," for which she paid 2d. She handed it over to Sergeant Bowles on the doorstep. Cross-examined by Mr. Beck, witness said she did not look at the article when she purchased it. She knew there were two sorts of sago, small and ordinary. Of the two samples shown her now by Mr. Beck, she should prefer the white to the brown, although she did not know what difference there was in them. Detective-sergeant Bowles, of Bournemouth, deposed to receiving the sago from the last witness, and in the presence of the defendant dividing it into three portions, one of which defendant kept, the other was sent to the county analyst, and the third he (witness) kept himself. On June 29 he received from the analyst the certificate upon which the charge was based. Cross-examined by Mr. Beck: He did not know what the white sample produced was, but it was identical with a sample purchased at Romsey for sago. He had recently heard of pearl-seed tapioca being sold for sago. He did not know their respective commercial values. Mr. Beck then addressed the bench for the defence, and said that when the case first came about, inquiries were instituted by the firm who were the owners of the premises, and a curious state of things was found to have existed for some time past, not only at this shop at Andover, but at others; when "small sago" was asked for, small pearl-seed tapioca was sold. This had been traced by means of the order forms which the manager sent to the firm, and without the least knowledge that he would receive pearl-seed tapioca, asked to be supplied with small sago. He also produced the invoices in which the article was described as small sago. He had present the man from London who put the order up, and who would say that he sent pearl-seed tapioca, because in the London warehouse it was the custom to supply this for small sago. The reason was apparent from the fact that the two articles were equal in nutritive value, identical in taste, and anyone looking at the two samples would prefer the white (or tapioca) to the brown (or sago). He then contended that the substitution had not been made to deceive

the public; so far from that being the case, the firm was making a serious loss on the sale, for the reason that small sago cost—according to three contract notes produced—7s. 6d., 8s. 3d., and 8s. 9d. per cwt., while pearl-seed tapioca cost 10s. 9d., 11s. 3d., and 11s. 9d. per cwt.; and, therefore, instead of the firm depriving the purchaser of any value they were, as a matter of fact, depriving themselves. Having proved these facts in evidence, he should ask for a dismissal. He would, at the same time, admit that sago was asked for and not supplied, but they must remember that the beginning of the section under which the charge was laid was this: "No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded." He admitted that that they had not sold sago, but they contended that they sold an article equal in nutritive value and greater in commercial value, and the lady herself, who had just given evidence, said she would prefer to have the white (or tapioca sample) to the brown (or sago sample). There was, he continued, one case upon the subject, but there was a doubt if the Act applied to such transactions as they were concerned with that day. It was framed, he said, to strike at admixtures of inferior with superior articles, and he doubted whether it touched cases such as the present, where a different article was supplied from that which was demanded. The one case he referred to was where "saffron" had been asked for and "savin" supplied, and there it was admitted that the sale was to the prejudice of the purchaser; for while saffron was a dye, "savin" was an inferior but poisonous drug. He argued, in the present case, that the purchaser having sustained no loss by the transaction, he was entitled to a dismissal. The firm for which he appeared was of the highest standing, and had two hundred branches throughout the country, and were, therefore, not the sort of people to think of defrauding the public. He mentioned that within the last two years they had had 156 samples taken from their shops for analysis, but in only two of these cases did prosecutions ensue. In one there was a conviction, which was overruled on appeal, and in the other the summons was dismissed. In the present case, so far from defrauding the public, the firm were losers to the extent of 2s. per cwt. in selling the one article for the other. He then called William Edward Lee, the defendant, who said he received the article sold from Messrs. Kearley & Tonge, the proprietors of the International Tea Company, and there was no doubt that what was sold to the first witness was described in the order forms and invoices as "small sago." He had been in the habit of calling the white sample produced (pearl-seed tapioca) small sago. If he had been asked for tapioca he should have supplied the flake variety. He did not know the white sample was tapioca until now. Cross-examined by Sergeant Bowles: He considered there was no deception in supplying one article for the other when neither himself nor the purchaser knew the difference. He considered the brown sample was inferior in quality, and he was surprised to hear that the sergeant had bought it at twice the price of the white variety at Bournemouth. William Frederick Spencer, warehouseman in the employ of Messrs. Kearley and Tonge, at Dover-street, Whitechapel, said he executed the orders sent by the defendant. Until the last fortnight he had been in the habit of sending the white sample produced—and which he now learned was pearl-seed tapioca—for small sago. That had been the system in the business since he had been there—three years and a half. Herbert Whitehead, junior salesman, in the firm's employ at Mitre-square, produced contract notes for small sago, which showed the price to be between March 25 and July 29, 7s. 6d., 8s. 3d. and 8s. 9d. per cwt. Contract notes for pearl-seed tapioca showed the prices for that commodity during the same period to range from 10s. 9d., 11s. 3d., and 11s. 9d. per cwt. In addition to supplying branch shops they sold to ordinary retailers, and he knew of cases in which the customers preferred the pearl-seed variety to the other. Mr. Arthur Angell, analyst for the county of Southampton, called by the prosecution, but who did not arrive in time to give evidence before, produced his certificate on which the charge was based. Cross-examined by Mr. Beck, he said the sample analysed was similar to the white sample now produced, and it contained 50 per cent. of starch other than sago starch. He arrived at the conclusion not by a chemical test but by a purely microscopical test. Tapioca was equal in food value to sago, and the purchaser would not be prejudiced by having tapioca instead of sago. He could not certify that the sample sent him was sago, and, from his official position, he was bound to regard it as an adulteration, but it was more a case of substitution than adulteration. By Sergeant Bowles: If he asked for sago and was supplied with tapioca he would think that an improper proceeding. The Chairman asked if there was any sago in the sample he analysed, and he said he was not quite satisfied on the point. The process of granulation was done while the seed was warm, and this made it difficult to define the exact shape of either sago or tapioca. He would not give his word whether there was any sago in the sample or not. The Chairman, after the bench had retired, said they had arrived at the conclusion that nothing had been done to the prejudice of the purchaser, and therefore they dismissed the case. As the case had been adjourned for a fortnight, defendant's solicitor paid the costs of the adjournment.

SPIRITS.

At Mansfield Police-court, on August 1, Henry Holland, of Clipstone, was charged by Inspector Storey with having on the 3rd of July a quantity of gin in his possession which was not proof.—The Inspector said on the day in question he purchased a small quantity of gin from the defendant's house, and he found it contained three parts more water than the Act allowed. He purchased some whisky, which was proof.—Defendant was represented by his sister, who said

if there was anything wrong it was done in ignorance, and the Bench, taking into consideration the orderly way in which the house had been conducted, imposed a fine of £2 2s.

MAGISTRATES AND THE EXCESS WATER GAME.

At Doncaster, on Aug. 3, William Hall, innkeeper, Arksey, was charged with having sold adulterated rum and Irish and Scotch whisky.—Mr. O. W. Hall, solicitor, defended.—The case was proved by Mr. Joseph Wilson, of Rotherham, inspector under the Food and Drugs Act. He stated that he sent the samples to the analyst at Sheffield, and received a statement in reply that each was slightly diluted. Twenty-five degrees under proof was allowed, and there were four parts over the standard fixed.—Mr. C. W. Hall: Against the customer, and will help to keep him sober. (Laughter.)—The Chairman: I know; you must settle that with the County Council. (Laughter.)—Ordered to pay the costs.

APPEALS.

THE VALLEYFIELD CHEESE.

In the Queen's Bench, on August 5th, before Justices Grantham and Lawrance, Mr. Bigham, Q.C., and Mr. A. V. Lawrance appeared in support of an appeal against the conviction by the Leeds Stipendiary of a provision merchant named Collett, carrying on business in that city, for having sold as cheese an article named "Valleyfield Finest Oleine Cheese." Mr. Cyril Dodd, Q.C., with Sir George Morrison, was for the respondent, Mr. Walker, an inspector appointed under the Food and Drugs Act.

The circumstances of the case were simple, and the legal point a short one. The inspector sent a man named Gill to buy 3lb. of the "Oleine," at 6d per lb. The point raised by Mr. Bigham was that Mr. Walker was the purchaser, that he knew "oleine" was not cheese, and that he was not, therefore, subjected to the prejudice which the Act required to be found before a conviction could be arrived at.

Mr. Dodd, on the other side, cited a section of the amended Food and Drugs Act, which provided that this plea as to prejudice could not be raised against an inspector or analyst. Were the law otherwise it could be said that because an inspector had caused one sample to be analysed he could never do any more, because he knew all about it. That would be to reduce the law to an absurdity.

Mr. Justice Grantham, without troubling Mr. Dodd further, said the Court was of opinion that the conviction ought to be upheld. The words "Valleyfield Cheese" were very catching and ingenious, "Valleyfield" being perhaps the one word more calculated to deceive ordinary persons than any other that could have been hit upon. It was a very clever word. It appeared that something like three-fourths of this cheese consisted of animal fat, and that oleine was used in the manufacture of woollen materials. He thought the magistrate's decision was right.

Mr. Justice Lawrance concurring, the conviction was upheld, and the appeal dismissed with costs.

BUCKLER v. WILSON.

In the Queen's Bench Division on August 1 (before the Lord Chief Justice, Baron Pollock, and Mr. Justice Wright), the case of Buckler v. Wilson was heard. This case raised an important question under the Sale of Food and Drugs Act, 1875 and 1879, and the Margarine Act, 1887. It was stated by the justices of the county of Lincoln, and the following were the facts. The appellant, Buckler, a grocer, of Louth, was convicted and fined £5 and £1 15s 6d. costs on the 23rd of January last, for having sold some margarine by retail which had not been marked in the manner prescribed by the Margarine Act. Buckler had entered into a contract with the guardians of the Louth Union to supply them with fresh English butter, and on Saturday, the 8th of December, under this contract, he delivered 39lbs. On the following Monday there was a meeting of the Visiting House Committee of the guardians, and some of the butter was examined. A pound of it was taken and divided into three parts, one of which was taken the same day by the master of the workhouse to appellant's shop. Appellant was out, but the master left a written memorandum to the effect that the House Committee of the Louth Union had examined the butter, and a pound of it was cut into three parts; one would be sent to the analyst, one kept by the guardians, while the third he left.—The analyst to whom the sample was sent certified that it was margarine, and the proceedings were accordingly instituted against the appellant by the clerk to the Guardians. On behalf of the appellant it was submitted that the summons had not been legally issued, as the Margarine Act required the same steps to be taken as were required under the Food and Drugs Acts of 1875 and 1879, and those steps had not been taken, as the alleged offence was committed on the 8th of December, 1894, and the summons was not served till January, 1895. It was said that there should have been a notification of the proposed analysis forthwith, and an offer to divide the butter in the presence of the defendant, and that the portions should, when divided, have been marked and sealed. The justices deciding against him, the present appeal was instituted.—Mr. Bonsey appeared for the appellant, and Mr. Stanger, Q.C., for the respondent.—The Lord Chief Justice, who had observed

in the course of the hearing that if the appellant's contention was accurate there could be no prosecution for adulteration unless a purchase was made for the purpose of detection, said that in view of the importance of the case, and of the many authorities cited, the Court would take time to consider their decision.—Judgment accordingly reserved.

THE DANGERS OF TINNED SALMON.

A SAD case of poisoning through eating tinned salmon occurred on Sunday last, at High Utley. It appears that on the previous day Mrs. Smith, the wife of a mechanic named William Smith, bought from a shop in the town, a tin of salmon, supposed to be of a somewhat superior brand. The meat was not touched until breakfast on the following day, and Mrs. Smith and her son, George (17), a youth employed in the Co-operative Stores in Worth Village, both took some of the salmon. The mother, who ate the larger quantity, suffered some slight internal trouble later in the day, but she obtained relief and became well again, but the son had to be brought home on account of a severe attack of illness during the evening. He had gone out with some friends for a stroll to Kildwick, when he suddenly complained of feeling unwell, and had to be assisted home as quickly as possible. The youth retired to bed, and on Monday his condition became very grave. He had great difficulty in breathing, on account of inflammation at the stomach and a swelling in the throat, and it was evident that he was labouring under considerable agony. Consciousness was lost for long intervals. In the evening Dr. Baxter Tyrie, assistant to Dr. Ling, was summoned, and after making an examination, and hearing the history of the case, he unhesitatingly pronounced the unfortunate young man to be suffering from poisoning, caused by eating salmon fouled by contact with the tin. On Tuesday the patient was in a very dangerous condition, but on Wednesday some slight improvement was manifest, though yesterday his condition was not of a very encouraging character. Sensibility only returned at rare intervals, and the patient was obviously undergoing great pain, piteous to look upon. The mother states that the salmon tasted exceedingly good, and that they enjoyed a hearty meal. She did not detect the slightest unwholesomeness either in flavour or colour. The whole of the meat was consumed, and the can was cast away, so that examination by an expert is out of the question.

THE SOMERSET HOUSE LOW STANDARD.

At Cork, on August 3, the magistrates delivered their decision in the case in which James M'Carthy, a farmer, living near Queens-town Junction, was summoned for selling milk alleged to be below the standard quality. The defendant disputed the analysis of the City Analyst with the result that a sample of milk taken from a number of cows was sent to Somerset House. The analysis of this sample stated that the non-fatty solids were normal in amount, and the percentage of fat was low for a mixed dairy sample of milk. The magistrates dismissed the case with costs.

ADULTERATING MILK IN CORNWALL.

THE COUNTY ANALYST AND MAGISTRATES' DECISIONS.

THE Cornwall County Council have had placed before them the report of the County Analyst (Mr. Benedict Kitto), in which it is stated that "during the quarter ended on the 24th ult. your inspectors, under the Sale of Food and Drugs Act, have sent me 61 samples for analysis, being three of cheese, three of bread, six of butter, thirteen of milk, two of tea, one of coffee, three of sugar, five of pepper, three of vinegar, one of mustard, one of German yeast, two of saffron, one of ginger, one of cornflour, three of lard, one of sweets, six of whisky, three of brandy, two of gin, and one of rum.

"As usual, the highest number of samples of any one article was that of milk. This most extensively used food, being perfectly miscible with water, a considerable quantity of the latter can be added without detection, except by analysis; and, notwithstanding the check afforded by the operation of the Food and Drugs Act, the temptation of greater gain by thus increasing the measure is still too much for some milk sellers. Since writing my last quarterly report, I have received from the Local Government Board an abstract of the annual report of that body for 1893-4, just issued. On Page 3 of the abstract I find it stated that 'Milk, as usual, formed the chief subject of analysis' all over the kingdom, 'and out of the 15,543 samples analysed no less than 2,310, or 14.9 per cent., were reported against.' Now, taking Cornwall for the year 1893, the number of milk samples examined by your analyst was 18, and of these four, or over 22 per cent., were adulterated; while in 1894, of the 26 samples submitted to me, seven, or nearly 27 per cent., contained more or less added water. Of the thirteen samples analysed during the past quarter, two were found by me to be 'adulterated.' Upon the vendors being summoned before the magistrates, the cases were dismissed upon the ground, as I understand, that the weights of the samples were not given in the analyst's certificates, and the words 'which then weighed' in the certificate forms were crossed out. Now, as the schedule appended to the Act distinctly states 'when the article cannot be conveniently weighed, this passage may be erased, or the blank may be left unfilled,' I am at a loss to understand the decision, and am greatly surprised to find that, although the

magistrates offered to 'state a case,' the prosecuting authority do not intend to take the matter into a higher Court, considering the great importance of a pure supply of milk, especially to invalids and children. Even the large proportion of adulterated samples mentioned is, probably, below the mark, for, although in several other cases, I have not considered there was absolute proof of watering down, yet I have had to report them as being very poor in quality. I may also state that I have not reported the occasional addition of preservatives as adulteration, seeing they have been in small doses, and there is no clear definition as to what quantities should be regarded as adulteration."

SOMERSET HOUSE MILK AT CARDIFF.

"No one believes," says the *South Wales Echo*, "in the absolute purity or richness of Cardiff milk. The milk supply of every large town is not beyond the taint of suspicion. I should like to know what the Cardiff Inspector under the Food and Drugs Act thinks of the following conversation between two milk vendors:—

"Time, 7 a.m. District, Roath. Two milk sellers the only persons visible in the street.

"'Aye! What proportions do you use?' No answer.

"'I'm using two to eight. Is that right?'

"'Yes, yes! you'll be all right with two to eight.'

"This is language easily understood of the people, and it cannot be bawled out from one milk cart to another half the length of the street apart without falling upon the ear of an unwilling observer. Does the 'proportion' two to eight mean that that is the variation in the quality of milk given by different animals, within which 'proportion' no magistrate will or can safely convict? It is evidently an article of faith with some men engaged in the Cardiff milk trade. Let us hope that the proportion of 'two' is originally purer than the bulk of ten after the mixture has been effected, and for which householders are charged at the rate of twopence per pint."

REMEMBERING MITCHELSTOWN.

At Mitchelstown Petty Sessions, before Messrs. Joseph Kilbride, B.L., R.M., James O'Geran, and E. R. C. Barry.

Sergeant Martin O'Connor, Inspector at Mitchelstown under the Food and Drugs Act, summoned Thomas Kent for having sold to him a quantity of new milk which was not of the nature, substance or quality demanded. Mr. Skinner appeared for the defendant.

Sergeant O'Connor deposed that on June 19th he visited Mitchelstown Creamery and purchased a quantity of milk from the defendant which was subsequently analysed by Mr. D. J. O'Mahony, Public Analyst for the County Cork, whose report stated that the milk was adulterated with 48 per cent. of water when compared with the lowest quality milk.

Mr. Skinner said that it was evident that there was an extraordinary error in the report of the analyst. However, his client would not take advantage of it. They were very anxious that an independent analysis should be made at Somerset House, London, at the expense of his client, and he would accordingly apply that the case be adjourned pending the analysis.

The application was granted.

Patrick Maunsell was summoned by Sergeant O'Connor for selling him a quantity of milk at Mitchelstown Creamery, which had been adulterated with water to the extent of at least 18 per cent., when compared with the lowest quality milk.

The report of the public analyst stated that the sample of milk in question contained 90 per cent. of water, 276 per cent. of fat, and 7.16 per cent. of other solids.

The defendant was fined £1 and 13s. costs.

Sergeant O'Connor summoned Daniel Lyons for selling a quantity of milk which was certified to be adulterated with 7 per cent. of water.

Mr. Skinner, who appeared for the defendant, denied the alleged adulteration, and said that the milk had remained with the defendant over-night, and a portion of the cream adhered to the sides of the vessel, which the defendant washed out with about a noggin of water. The defendant would swear that his churn of milk contained not more than a noggin of added water.

The case was adjourned to consult the analyst.

ALL IN THE WAY OF TRADE.

At Worship-street, on August 3, Maurice Simons, of Bull-court, Spitalfields, was summoned under the Public Health Act for having in his possession, and selling the same, a large quantity of onions which were unsound and unfit for food of man. He was also summoned for exposing the same for sale.—A man named Feldman, bought, it seemed, of the defendant, 50 sacks of onions for £4 10s., and afterwards took eleven sacks to Sanitary Inspector Harvey, Whitechapel parish, and showed him how rotten they were, and they were condemned and burnt. The Sanitary Inspector afterwards went to a shed in the occupation of the defendant and found about a ton and a half of onions in a rotten state, which were also condemned. These latter, it was said, the defendant had for sale, but it was proved that the shed was locked, and so there was no "exposure." The summons on that point was dismissed.—On the question of the sale to Feldman, the defendant went into the witness-box and gave evidence that he bought 200 bags of onions, that he sold some to Feldman at a low price, and told him ten of the bags would want scurting, and that they were sold on that understanding. It was all

in the way of trade to sell fruit, vegetables, &c., as packed, with allowance for damaged or "unsorted" parcels.—Mr. Bushby thought that the sooner the practice was discontinued the better, and fined the defendant £5 and costs.

NOTTS COUNTY COUNCIL AND THE FOOD AND DRUGS ACTS.

THE report of the Food and Drugs, Weights and Measures, and the Explosives Act Committee stated that the committee had received two applications for store licenses, at Skegby and Kirkby, and had granted the necessary licenses. The report of the chief inspector of weights and measures stated that during the past quarter the inspectors had stamped 708 weighing instruments, 5,429 weights, and 692 measures, and had adjusted 1,595 weights and measures. They had received £60 2s. 3½d. for stamping, and £14 17s. 9d. for adjusting, making a total of £75 0s. 0½d., as against £83 5s. 6½d. during the corresponding quarter last year. In order to afford additional accommodation to persons attending at Nottingham on market days, the committee had increased the number of stamping days there, and had also appointed Mr. Ernest Crabtree as an additional inspector. The committee recommended the Council to confirm the appointment. The county analyst reported that during the past quarter he had analysed 43 samples under the Food and Drugs Act, namely—Butter 22 samples, spirits 13, milk 7, and coffee 1. The whole of the samples of butter, milk and coffee were genuine. Of the spirits 7 were watered, and the analyst pointed out that, although a liberal quantity of water was allowed by the Act to be added, spirits continued to be the most adulterated article submitted to him, and that the numerous fines imposed for the offence of watering spirits, appeared to have little effect in stopping the adulteration, the profit on the sale of watered spirits being probably many times larger than the fines imposed.

The Duke of St. Albans, in moving the adoption of the report, said that the county money must be wasted if, when prosecutions were instituted, the fines were so small that they could be paid, and yet allow a large profit to those persons who had adulterated the articles sold. Of course, the committee would not wish in any way to dictate what the sentence should be, but they wished to bring the matter seriously before the notice of the magistrates.

Mr. Anderson seconded, and the report was adopted.

MORE CHARGES AGAINST OZONE.

It is a well-known fact that milk is especially apt to sour during the prevalence of a thunderstorm, and from this it has been surmised that the electric discharge held some mysterious sway over the lactical fluid. An Italian experimenter, Professor G. Tolomei, has been making trials of various sorts, the object being to throw some light on electric influence over milk molecules. In his first experiment he passed an electric discharge from a Holtz machine between two balls of platinum hanging two inches apart in a bottle containing a quart of fresh milk; secondly, by sending a current between two strips of platinum at the bottom of a V-shaped tube filled with the same fluid; thirdly, by subjecting milk in a test tube to the action of a strong battery current through a silk-covered copper wire wound spirally around the tube. In each one of these experiments, which were as thorough as any lover of science could wish, it was proved that acidulation of the milk was delayed instead of being hastened, as had been expected. Three equal portions of milk from the same milking, thus treated began to grow acid on the seventh, the ninth, and the sixth days respectively, while other portions of it, which had not been treated with electricity was rankly acid on the evening of the third day. Having thus disproved the popular theory of lightning being the direct cause of the acidification of milk, Professor Tolomei tried ozone, and found therein the mystic agent of milk souring. In the second trial of ozone he brought the surface of a quantity of milk close to the two balls of the machine used, and the fluid almost instantly became acid in consequence.

"TRUTH" ON OZONE.

"So many new faiths are exploded that one does not now know where to turn for a belief. Was there any faith more successful than that of the microbe-destroying power of ozone? Well, M. Christmas has found that ozone in the great proportion of 43 per cent. may be turned on diphtheria, typhoid, and other bacilli without checking their increase. They even seem more 'fit' under this test. The only way in which ozone can be a microbicide is by furnishing vital resistance to beings with lungs to take it in. Health resorts where the air is rich in ozone are, therefore, good to resort to. Dusty places should be avoided, inasmuch as dust destroys this vivifying agent, which has an affinity for green pastures and forest-clad high mountains. The microbe is hardly to be feared where there is vital resistance. It may in that case be one's best friend. It is only when the flame of life is low that it becomes really dangerous.

"A good and easy way to discover the presence of ozone in a place is to wear silver trinkets. If they grow black, as if near hot sulphur springs, you have it in a large proportion. Silver jewellery keeps white in the low-lying towns of Norway, but gets black in the hill-side pine-woods. If one walks in a meadow after a thunderstorm, one will find the silver money in one's purse discoloured."

DISEASED MEAT.

At Grimsby, on August 1, William Allen, butcher, was summoned by the Grimsby Urban Sanitary Authority for having in his

possession a quantity of unsound meat, intended for human food—Mr. T. Mountain prosecuted, and Mr. White, who defended, said the defendant would admit that the meat was bad.—The evidence for the prosecution was that the defendant had no shop, but had a stall in the Freeman-street Market on Saturday nights. He also had a store in Thesiger-street, and a slaughterhouse some yards away. Sanitary Inspector Moody went to the defendant's store, and in a pickle tub found a leg of mutton, which was black inside, and smelt very bad. Defendant said that it was not for sale; it was for their own eating. In a barrel he also found a quantity of meat, and took out a leg and shoulder of mutton in the same condition. With reference to these the defendant made the same statement as before. There would be quite 10 stones of meat. Defendant sometimes had sausages upon his stall, and very often sold salt meat before the seizure. The weight of the meat seized was 20lbs.—Dr. Newby (Medical Officer of Health) said the meat was perfectly unfit for human food; it stank very badly, and, in fact, he did not think anyone could eat it.—Mr. White, for the defence, put it that the defendant did not intend to expose for sale or in any way sell the meat which was seized by the inspector.—George Grason, butcher, of King Edward-street, said he had never seen salted mutton ever exposed for sale. Defendant told him he had put two legs of mutton in salt for his own use.—The magistrates fined defendant £5, including costs.

HULL AND DISEASED MEAT.

At a meeting of the Hull Markets Committee, on August 2, Alderman Hall presiding, a letter was read from a local butcher stating that on Monday, July 9th, he purchased at the cattle market from Mr. H. Sugden, auctioneer, a beast for £9. Upon the beast being slaughtered, it was found to be unfit for food, and condemned by the meat inspector. He (the butcher) applied to the auctioneer for the name of the owner of the animal, with a view of recovering, if possible, some compensation for the loss, but he was not able to obtain the owner's whereabouts. He understood that there was a rule of the market providing that the name and address of the owner should be furnished, and he asked the committee to enforce it. It was unanimously decided to ask Mr. Sugden to supply the information.

WHERE BAGS OF MYSTERY ARE CONCOCTED.

At Worship-street, on July 31, a man named Finkelstein, living in Back Church-lane, Whitechapel, was summoned under the Factory and Workshops Regulation Act, for overcrowding workshops in his premises.—The Sanitary Inspector of Whitechapel parish gave a description of the defendant's premises. The front parlour was used as a butcher's shop; the back parlour was a sausage manufactory, where two men worked making "polonies"; the lower part, a kitchen, was used as a tailor's shop, and under the bench where the tailors sat at work, a goat and ducks were kept, a number of fowls running about in a very small yard behind the kitchen, to which they also had access. There was no attempt at ventilating the kitchen, but it had been used for some time as a workshop, and an assistant sanitary inspector, corroborating Mr. Harvey, said that on some occasions he had found five persons at work tailoring in the kitchen, which was only 10ft. by 15ft. whilst cooking was also done there. This was a sample of the house-farming which was practised all through whole streets in the district, the houses being got hold of by aliens, and let out at "sweating" rents.—An order was made to abate the nuisance.

SUPPRESSING ADULTERATION IN PORTSMOUTH.

At Portsmouth, on July 30, there was an onslaught upon the adulteration gentry, the inspectors under the Food and Drugs Act having eight summonses against local retailers down for hearing. Mr. Hammer prosecuted, and first took a charge against Mr. S. G. Burden, 84, Somers-road, of selling margarine to Inspector Billing without a label. Mr. Hyde, for the defence, cross-examined at great length as to the identity of the packet analysed, his object being, he said, to show that a mistake had been made. The result of Dr. Mumby's analysis was that the sample contained 53 per cent. of foreign fat, but he (Mr. Hyde) had a certificate from a very celebrated analyst to say that the companion sample left with Mr. Burden contained no foreign fat at all. In view of the conflict of evidence the case was adjourned for a month, that the third sample may be sent to Somerset House for analysis.

A charge of a similar character was preferred against Mrs. Lanning, of Church Path North, who sold a pound of "butter" to the inspector for 10d. She informed the magistrates that she did not know the law's requirements, but was told that ignorance is no excuse. Dr. Mumby's certificate showed that the sample analysed contained 90 per cent. of added fat, and a fine of 10s. including costs had to be paid by the widow, who told the magistrates she has nine children to support.

In the case of Mrs. Summers, of 77, Ivy-street, the defendant said she bought the margarine as butter, and the magistrates' clerk said it was a pity they could not get at the men who supplied these small dealers. A fine of 15s. including costs (14s. 6d.) was imposed.

Meeting a small boy with a milk can in St. Andrew's-road, Inspector Benjamin purchased a pint, which, on being analysed, showed 32 per cent. of cream abstracted. The boy's father, George Smith, who lives at 151, Somers-road, explained that the wrong can had been taken out. The mistake cost him a sovereign.

Another street purchase was made in Emanuel-street by Inspector Billing, but Charles Keating, the lad who sold the milk, ran away. When met afterwards he said he didn't know why he did so, but the public analyst certified 11 per cent. of water added to and 35 per cent. of cream abstracted from the sample. Keating has to pay 30s. for what the magistrates described as defrauding the public.

If you want to get cream you must stir the milk. The operation was neglected at the shop of Mr. Bowring, 45, Elm-road, the other day, and the consequence was that a pint of milk which the inspector bought as "pure" for 2d. was certified by the public analyst to have had 21 per cent. of cream abstracted. Unfortunately for Mr. Bowring he has been before the magistrates on four previous occasions, and has now to pay 40s. including the costs.

DROUGHT AND THE MILK SUPPLY.

The following recent cases are interesting. Before the Reading Borough Bench, William F. Paxman, of Wokingham-road, Reading, dairyman, was summoned for having in his possession some milk from which a portion of cream had been extracted so as to affect injuriously the quality and substance of the milk, on June 14th.

Mr. Sidney Brain defended, and Mr. Stevens, Deputy Town Clerk, appeared to prosecute on behalf of the Corporation.

Mr. W. H. Robertson, Inspector of Nuisances, stated that on the morning in question he purchased at defendant's shop in the Wokingham-road, half-a-pint of new milk. It was served to him by the shop assistant (Miss Edginton), and was taken from a pan in the shop. After he was served he gave Miss Edginton to understand that he was going to have the milk analysed. He submitted the sample to the public analyst the same morning, and on June 24th he received a certificate from him stating the result of his analysis.

Dr. Ashby, public analyst for the borough, proved examining the sample and finding it deficient in fat. He stated that only 2.34 per cent. of fat remained in the milk, and that not less than 22 per cent. of the fat natural to milk had been extracted. He should say that the sample under notice could not be genuine dairy milk from the fact that in hundreds of thousands of analyses no dairy milk—whether in dry seasons or in wet seasons—had ever been found with so low a percentage of fat as that sample. In fact, there was no record of the fat in any sample of dairy milk ever having been anything like so low as that. The average of fat in 120,540 samples of dairy milk supplied to the Aylesbury Dairy Co. during seven years, ending 1892, was 4.1 per cent. The average in the Somerset House samples of dairy milk was 4 per cent. of fat, and in only one instance did it fall just below 3 per cent., viz., to 2.89, which figure was far above the sample in question, and which would never be reported against by any analyst. The average quantity of fat in morning milk supplied to the Aylesbury Dairy Co. from this part of the country, during June of this year, was 3.54 per cent., the minimum having been 3.15 per cent.

Mr. Brain said there was not a particle of testimony to show that any cream had been abstracted. He remarked upon the unfairness that was generally occasioned to defendants in cases of this kind by the prosecution not taking out the summonses sooner, three weeks or a month sometimes elapsing before the cases came on for hearing.

Dr. Jagoe, of Blandford House, Reading, was then called, and stated that he supplied milk to the defendant, and had done so for some time past. On May 6 he received a communication from defendant remarking upon the deficiency of the cream in the milk. In consequence of this, he handed the letter over to the police, and, as a matter of fact, P.S. Foster investigated the matter, but was unable to trace anything wrong. Witness had kept a record, showing the quantity of cream yielded by the cows for some time past, and produced facts to show what the percentage was from time to time. He also stated that the feed of the cows was altered in consequence of the correspondence which took place between him and defendant.

Miss Fanny Edginton stated that she had charge of defendant's shop in Wokingham-road, and was aware of the fact that he had milk from Dr. Jagoe. On June 14, when the inspector called, the milk arrived at the usual time—about six o'clock. Part of the milk went away and the other remained at the shop. At the time the inspector called the milk had been standing in the shop for a couple of hours. She had not in any way interfered with the milk; it was exactly in the same condition when the inspector called as when she received it. It had never been the practice at the shop to take the cream from the milk.

George Trinder, of Cholmeley-terrace, said he had worked for defendant about three years, and it was part of his duty to take milk out in the cart. On the day in question, when Mr. Robertson called, he was present in the shop. The milk had then been measured out for him to deliver, the remainder being left in the shop. There were ten or eleven quarts of milk in the vessel from which the sample was taken.

Miss Edginton, re-called, said she was in the habit of testing the milk, and in consequence of her results she told Mr. Paxman, who communicated with Dr. Jagoe.

George Paves, of Elm Farm, Earley, and head cowman to Dr. Jagoe, spoke as to the condition of the pasture on which the cows were fed being very bad during the past season. In consequence of this they had had to feed the cows on artificial food, and during May and June the quantity was increased for the purpose of increasing the cream. Previous, however, to doing this a complaint had been received from Mr. Paxman as to the condition of the milk. None of the cream had been abstracted from the milk. From his thirty years' experience in cowkeeping he should say that the richness of the milk depended largely on the feeding.

P.S. Foster proved receiving a communication from Dr. Jagoe, and stated that the object of his investigation was to see if the milk had been tampered with.

The defendant said he had sold milk in the town for 26 years, and had had shops in Reading for 12 years. That was the first complaint he had received respecting the milk, although samples had been taken frequently by the inspector. He had also occasionally taken samples himself and had them analysed in the interest of the public generally. He and Dr. Jagoe had spoken from time to time about altering the feed of the cows, and had done everything in the matter that was possible.

Cross-examined: They separated the cream at Oxford-road business and sent it to Wokingham-road.

By Mr. Brain: Every churn of milk received from Dr. Jagoe bore a label guaranteeing it to be pure milk.

This concluded the evidence, and the Bench retired to consider their decision. On returning, the Chairman said that after giving the case their very careful consideration, they had decided to dismiss it. With regard to Mr. Brain's remark about the delay in taking out the summons, Mr. Smith said it was only fair, in a case of that kind, that immediate notice should be given to the person whom it was intended to prosecute.

A case against James Williams, of 63, Orchard-street, who was also summoned for having in his possession some milk from which a portion of cream had been extracted was adjourned, but when it again came before the Bench no evidence was offered, and the information was therefore dismissed.

POINTS FROM OUR KIN ACROSS THE SEA.

THE ADULTERATION OF PARIS GREEN.

In his report to the Inland Revenue Department, Ottawa, Canada, Mr. Thomas Macfarlane, chief analyst, says:—

"By the 'Act in restraint of Fraudulent Sale or Marking,' assented to 23rd July, 1894, Paris green was scheduled as 'an insecticide containing at least fifty per cent. of arsenious acid, and at least thirty per cent. of cupric oxide and being completely soluble in aqueous ammonia.' By the same Act the collection of samples of this article was authorised and the provisions of certain sections of the Adulteration Act were made applicable to their inspection and analysis. In accordance with instructions issued by you a number of samples of Paris green were collected in various localities in the Dominion, between Halifax and Winnipeg, in the months of August, September, October, and November, 1894. These were submitted to the district analysts for examination, and many of them were also analysed by Mr. F. W. Babington in this laboratory. The results are detailed in the tabular statement attached to this report, regarding which it appears necessary to make the following general observations.

"There are 72 samples described in the statement, which according to the opinions expressed by the analysts regarding them, may be classified as follows:—

Unadulterated, genuine, pure or good	..	..	..	52
Below standard and doubtful	..	..	..	5
Adulterated	..	..	..	15

"The genuine samples are, of course, those whose composition corresponds with the requirements of the Act, and include some samples which do not show perfect solubility in ammonia. The amount of residue remaining after treatment by that reagent is, however, in the case of those samples considered to be genuine, always below 1 per cent. With reference to the expression 'below standard,' in the most of cases it has been applied to those samples which contain a lower percentage of cupric oxide than required by the Act, which deficiency is made up by excess of arsenious acid. In Sample No. 13,256 the cupric oxide sinks to about 12 per cent., and the arsenious acid mounts to over 80 per cent., and the analyst has very justly characterised it as adulterated. As regards the worst samples, the adulterant is invariably 'Barytes,' which is the commercial name for the finely ground mineral heavy spar, barite, or barium sulphate. For the purposes to which Paris green is applied this substance is perfectly useless, being inert and without poisonous properties. This adulteration is therefore utterly without excuse. The quantity varies from 4.60 to 83.08 per cent., the latter figure belonging to a sample which contained no Paris green whatever, but consisted of the barytes and carbonate of lime coloured with an aniline green. It is worthy of remark that the samples bearing the words 'quality guaranteed' are exactly those which contain very considerable quantities of the barytes.

"There is no doubt that in the examination of these samples the methods employed by the different analysts have not been uniform, and although the results obtained are quite reliable for the purposes of the Adulteration Act, it is nevertheless felt that a comparison of the different processes used would not be without its advantages. In order to enable the other analysts to make such comparisons, and possibly to improve their methods in the future, it is proposed to insert here a short description of the process of analysis adopted in this laboratory by Mr. F. W. Babington.

"In examining these samples of Paris green, Mr. Babington did not determine the moisture, and the figures given in the table as regards the composition of the samples analysed by him refer simply to the condition in which they were received. In his process Mr. Babington used the following reagents:—

"Ammonia solution of specific gr. 0.96; this is practically a

mixture of 1 volume strong liquid ammonia with 3 volumes of distilled water.

"Caustic soda solution, saturated and free from sediment.

"Soda solution containing 10 p. c. of the hydrate, and free from sediment.

"Glucose solution, prepared by taking a solution containing 0.5 gramme of cane sugar, inverting it by hydrochloric acid, and adding water to make 100 cubic centimetres of solution.

"The sample is first tested as to solubility in ammonia. For this purpose 1 gramme is shaken up vigorously with 50 cc. of the ammonia solution, in a bottle well corked, allowed to rest one hour and then observed. With genuine Paris green a clear solution will sometimes be obtained, but usually a very slight white sediment is observable. If the sediment is at all considerable barytes is probably present, and its quantity as well as that of the cupric oxide is next ascertained. For this purpose 1 gramme of the sample is placed in a beaker of 200 cc. capacity, mixed with 25 cc. strong hydrochloric acid and heated to boiling for 10 minutes. If the insoluble matter is not perfectly white, and has not all settled to the bottom of the beaker, a few crystals of potassium chlorate are added, and the boiling continued five minutes more, water being added to keep up the loss by evaporation. The barytes is then filtered off, washed, and weighed in the usual way. The filtrate and washings are transferred back to the beaker, a few cubic centimetres of the glucose solution added, together with an excess of the saturated soda solution. On boiling for 15 minutes the copper is precipitated as sub-oxide, part of the arsenious acid present being at the same time oxidised to arsenic acid. The precipitate and liquid are then filtered through an asbestos filter tube of precisely the same construction as that described on page 15 of Bulletin No. 25 (Sugars, syrups, and molasses). After the cuprous oxide has been completely introduced into this filter, the filtration having been aided by the exhaust pump, it is washed four or five times with small quantities of hot water, dried, and weighed. This weight, multiplied by 0.1112 and 100, gives the percentage of cupric oxide.

If barytes is absent from the sample, it is not necessary to use any acid for dissolving it, but one gramme is simply introduced into the beaker with 50 cubic centimetres of the 10 per cent. soda solution, heated to boiling for 15 minutes, filtered and the cupric oxide precipitated and determined as above described. The filtrate and washings as in the case of the samples containing barytes are retained for the estimation of the arsenious acid.

"The alkaline filtrate is transferred to an Erlenmeyer flask, of 300 cc. capacity, rendered slightly acid with hydrochloric acid and before being treated with the sulphuretted hydrogen it is made distinctly hot. The flask is fitted with a double perforated rubber stopper, through which pass a gas delivery and an exhaust tube. By means of these sulphuretted hydrogen is passed through the solution for an hour or more at a fair speed. Two flasks containing the solutions from two different samples are generally treated at the same time, and after passing the gas through them for half an hour their positions are interchanged and the further passage of the gas completed. As the sulphuretted hydrogen is passed through rapidly, the waste gas is conducted into liquid ammonia or caustic soda solution and absorbed. It frequently happens that the first few bubbles of the gas produce a darkening of the liquid in the flask. This is due to the presence of a trace of copper, but it is so small in quantity that it may be neglected. When the arsenious sulphide is supposed to be completely precipitated, the passage of the gas is stopped, the stopper removed, any sulphide adhering to the gas delivery tube washed into the glass, the bottles corked and allowed to remain from six to eight hours at rest. The contents are then passed through an asbestos filter in the same manner as the cuprous oxide, the contents washed well with water containing sulphuretted hydrogen, afterwards with a small quantity of alcohol and then dried and weighed. After weighing, a wire is thrust up from the lower end of the filtering tube so as slightly to displace the filtering pad and leave a passage for the carbon disulphide to be used subsequently. The small end of the filtering tube is then loosely plugged with cotton wool, and the top covered with a cap of filter paper, perforated with a few holes and secured in position by linen thread tied round the tube. The latter is then placed in a Soxhlet and extracted with carbon disulphide for four hours. It is then dried, the cap and cotton wool removed and again weighed, the arsenious acid being calculated from the sulphide. The extraction by carbon disulphide is merely a matter of precaution it being seldom found that more than 5 to 8 milligrammes of sulphur (= 1/2 per cent. arsenious acid) are dissolved. The precipitation of the arsenious sulphide does not seem to be quite complete, because the filtrate, although at first perfectly clear, on standing over night, shows a slight yellow precipitate. The latter is mainly sulphur, but contains a small quantity of arsenious sulphide. The latter is so inconsiderable that it may also be neglected.

"I beg respectfully to recommend the publication of this report for the information of the public and the district analysts. The tabulated statement contains full information regarding the sale and source of the samples examined, including those which were found to be adulterated. Although the vendors of the latter have rendered themselves liable to legal proceedings, I do not recommend the institution of such in those cases, seeing that the law which now governs the sale of Paris green in the Dominion is only of recent enactment."

TIVERTON AND ADULTERATION.

THE Food and Drugs Act Committee reported that the superintendent of police had recently taken six samples of milk from the

carts of vendors in the town, and the samples were submitted to the borough analyst, who reported that five were good samples of genuine milk, but the sixth was adulterated 25 per cent. below the average in butter fat.—Mr. Amory, chairman of the committee, said the committee were unanimous in recommending the Council not to prosecute the vendor of adulterated milk, as this was the first case detected in the town.—The report was adopted.

SALISBURY AND ADULTERATION.

The public analyst (Mr. F. W. Stoddart) has been appointed at a salary of £35 a year. His report showed that 20 samples had been submitted to him during the quarter, and that two samples of gin had been adulterated. In one case prosecution and conviction followed.

HOW HOUSES ARE BUILT IN WOLVERHAMPTON.

At Wolverhampton, on August 2nd, before the stipendiary magistrate—John Pitt, Chetwynd Road, Villiers Street, Wolverhampton, was summoned, at the instance of the Corporation, for having, contrary to the bye-laws, used an unsuitable material as mortar in the erection of houses near to the Dudley Road. The Town Clerk (Mr. H. Brevitt) prosecuted, and Mr. Plumtre (instructed by Messrs. Thorne and Haslam) defended.—The Town Clerk stated that the Corporation building inspector had taken a sample of what was being used as mortar by the defendant, and it had been analysed by the borough analyst, who certified that the stuff was not mortar, but mud, and totally unfit for use in building operations. If a building was erected with such material it would not, the Town Clerk said, resist the force of an ordinary storm, and as the alleged mortar contained vegetable matter an unwholesome odour would be given off, and in time the dwelling would become uninhabitable. It was the stuff with which mansions of the present day were built in the district. Evidence having been given of the sample of "mortar" having been taken, Eli Bird, bricklayer, Dudley Road, was called, and he stated that he did not believe any mortar was used on the date of the alleged offence.—

Mr. Plumtre put in the contract between Bird and Pitt, which showed that Bird was to be paid £198, to erect ten houses, and the defendant was to find the material.—In reply to Mr. Plumtre, Bird expressed the opinion that the mortar was fairly good when it was ground again. The component parts were engine ashes, stone chippings, and a little soil. He described the mortar as good and made with suitable materials. Cross-examined: He did not think the mortar produced was suitable for building purposes.—Mr. Jones, public analyst, said that the material submitted to him for analysis was mud, and not of the slightest value for building purposes.—Other evidence having been given, Mr. Plumtre declined to address the stipendiary.—A fine of £5 and costs was imposed.

"MODERN WISEACRES."

DR. BRIDGER, B.A., M.D., etc., in his "Handbook of Physiology," says: "There are wiseacres yet in the flesh who wonder how lead poisoning can cause gout and biliousness, etc., and puzzle over the solution of a problem which modern elementary physiology, plus a little easy thought, renders clear even to the least intelligent."

MR. JOHN HUNTER, Edinburgh, has been appointed public analyst under the Food and Drugs Act, for the burgh of Thurso.

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Food and Sanitation.

SATURDAY, AUGUST 17TH, 1895.

LOCAL AUTHORITIES AND THE SOMERSET HOUSE CHEMISTS.

It is but natural that Somerset House should affect to ignore the existence of the strong feeling of contempt for its analytical capacity which is entertained by so many local authorities throughout the country, but it is, all the same, every day becoming clearer that Somerset House as a court of reference under the Food and Drugs Acts must go.

On the 6th inst. the Cornwall County Council met, when one member, Mr. Trevail, said the replies from Somerset House in regard to analyses were altogether unsatisfactory, and the matter should be taken up by some State department with a view to the weeding out of the incompetents of Somerset House. (Hear, hear.) The manner in which the Somerset House analyses were conducted rendered it difficult to mete out justice, and placed magistrates in a most invidious position. (Applause.) They wanted the public to act fairly as between vendors and the public, and magistrates could not convict upon the most miserable reasons possible,

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or want of reasons. He should be glad if the matter were carried further, and pressure was brought to bear on Somerset House. (Applause.) They might work in conjunction with the Society of Analysts. (Hear, hear.)

Mr. Digby Collins suggested that a small committee be appointed to confer with members of the Society of Analysts in regard to antiquated methods of analysis at Somerset House, and to see whether joint action, through the Associated Chamber of County Councils, could not be taken.

The Chairman thought it might be better to send a resolution to the County Councils Association and ask them to take up the matter. That Association might consult the Society of Analysts.

On the motion of Mr. Digby Collins, seconded by Mr. Trevail, it was resolved—

"That a committee of this Council be appointed to confer with the Association of Analysts with the view to some common action being taken by the County Councils Association for the removal of the recurring difficulties in the administration of justice, under the Adulteration of Food and Drugs Acts, arising out of the conflicting results of analysis arrived at by the county and borough analysts on the one hand, and by the authorities at Somerset House on the other; the committee to consist of Lord Mount Edgcumbe, Messrs. W. C. Pendarves, G. J. Smith, Digby Collins, and Silvanus Trevail."

Commenting upon this, the *Western Morning News* states that it is satisfactory to find the County Council have decided to take this action. It continues: "Some time ago attention was directed to the subject through our columns, in connection with the effort of Mr. Quilter to fix a standard of pure beer. Sir William Harcourt, then Chancellor of the Exchequer, met the proposal with the statement that figures supplied by the Inland Revenue showed that four-fifths of the beer is brewed from malt and hops. The assertion was strongly challenged by public analysts, who alleged that instead of four-fifths not one-twentieth of the beer sold is brewed from malt and hops without the addition of maize, rice, sugar, &c. It was pointed out that for fiscal purposes one substance after another has been allowed to be put into beer, and one analyst summed up the grievance of his tribe in this matter by remarking that 'there is no need to

add malt nor to use hops; there is no regulation as to the minimum strength; you can add as much salt as you like, and injurious preservatives in any amount to counteract the effects of bad brewing.' The analysts' grievances against Somerset House are not confined to the subject of beer. It is contended that the Inland Revenue authorities are a hindrance rather than a help to the administration of the Adulteration Acts all round. There ought to be no possibility of a clashing of public authorities in a matter of such vital importance to the health of the people, and we hope that the movement which the Cornwall County Council has inaugurated may lead to a much-needed reform. It is a grave reflection upon an important public body that it should be possible to say that it is incapable of conducting its business, and that in these days of scientific research its system is very defective." In the face of damaging criticisms by the score from the Press, from responsible public bodies, and the strong indictment signed by almost every public analyst in the United Kingdom nearly three years ago, the defence by Mr. Bannister, at Hull on August 9, of his department's tactics, in which occurs such phrases as "Our great movement for protecting the food supply of the nation from adulteration," is as puerile as it is beside the point at issue. It is, of course, in some measure creditable to the department that it should have exercised, during the past four months, enough intelligence to take 284 samples of butter at the ports of entry, and have found, it alleges, gross adulteration, but, as we advocated the taking of such samples years ago, there is nothing very novel in the process, and did we not know that the gross adulteration exists we should not, unless the Somerset House analyses were vouched for by analysts really capable of analysing butter, have considered the assertions worth much.

But it is upon milk that Somerset House surpasses itself. Against conclusive researches of the Aylesbury Dairy Company, conducted over fourteen years, during which 248,484 analyses of milk were made by that Company's chemists, Mr. Bannister is able to boast that over a period of two years, ending in the summer of 1893, two hundred and seventy-three samples of milk were collected by his department, and, in the light of this enormous experience, the 248,484 milk analyses by the Aylesbury Dairy Company's expert milk analysts are coolly ignored, and the representatives of local authorities are asked to take the outcome of the 273 researches as a reason why certain wretched cows should not be pole-axed instead of milked. Mr. Bannister showed considerable wisdom in delivering his defence of his department as a presidential address upon which discussion could not be expected to take place; but we doubt if it will alter the opinion of the Cornwall County Council, or any local authority, or lead to anyone, who has the suppression of fraud in food stuffs at heart, believing that Somerset House has been and is at present any other than the most potent factor in encouraging frauds in food and drink.

MR. BANNISTER DEFENDS SOMERSET HOUSE.

In the Chemistry and Climatology section at the annual congress of the British Institute of Public Health, at Hull on Aug. 9, Mr. Richard Bannister, F.I.C., F.C.S., Somerset House, London, confined his presidential address to a discussion of "The Food Products Adulteration Committee and its Work." He said: The appointment of the Select Committee of the House of Commons, on April 20, 1874, to inquire into the Adulteration of Foods Act of 1872, and of the second Select Committee on May 29, 1894, to enquire into the working of the Margarine Act, 1887, and the Sale of Food and Drugs Act of 1875, and any Acts amending the same, mark two distinct epochs in the administration of the Acts relating to the adulteration of food in this country, and indicate that the Acts themselves, when put into operation, have not fully answered their purposes, and have given occasion for suggested amendments. By comparison of the statistics of adulteration and of the evidence given before these respective committees, we are able to

mark the progress made in protecting the food of the nation, and to know the strong and weak points of our present machinery employed in securing this protection. The report of the Committee of 1874 was the basis of the Food and Drugs Act of 1875. That committee was presided over by Mr. Clare Sewell Read, a practical agriculturist well acquainted with dairy and other products forming the food of the people. The information given in the report, and the suggestions made, form the groundwork of the subsequent Act, and deserve special consideration, as showing that the information placed at the disposal of the committee was well sifted and weighed before any part of it was accepted to form the basis of the report presented to the House of Commons. The committee's report may be summarised:—

1. That while the Act of 1875 had done much it inflicted considerable injury, and imposed heavy and undeserved penalties on some respectable tradesmen, owing mainly to the want of a close understanding as to what does and what does not constitute adulteration, and in some cases to conflicting decisions and results of analysis.

2. That the adoption of the Act was by no means general, and the machinery established for putting the Act in motion was in many instances unsatisfactory. That the number of boroughs under the Act was 171, and of counties 54, but appointments were only made in 26 boroughs; and 34 counties, in addition to the City of London and the district boards or vestries under the Metropolitan Local Management, had appointed analysts.

3. That in the case of milk allowance should be made for the natural variation of its condition due to food, breed, time of year, and the treatment of the animals, and while being not in favour of fixing the standard the committee were in a position to make the fraudulent abstraction of cream punishable, and also the sale of skim milk for new.

4. That when mixed articles of foods and condiments are sold, it should not be necessary to state the proportion of each ingredient, but the fact of their being mixtures should be plainly indicated by a legible label or notice conspicuously attached to the outside of each package in which the mixture is sold.

Other recommendations were made, such as (a) a proper division of the sample, (b) its transmission by post to the analyst, (c) the form of the certificate of analysis, (d) a reference to Somerset House as a final court of appeal in disputed cases, (e) the operation of the Act to be compulsory. The Sale of Food and Drugs Act of 1875 imposed most of the recommendations of the committee, but the Act was not compulsory. The reference to Somerset House was permissive, but not obligatory, and the right to refer disputed samples was left in the hands of the magistrates. The Amendment Act (1879) more accurately defined "prejudice of the purchaser," gave power to take samples in transit, defined the standard strengths for spirits, and limited the time of taking proceedings in the case of perishable articles.

The Margarine Act (1887) was called into existence to control the sale of margarine, which had come into general use under the name of "butterine" when mixed with different proportions of butter. It was thought that the name misled the public, and did injury to the sale of genuine butter, and consequently it was laid down in the Act that all mixtures of butter and other fat should be called margarine; that an invoice should be a warranty, and that a servant who disobeyed his master's orders with regard to the sale of margarine for butter should be liable to be prosecuted, and, in fact, it was intended by this Act that all offences for the sale of butter containing foreign fat should be tried under its provisions, and not under the Act of 1875.

Difficulties and grievances arose out of the administration of the Acts, and the Select Committee on Food Products Adulteration was appointed in May, 1894, to inquire into the working of this Act, and report if any, and, if so, what amendments to the law relating to the Adulteration Acts were desirable. The committee had for two Sessions taken evidence, but on account of the General Election the inquiry has not been finished. Under these circumstances, it is not intended to take up any burning contentious matter, but simply to mark:—

1. The progress made in the extension of the area in which the Acts are enforced.

2. The anomalies caused by not vigorously carrying out the Acts in certain districts.

3. The value of the Acts in putting down adulteration.

4. A few difficulties which have arisen in the incidence of the Acts, and which demand careful consideration and amendment.

THE AREA OVER WHICH THE ACTS ARE IN FORCE.

The Act of 1875 provides for the appointment of a public analyst for every county, for every Quarter Sessions borough or borough having a separate police establishment, for the City of London, and for each of the London Vestries and District Boards; but the Act of 1893 transfers the appointment of analyst from Quarter Sessions to County Councils, takes away from boroughs with less than 10,000 population the right of having analysts of their own, and causes them to be absorbed by the County Councils. Analysts have been appointed as follows:—

Sixty-one for administrative counties.

Sixty-one for county boroughs under section 10 of the Act.

Three for county boroughs under section 11 of the Act (by agreement).

Sixty-eight for non-county boroughs with populations over 10,000.

Three for non-county boroughs under section 11 (by agreement).

One for the City of London.

Forty for vestries and district boards for London parishes.

There are 237 districts for which analysts have been appointed or under agreement; and, practically these districts cover the whole country. It must not be understood that there are 237 analysts in this number of districts, because it is not uncommon for one analyst to hold several appointments, and consequently the number of analysts employed is much less than the districts they serve. With the appointment of analysts and the necessary machinery for taking samples it might be thought that the Acts would be carried out with fair uniformity throughout the United Kingdom; but this is far from being the case, and even after the officers of the Local Government Board have pointed out to the several authorities the necessity, in the public interest, to enforce the Acts in those districts in which few or no samples have been taken, they have taken no action, and have allowed the Act to continue a dead letter. What was asked for in the way of sampling was not very onerous, for the Local Government Board only suggested that at least one sample should be taken for each thousand of the population. In the aggregate this proportion was only reached in the year 1891. In 1893 the proportion had risen to one sample for every 779 of the population in England and Wales, the proportion in London being one for each 530 persons, and in the country one for each 847.

THE ANOMALIES CAUSED BY NOT VIGOROUSLY CARRYING OUT THE ACTS.

In many districts the Act still remains inoperative. It was stated in evidence that in the year 1893, within the jurisdiction of the County Councils of Hereford and Montgomery and the Town Councils of 16 boroughs, including:—

Northampton,	with a population of	61,012
Colchester	" "	34,559
Dover	" "	33,300
Hartlepool	" "	21,271
Margate	" "	18,417
Bury St. Edmunds	" "	16,630
Wenlock	" "	15,703
Durham	" "	14,863
Barnstaple	" "	13,058
Beverley	" "	12,539
Bridgwater	" "	12,436
Penzance	" "	12,432
Newbury	" "	11,002
Tiverton	" "	10,892
Congleton	" "	10,744
Louth	" "	10,040

not one sample was taken for analysis. In the jurisdiction of the County Councils of Derby, Devon, the Soke of Peterborough, Oxford, Salop, West Suffolk, Carmarthen, Merioneth and Pembroke and in eighteen boroughs, including Sunderland, Preston, St. Helen's, Southport, Boston, South Shields, Walsall, Ipswich, Gt. Yarmouth, Tynemouth and Oxford, the number of samples purchased was so small as to offer no protection against adulteration. In fact, there are forty-five districts having an aggregate population of nearly three millions in which the Adulteration Acts are either not put in operation at all or so laxly enforced as to be practically useless, the samples taken over the whole area being 496, or one sample for every 5,720 persons.

It must be self-evident that the injury done to the honest trader and to the consumer by such laxness in carrying out the law is not confined exclusively to the district in which the law is so loosely administered. The fraudulent trader will take advantage of these exceptional conditions; he will be able to sell with impunity adulterated articles in his own and adjoining districts, giving him large profits and at the same time, be able to unfairly compete with tradesmen who, on principle or from restrictive causes, are not prepared to take advantage of their customers. With Adulteration Acts on our statute books no community ought to have a right to suspend their operation, and it would be a great service to the public at large if the Government Department having charge of the Public Health were given statutory power to enforce these Acts in those places in which they are not properly administered.

Several gentlemen who gave evidence strongly insisted on the necessity of examining the articles of food of foreign production at the port of entry. The value of such an examination is apparent, but the necessity of enforcing it is at once modified by the fact, as before stated, that in some parts of our own country the Adulteration Acts are not enforced, and no effort is made to secure the purity of the food consumed in that area. Such an unsatisfactory condition of things must encourage both home and foreign adulteration, and especially so when it is admitted that no department of the Government has even now any power to compel the local authorities to carry out the Acts as intended by the legislature. It may be of interest to know that during the last three or four months 284 samples of butter have been taken from consignments of foreign butter at the port of entry, and the result was that the butter imported is grossly adulterated, as has been alleged by several members of the butter trade who have given evidence before the Commission. The samples were taken at the ports mentioned below, and the second table is given to show the country of origin and the ports through which the consignments came. In eleven cases only (3.8 per cent) was there undoubted evidence of adulteration of foreign fat and the amount of adulteration was not large. In four samples the percentage of adulteration existing was 10, and in other seven the portion was 10 or under. The margarine used in some of the mixtures

contained sesame oil as one of its constituents. Of the eleven adulterated consignments six were exported from Hamburg, two each from Russia and Norway, and one from Holland; and the ports of entry were six from Grimsby, three Newcastle, one Hull, and one London. The amount of water was estimated in all the samples, but owing to six bottles containing the butter having been broken in transit, the moisture in these six samples, being on this account probably too low, is not included. The proportion present in 278 samples has been summarised in the following Table, which gives the percentage of water present, grouped in successive increments of two per cent. :—

Samples	9 water from	6 to 8 per cent. in	3.24 per cent. of samples,
" 63	" 8 " 10	" "	22.66 " "
" 119	" 10 " 12	" "	42.80 " "
" 62	" 12 " 14	" "	22.32 " "
" 19	" 14 " 16	" "	6.83 " "
" 3	" 16 " 18	" "	1.08 " "
" 2	" 18 " 20	" "	.71 " "
" 1	" above 20	" "	.36 " "
278			

Putting the proportion of water in another way, samples 272 under 16 per cent. was 97.85 per cent. of the samples; six over 16 per cent. was 2.15 per cent. of the samples. The use of colouring matters appears to be very general. Pale butter is chiefly imported for consumption in the north of England, and coloured butter in the south. The colouring matter used as a rule is annatto, but in a few instances it was one of the so-called coal-tar colours. There is nothing to show that the colouring matter is hurtful in the quantity in which it is used, but there is a prejudice against the use of aniline dyes in articles of food or drink.

Nearly all the samples of fresh butter contained a preservative, and especially those imported from France, but some of the samples from Holland, Hamburg, The United States, and Canada were not free. The preservative was borax.

TABLE I.

Showing the British Ports from which the samples of butter were received, and the country of export classified under each out-port.

Port of Entry.	Whence Imported.	Samples. No. Total
London	Holland	38
	Denmark	11
	Sweden	7
	Belgium	1
	Hamburg	2
Hull	New Zealand	8
	Australia	10
	Holland	18
	Denmark	12
	Sweden	12
Newcastle	Russia	9
	Holland	3
	Denmark	33
	Sweden	1
	Hamburg	4
Leith	Holstein	2
	Holland	9
	Denmark	15
	Russia	1
Grimsby	Hamburg	2
	Denmark	6
	Sweden	10
Southampton	Sweden	6
	France	14
Newhaven	United States	1
	France	14
Harwich	France	14
	Denmark	11
North Shields	Holland	3
	Norway	5
Liverpool	Denmark	11
	United States	3
Goole	Canada	2
	Holland	1
Glasgow	Hamburg	4
	United States	3
Bristol	Canada	1
	United States	3
		4
		2
		2
Total		284

TABLE II.

Showing countries of export and the respective ports at which the butter was received.

Place of Origin.	Port of Entry.	Samples.
		No. Total
Holland	London	38
	Hull	18
	Newcastle	3
	Goole	1
	Leith	9
	Harwich	3
		72
Denmark	London	11
	Newcastle	33
	Leith	15
	Hull	12
	Grimsby	6
	Harwich	11
		88
Sweden	London	7
	Hull	12
	Grimsby	6
	Newcastle	1
		26
Norway	North Shields	5
		5
Belgium	London	1
France	Southampton	14
	Newhaven	14
		28
Russia	Hull	9
	Leith	1
		10
Hamburg	London	2
	Leith	2
	Grimsby	10
	Newcastle	4
	Goole	4
Schleswig-Holstein	Newcastle	2
		24
United States	Liverpool	3
	Glasgow	3
	Southampton	1
		7
Canada	Liverpool	2
	Bristol	2
	Glasgow	1
		5
New Zealand	London	8
		8
Australia	London	10
		10
		Total 284

Of the value of the Acts in putting down adulteration, even when imperfectly administered, there is no question that the Acts have done an incalculable amount of good. This is conclusively proved by the returns of adulterated samples published by the Local Government Board. These returns, though not absolutely correct, are very fair results for comparison, as the errors in them are fairly uniform, and enable us to compare one year with another for statistical purposes. Taking five years from 1881, when the statistics of adulteration became sufficiently reliable for comparison, the percentage of samples reported as adulterated was 16.2; in the next five years ending with 1886 the percentage was 13.9. In the next five years, which brings us down to 1891, it was 11.7. In 1893 the percentage of adulteration had increased to 12.9 per cent., the two chief products accounting for this increase being milk and spirits. The number of samples examined was 37,233, of which 4,793 were reported as adulterated. Of this number of adulterated samples prosecutions were ordered in 3,174 cases. Penalties amounting to £5,001 12s. 8d. were imposed in 2,687 cases, and the other cases were either dismissed or otherwise disposed of. Of the 37,233 samples examined in 1893, no less than 15,543 were of milk, and of these 2,310, or 14.9 per cent., were reported against. In 1,542 of these legal proceedings were taken, and fines amounting to £2,914 19s. 2d. were imposed in 1,292 cases. Of the total of 37,233 samples examined during 1893 there were included, beside the 15,543 samples of milk, 5,784 samples of butter—that is to say, dairy produce constituted more than 57 per cent. of the total samples examined. Of the butter samples examined 794 were reported as adulterated, the percentage of adulterated samples being 13.7. From these figures it is apparent that there is great necessity to study the milk and butter question in all its bearings, and to see what difficulties there are in the way of carrying out this part of the analyst's duties with justice alike to himself, the producer, and consumer.

No one who has carefully studied this question can speak lightly of these difficulties, and in the past the question has not been considered and debated in the calm judicial temper which its importance demands.

With regard to milk, many difficulties would be removed if the statement made by an expert to the Committee, in 1874, were true, viz.:—That "the quantity of fat varied in milk," but that "the other

constituents were wonderfully constant, and they hardly vary at all, and according to certain rules, I can tell how much water has been added to a given sample of milk or how much cream has been taken from a given sample of milk." This, unfortunately for the analyst's peace of mind, is not the case, and thereby intensified is his difficulty when the Local Government Board, who are the interpreters of the intention of the Act, stated in their report of 1892 that "it is not in accordance with the design of the Act that a poor man should be subject to penal proceedings because his cow does not produce as good milk as the better fed herd of his richer neighbours." We have therefore to meet these difficulties as best we can, remembering:—

1. That the Act applies to the whole of the United Kingdom—to country places as well as towns.

2. That the milk supplied in large towns is almost entirely derived from large dairies where the milk of the whole is mixed before it is despatched, and that such milk is afterwards retailed by large distributing companies.

3. That in towns there is a large demand for cream, and that to meet this demand a large quantity of new milk is deprived of its cream by the separator; that such separated milk readily lends itself to adulteration; and that such adulteration is now largely practised.

It has been suggested that a legal standard of milk should be adopted, and that this standard should be the average composition of commercial milk. The hardship of such a standard would in its incidence be felt by persons keeping a few cows, or a single cow in country places; but in the case of town supplies the large distributor would be able to lower to this standard by the help of separated milk.

Over a period of two years, ending in the summer of 1893, we collected 273 samples of milk from a wide area, and tried to secure to the best of our ability not only genuine samples but samples that would fairly represent the breed of cows used for milking and the variety of food used in feeding them. Of this number 17 per cent. gave milk containing less than 8.5 per cent. of "solids not fat," when estimated by the maceration process. It has been alleged that cows giving such a low quality of milk are either diseased, underfed, or possess some infirmity rendering them unfit to produce milk fit for ordinary consumption. If this allegation were true, which it is not, it would have applied to at least 700,476 out of the 4,120,451 milch cows in the United Kingdom in 1892; to 682,389 in 1893; and to 667,332 in 1894. No doubt the proportion would be greater, because the ordinary food of milch cows in the United Kingdom is not so good in quality nor so large in quantity as was consumed by the cows from which the samples were taken. It must at once be apparent how hardly the average standard would apply to the owners of these cows, who would be found mainly amongst the poor striving cottagers, crofters and small cow-keepers. Any interference with them would raise such a storm of indignation that no Government could resist it, and enquiry into the circumstances could only end in giving the relief sought. Again, in considering this question, a point arises calling for settlement, and no body of men are more competent to give an authoritative opinion upon it than the members of this Institute. It is this—Cows supplying milk under contract are kept as simply milk-producing machines—kept and fed up in such a way as to produce the maximum quantity of milk of the contract quality. They are kept under abnormal conditions, and instead of seeking their food in the ordinary pasture, where a considerable quantity of it can be used to build up the waste of the body consequent upon exercise, it is brought to them in the shed and there consumed. Is milk so produced, though richer in fat and "solids not fat," as wholesome as that produced by the cow when living under normal conditions? In other words, is the percentage of "solids not fat" and fat the true standard of the value of cows' milk when taken as an article of food? This standard has been taken because it requires no question to be asked or inquiries to be made as to the origin of the milk under examination, but in the case of contract milk supplied to the consumer by the producer, this standard ought to be modified, and has been modified by some magistrates. Some of the representatives of town-distributing companies are in favour of a standard of 9 per cent. "solids not fat," and of 3 per cent. of fat being legalised. It can be shown how this proposal will work out if we once again turn to the results of the examination of the milk obtained from the 273 cows before referred to; 126 cows gave milk containing "solids not fat" ranging between 8.80 and 9.30 per cent., the average of the milk of these 126 cows being "solids not fat" 8.97 per cent.; fat, 4.08 per cent. This milk would allow of the addition of 40 gallons of the same milk when separated to over 100 gallons of whole milk. The percentage of "solids not fat" would be slightly increased by this addition, and the fat present in the mixture would not be less than 3 per cent. The milk analysts of large towns are aware how common is the addition of separated milk to whole milk, and from their experience they are certain that in natural milk, when the solids not fat rise to 9, the fat should be considerably more than 3 per cent. It will thus be seen that raising the standard would not secure the purity of milk. The large distributors would be able to make a larger profit than they now do, and the small producer would be more frequently prosecuted for adulteration through no fault of his own. In Manchester and Salford the sale of adulterated milk appears to have been reduced to a minimum, the percentage of adulteration in Manchester being 5.4, and in Salford 3.1. This has been brought about by appealing to the cows supplying the suspected milk whenever such an appeal could be made. The plan is an expensive one at first, but eventually pays, and occasions a minimum of hardship to producer, distributor, and consumer alike.

The difficulties which have arisen in the incidence of the Act :

Much of the evidence which has been given with reference to a mixture, is only the repetition of what was said twenty years ago, before the 1874 Commission, but it has been shown that the trade labours under great hardships from the following causes :—

1. The non-acceptance by magistrates trying adulteration cases of the certificate of the analytical chemist employed by the defendant, which necessitates his appearance in person at considerable expense.
2. The refusal of the magistrates to allow the defendant his full costs when the case is decided in his favour.
3. The refusal of some magistrates to allow an appeal to the referees under the Act, and of not accepting the certificate of the referee as evidence in the case.

In all such cases justice must be blind. No prejudice must be imported into the proceedings on one side or the other, and as the proceedings under the Adulteration Act are criminal, it is our duty to lean to the side of mercy, and only proceed when the case is free from doubt. The large majority of manufacturers and tradesmen of this country are desirous to suppress adulteration, and are ready to co-operate with the authorities in so doing. It would therefore be a misfortune if by harsh measures we lose the sympathy and support of the right-minded who are willing to aid us in our great movement of protecting the food supply of the nation from adulteration, or of creating an impression in the minds of the legislature that the legitimate trade of this country is being fettered and injured by our action.

Sir Charles Cameron (Dublin), who followed, said that the authorities had done a great deal for the suppression of food adulteration even with the inefficient machinery at their disposal. Continuing, Sir Charles gave some details of the working of the Act in Dublin. Sanitary authorities were very often not very anxious to carry out the Act because it involved expense. He thought that in too many cases they were too limited in expenditure to maintain proper officers to collect a sufficient number of samples. He thought it would also be in the interest of the public health if the public analysts were more adequately remunerated than they were at present. The analysts should be better paid, so as to secure the best men. There should be liberal expenditure in getting good and successful men—and he knew he was going to say, perhaps, what was open to objection—and enabling them to act as a kind of detective police. He knew what the Royal Irish Constabulary did. They were all food inspectors, and they, in full uniform, walked into a shop and asked for a sample of whisky, or some other kind of food. (Laughter.) Under these circumstances it was highly improbable that they would get anything else but the very best sample that could be found. It appeared to him that they were particularly fond of taking up samples of whisky, and they always took up large quantities, too. (Laughter.) He never had any reason to complain of the smallness of the samples. (Renewed laughter.) In regard to the question, there were many things which operated very prejudicially against the carrying out of the Act, and one was the caprice of the police magistrates. In some cases the magistrates would inflict a fine of £20 and costs, while another, for precisely the same offence would impose a fine of 1s. He could quote numerous cases in Ireland where these widely different penalties had been imposed. Another thing to be guarded against was this question of standards. He was beginning to find out in Ireland what the President had suggested—the systematic adulteration of milk to the minimum standard. He sometimes got a whole lot of specimens collected by the constabulary, and it was astounding to see, even in a rich district like Limerick or Tipperary where the pastures were good, 15 to 20 per cent. adulterated. He himself was rather inclined to favour a standard, and even a standard moderately high. He in fact would be very much inclined to adopt two standards—one standard in which there should be no defence except that the analysis of the analyst was inaccurate; and another standard which would be open to defence, apart from the circumstances of the analysis, as to the kind of cow, and feeding. The more he thought of the two standards the more he was inclined to believe that such a system would work. If a standard was adopted it would be to the interest of the dairyman to maintain a high standard. If he knew that the milk was expected to be of a certain quality, he would take care that it should be of that quality. In conclusion Sir Charles said that another great difficulty in the carrying out of that Act was the fact that magistrates would listen to every technical objection made by solicitors for the defence, and he thought that if there was to be any amendment of the Act it should be made plainer. Also to make the Act more effective there ought to be some regulation as to collection of the samples.

After some discussion,

The President, in reply, said that it would be very desirable indeed if there were some compulsory power that the Act should be enforced the same all over the country, and that they should not only have analysts, but the power to compel people to supply samples. To enforce the Act, the machinery should be of such a kind that it should be simple, that the analyst should be adequately remunerated, and that the Inspector should not be known to the people from whom he bought.

The President also made some observations on the pharmacopœia and the standard of purity of drugs.

JEYES' DISINFECTANTS.

THE directors of Jeyes' Sanitary Compounds Company Limited, of 64, Cannon-street, London, E.C., announce an interim dividend at the rate of 10 per cent. per annum for the six months ended June 30, 1895.

A RATIONAL DIABETIC FLOUR.

BY HEINRICH STERN, PH.D., M.D.,

OF NEW YORK CITY.

"GIVE us our daily bread"—this utterance of the faithful shows that bread is the recognised, most essential, and most important foodstuff to civilised man. In health and disease it forms his foremost nutriment. Thus by nature, habit, and custom humanity asks for bread and thrives on it, and when this article of food has been withheld or withdrawn from a person by famine, by high taxes, or by an over-zealous physician, that person might get along with other nourishment for a time, but will perish at the end from lack of proper food. The bodily constitution of civilised man demands some kind of breadstuff of which, it is true, it might be deprived temporarily and partially, but never for a long period or completely.

This fact has been recognized by some modern physiologists and observers, who do not object to bread in small quantities as a part of the diet in diabetes mellitus. The complete and sudden deprivation of the system of breadstuffs it has heretofore been accustomed to, undoubtedly produces more harm in a diabetic patient than a moderate use of that article of nutriment. (To stop wholly the saccharine supply is also not what is wanted, for were we to do so we would finally arrest every function of animal life.) Neither on its duration nor upon the percentage of sugar depends the severity of diabetes mellitus, but upon the general power of resistance of the body and the vitality of the non-affected organs; and the power of resistance and vitality must be sustained, even if an additional one-tenth of 1 per cent. of diabetic sugar may be demonstrated in the urine.

With the view of supplying properly adapted and suitable breadstuffs for diabetes the so-called "Diabetic Flours" have sprung into existence; and it is claimed that they are free, or nearly free, from carbohydrates. All these flours contain, however, large quantities of starch—from 30 per cent. to 70 per cent., as Purdy puts it. The widely advertised gluten flour of one health-food company, for instance, for which it is claimed that it is entirely free from starch, contains 66.18 per cent. of that article. It seems beyond our means at the present day to extract to a sufficient degree the carbohydrates of the marketable grains; in fact, if a complete extraction of the starchy principles of our grains could be accomplished, there would be very little left to make a satisfactory article of food. Bouchardat's gluten flour is obtained by washing wheat flour. It is evident that only small quantities of starch can be extracted by this process. A method of extracting the starch from bread was recommended by Liebig. Thin slices of bread were treated with an extract of malt to convert the starch into sugar, which could be dissolved out by maceration and washing. The bran-bread of Prout, which contains a great percentage of cellulose, has not proved to be a desirable food for diabetics on account of its indigestibility and of its irritative action on the mucous membranes of the intestinal canal. The Soya bread and the aleuronaunt bread of Ebstein have also been used in the dietetic treatment of diabetes without having achieved universal recognition and employment. The proportionally best substitute for wheat or rye to-day yet is the almond. Almond-bread was first introduced by Pavy. The Almonds having been ground into small pieces undergo a process of mace ration with acidulated water for the extraction of their sugar. If some butter and eggs be added to this almond-meal, a good-tasting bread can be baked, which, if not properly prepared, is very hard and oily, and not fit for digestion. Almonds, however, are very expensive, and this is one of the reasons that bread made from them is not more universally employed by diabetics.

A long time since I recognised the fact that a completely decarbohydrated meal at a price convenient to every one cannot be obtained from any of the cereals; that such a completely decarbohydrated meal is not essential, but is even a draw-back in a rational diet of the diabetic; and that a meal like that of the almonds, partially unoleid and with a small percentage of carbohydrates, at a mere nominal cost, is the desideratum. After a series of experiments I came to the conclusion that such a meal can be obtained from the peanut.

The peanut (*Arachis hypogæa*), also known as ground-pea, ground-nut, earth-nut, goober, and pindar, is an annual, growing from one to two feet high; it has the peculiar habit of wintering its fruit underground. It is not a nut at all in the true sense of the term, and should be with more propriety called ground-pea. After the fall of its flower the peduncle elongates and bends downward, pushing several inches into the ground, where the ovary at its extremity begins to enlarge and develops into a pale-yellowish, wrinkled, slightly curved pod, often contracted in the middle, and containing from one to three seeds. When fully grown the pods are from one to two inches long and of a yellowish colour.

More or less abundantly scattered over the roots of the peanut plant are warts of about the size of a pin head. These so-called tubercles are of great importance to the life of the plant. Within them, while in a fresh or growing state, immense numbers of minute organisms can be detected. These organisms live partly on the substance supplied from the roots, and at the same time they take from the air and elaborate for the use of the plant considerable quantities of nitrogen. In this manner a quantity of nitrogen is often acquired by the plant far in excess of the amount of that element contained in the neighbouring soil. The pea-

nut, though it has been cultivated for centuries in Eastern countries—in China, Japan, the East Indies, and Africa—seems to be a native of Brazil. Thus America, which gave to the world cotton, Indian corn, the potato, and tobacco, is also the home of an additional plant of commercial importance. The merits of the peanut, however, had been recognised much earlier in other parts of the globe than in its native country, and virtually only since 1866 has the crop become of importance in some parts of this country. Virginia, North Carolina, and Tennessee produce most of the peanut crop of the United States, which, on account of a wrong method of culture, is not so plentiful now-a-days as it has been in years past.

The most interesting point for us to consider is the chemio composition of the peanut. I abstain from giving the food-constituents of all the different parts of the peanut plant, the kernels being the only portion of the plant concerning us. We find in the Alabama peanut-kernel 10.88 per cent. of water, and in the water-free substance of the kernel 4.26 per cent. of ash, 35.37 per cent. of protein, 2.66 per cent. of fiber, 19.33 per cent. extract-free of nitrogen, 55.37 per cent. of fat, and 5.50 per cent. of nitrogen. The average of all available analyses of peanut-plants of different crops and different sections of the earth shows 29 per cent. of protein, 49 per cent. of fat, and 14 per cent. of carbohydrates in the dry material.

Peanut-meal (as known in commerce) is the remaining part (the residue) of the peanut after the oil has been extracted. The oil is extracted on a large scale in European countries and utilized as a substitute for olive-oil, for lubricating purposes, and in the manufacture of soap. The meal contains, as the averages of 2,000 analyses show, about 52 per cent. of protein, 8 per cent. of fat, and 27 per cent. of carbohydrates, and is therefore a most concentrated and valuable animal food. The peanut-meal, or peanut-cake, as it is commonly called, is of a quite agreeable taste, and not very hard to digest.

Following this is given a comparison made by Prof. König, based on the price in Germany of the following 12 principal foods reduced to "units of nutrition":—

COMPARISON OF THE NUTRITIVE VALUE AND COST OF TWELVE PRINCIPAL FOODS.

	Nutritive units per pound.	Cost per 1,000 units in cents.
Skimmed milk ...	98.20	10.4
Skimmed-milk cheese ...	870.00	11.0
Full milk ...	155.50	11.5
Bacon ...	1257.70	15.5
Butter ...	1186.30	20.4
Veal ...	525.90	22.2
Beef ...	530.90	26.0
Peas ...	778.60	4.2
Potatoes ...	138.20	5.1
Rye-flour ...	603.60	6.0
Rice ...	534.60	10.0
Peanut-meal... ..	1425.00	3.0

This shows that peanut-meal is the most nutritious and the cheapest of this list of foodstuffs.

Satisfied that the peanut is one of the most perfect, and, at the same time, one of the cheapest food-stuffs known to us, a food-stuff abundant in nitrogenous and fatty matter, but very deficient in carbohydrates, I began to utilize it with diabetic patients, and my method of preparing what I call the "diabetic peanut-flour" is a very simple and empiric one, and only destined to be employed domestically. I do not intend to give in the following a process of manufacture on a large scale: but, no doubt, if this peanut-flour should prove to be a permanent success in the dietetic treatment of diabetes, the proper means to obtain the flour in large quantities can be easily devised.

The peanut-kernels, including their inner coating, which is also nutritious and not very abundant in carbohydrates, are put in a tin kettle, into which small holes have been previously made. This is kept uncovered and placed on or into a pan filled with water, and this has to be kept boiling for about half-an-hour to allow partial extraction of the superfluous oil. After the kernels have been dried they are pounded into fine particles with the aid of a rolling-pin. The pounded or bruised kernels are then placed in boiling water acidulated to some degree with tartaric acid or vinegar, preferably with the latter. The boiling in the acidulated water has to be continued for some time for different reasons:

1. For the extraction of saccharine elements, occurring to some amount in nuts of American growth. (Peanut-flour naturally contains proportionally small quantities of saccharine principles, which have to remain to some extent in the flour for reasons given.)

2. To overcome the smell and taste characteristic of the peanut.

3. To prevent emulsification of the remaining oil, which, to some degree, is essential to a rational diabetic food, as fats must supply the deficiency of the carbohydrate elements. (An emulsifying process will otherwise take place immediately on the addition of water, as great quantities of albuminous matters are present.)

It is true that a partial emulsification of the oil might relieve the pancreatic juice of some work, and this might be especially beneficial in such grave cases of diabetes mellitus in which the pancreas seems to be involved. I leave it to future investigation to determine whether the oil in peanut-flour shall be introduced in its natural state into the alimentary tract or in the form of a partial or complete emulsion.

Having undergone a thorough boiling with acidulated water, the

ground kernels are subjected to dry heat, to effect complete evaporation of that fluid; but great care must be exercised that they do not become browned or roasted. An additional treatment with the rolling-pin will produce nearly as fine a flour as the common wheat-flour of commerce.

With apparatus such as the household furnishes a flour, such as the mills are capable of producing on a great scale cannot be expected to be produced. This is especially true with the hydrocarbonization (unrolling) of the flour. From 30 to 40 per cent. of the oil I deem necessary for a complete and rational diabetic food. More hydrocarbons are not required and would interfere with digestion. It is not possible to control the unrolling by the described domestic process and to determine with any degree of certainty the percentage of oil extracted; if the flour is manufactured by mills, however, this could be readily controlled and ascertained. The most simple process of extracting the oil, when manufacturing the flour on a large scale, is by pressure, either by the employment of the cold or the warm process; the pressure can be so regulated as to extract just the amount of oil that is not wanted.

I have made use of the flour in different ways, the most simple of which is in the form of a porridge, some milk being added to it. Bread and biscuits can also be baked from it, but the nicest and most easily digestible form in which to utilize it is, I think, the German pancake. Every housekeeper understands how to make the latter, and a tasty and always fresh piece of pastry can therefore be produced on short notice.

I have used this flour with four diabetic, and a number of other patients of mine. In the non-diabetic cases, mostly tuberculous in character, I obtained satisfactory results, inasmuch as digestion was not to any extent taxed, and in some cases the weight of the patient did not decrease, while in one instance there was actual gain in weight noticed.

The first diabetic patient to whom I recommended the flour was also the first person whom I know to have made use of it. Right at the outset it turned out to be a complete failure, as the digestion became very much impaired, thereby aggravating the general condition of the patient, an old man. A more careful and rational preparation of the flour, however, and the employment of smaller quantities when starting with it, increased its digestibility, and to-day this patient enjoys, as far as circumstances permit, a comfortable state of health. The other three patients also thrive well on this flour, the German pancake being the usual form in which they employ it. In conjunction with eatables made of this flour, I allowed those patients only such foodstuffs as are generally recognised as permissible in diabetes mellitus. I have done this, not because I am a believer in the complete exclusion of carbohydrates in diabetes, which I am not (fats and even nitrogenous substances are capable of producing glycogen), but to investigate the intrinsic value of peanut-flour as a food, and its ability to reduce the glyco-genic sugar of the urine. In the last point, however, my researches only began at a late date, and practical results I cannot offer to-day.

ADULTERATION PROSECUTIONS.

MILK.

THE DEFIANCE DAIRY COMPANY'S MILK.

At Kensington Petty Sessions, Thomas Croxford, of Keppel-street, Chelsea, a servant in the employ of the Defiance Dairy Company, was summoned at the instance of the Kensington Vestry for selling adulterated milk; the defendant did not answer the summons.

Sergeant Kemp, the court officer, said he served the summons on the manager to the company, at Grove-road, Bow. The manager said he knew Croxford.

Sanitary-inspector Grant, in the service of the Chelsea Vestry, said that body had had a great deal of trouble with the defendant company, whose servants were moved from place to place.

The Chairman ruled that they must confine themselves to the present case.

Richard Willis, a boy, swore that at the instance of Mr. Ellenden, an inspector under the vestry, he purchased a pint of milk, for which a sum of one penny was charged.

Arthur Ellenden, an inspector under the Sale of Food and Drugs Act, said that from numerous complaints concerning the defendant, whose men went about calling "pure farm milk," he instructed the lad Willis to make a purchase while he (the inspector) waited behind a door. After the purchase was made the defendant pushed on his barrow about 30 yards. On examining the barrow a label bearing the words "pure separated milk" was discovered.

In reply to the Chairman, the inspector said that he believed the label had been stuck on the barrow quite recently, and in answer to Mr. Douglas Gordon, he stated that the label was only four inches in length. The man in charge of the barrow said he did not wish to be fined another £30. Witness had to obtain the assistance of the police in getting the address of the defendants.

The Chairman: I think we have had this man here before.

Mr. Stephens: Oh, yes; several times.

The Bench said this was a very bad case, and inflicted a fine of £20, with costs.

At the same court, William Fredericks, of Twickenham, was summoned for selling milk adulterated to the extent of 50 per cent.

A lad employed by Inspector Ellenden swore to hearing the defendant crying "pure milk threepence a quart." On the arrival of the inspector the defendant said, "You think you have got me again."

Mr. Stephens said the bench would remember that the defendant was before them in April last, when he was fined five guineas and costs, or seven days.

In reply to the Chairman, Sergeant Kemp said the defendant suffered the seven days' imprisonment.

The Chairman said the case was a very bad one, and the defendant would be fined £10 and costs.

ERNEST CLARKE of Cross-road, Fulham, was summoned on two charges for selling "pure country milk" which, on an analysis being taken, was proved to be adulterated.

It was sworn by a lad named Peach, who made the purchase at the instance of the inspector, that the defendant used bad language, saying he had a good mind to throw the — bottle at the head of witness.

Sergeant Kemp proved having served the summons on a lodger at the address given, but the defendant had removed all his furniture.

The defendant said that this could not be regarded as his last known place of abode, but on the application of Mr. Stephens, the bench adjourned the summons *sine die*.

The bench then adjourned until September.

At the Saffron Walden Borough Petty Sessions on August 10, before Edward Taylor, Esq. (Mayor), E. B. Gibson, and J. J. Robson, Esqrs., Joseph Lagden, farmer, Saffron Walden, was charged with selling to the purchaser milk, containing 11 per cent. of water, at Saffron Walden. Sergt. Howlett, Inspector under the Act, stated that he went to the Union on the morning in question, where the defendant's man was delivering milk. He took a sample of same, and had it analysed, and the certificate produced showed that an eleventh part of the 100 was water. Fined 20s. and 8s. costs.

At Watford, on Aug 6, James William Money, of Watford, was summoned for selling a pint of milk which had added to it 10 per cent. of water. Defendant pleaded not guilty.—William Grasswell Rushworth, Inspector of Weights and Measures, stated that on July 25, about 8 45 a.m., he saw a servant of the defendant delivering milk in Callow Land. Witness purchased a pint of new milk from him for which he paid 2d., the usual price. Witness told him he had purchased it for the purpose of having it analysed, and divided it into three parts. One he left with the defendant's servant, and one he sent to the analyst, and the other he produced. He also produced the analyst's certificate in which it was stated that there was added water 10 per cent. Witness afterwards saw the defendant and he stated that it was the over-night's milk, and some cream had been taken off. In answer to witness defendant stated that he would not say that water had not been added.—Defendant stated that he was short of milk and had to buy some every night, and the milk which Mr. Rushworth had was the over-night's milk. He denied stating to Mr. Rushworth that water had been added.—The Chairman said in that case there was virtually no defence. The only excuse was that it was the over-night's milk. It appeared to the Bench that it was a very bad case indeed. As the defendant had been fined £5 for a similar offence last year, he would be fined £6 including costs—(applause in court).

BEFORE the Chesterfield County Bench on August 10, John Brassington, milk seller, of Whittington, was summoned for selling new milk deprived of 20 per cent. of its natural fat.—Col. Shortt, Inspector under the Food and Drugs Act, prosecuted, and Mr. White, analyst, of Derby, stated that there had been an admixture of separated milk.—Fined 2s. 6d. and costs.—Henry Ward, of the same place, was summoned for a like offence, the milk in his case having been deprived of 33 per cent. of its fat, and also for selling skimmed milk which contained 7 per cent. of added water.—Fined 1s. and costs in each instance—30s. in all.

SPIRITS.

At Derby, on August 9th, Wm. Astle, landlord of the Royal Standard, Derwent-street, was summoned by Inspector Wilkinson (inspector under the Food and Drugs Act) for selling adulterated brandy, on July 26. Mr. R. J. Fittall appeared to prosecute on behalf of the Town Clerk. The sample of brandy purchased by Mr. Wilkinson was analysed and found to contain 93.7 parts of brandy 25 degrees under proof, and 6.3 parts of added water. Defendant, who said that his brandy barrel leaked, was fined 5s. and costs.—John Sherwin, Market Tavern, was summoned for selling adulterated whisky on the same date. In this case, the spirit contained 95.9 parts of whisky 25 degrees under proof, and 5.1 parts of added water. Defendant said that the keg was nearly empty, and the deficiency was due to evaporation. Fined 5s. and cost.—Jos. Henry Cotton, landlord of the White Bear Inn, Derwent-row, was summoned for selling adulterated whisky, on July 26. The sample contained 90.5 parts of whisky 25 degrees under proof, and 9.5 of added water. He was fined 5s. and costs.—Thomas Johnson was summoned for selling adulterated gin, on July 26. The defendant keeps the Market Hotel, Meadow-road, and the gin,

on being analysed, was found to contain 4.1 parts of added water. He was fined 5s. and costs.—John Harrison Bennett, of the Exeter Arms, Exeter-place, was summoned for a similar offence on the same date. In this case the gin was 39 degrees under proof. It consisted of 93.9 parts of gin, and 6.1 of added water. A fine of 5s. and costs was ordered.—John Wright, of the Hare and Hounds Inn, was summoned for a similar offence on the same date. In this case the gin was 35 degrees under proof. It consisted of 77.8 parts of gin, and 22.2 parts of added water. A fine of 10s. and costs was imposed.—William Turner, of the Railway Hotel, Nottingham-road, was summoned for selling brandy which had mixed with it 7.5 parts of added water. He was fined 5s. and costs.

At Nottingham, on August 10, Anthony Fitzpatrick, of Greasley, did not appear in answer to a summons charging him under the Food and Drugs Act with selling gin and whisky which were alleged to be adulterated. Mr. E. Williams, who appeared for the defendant, stated that his chief witness, Mrs. Fitzpatrick, had been very excited over the case, and had on Friday burst a blood-vessel. Under the circumstances the case was adjourned for a month.

At Shipston-on-Stour Petty Sessions James Henry Shepherd, of the White Horse Hotel, Shipston, was summoned for selling whisky which was 29 degrees under proof. Defendant pleaded not guilty.—P.C. Milsom, stationed at Evesham, said that on the day in question he went into defendant's house, and asked for one pint of Scotch whisky, for which he paid 2s. 6d. The whisky was served by Mrs. George Shepherd.—Inspector Critchley said he followed the last witness into the White Horse, and told the defendant that the whisky was for analysis, and divided it into three parts, one of which he gave defendant, one he kept himself, and he sent one to Dr. Swete, the public analyst, whose certificate he produced. The whisky was 29 degrees below proof, four more than was allowed.—Defendant said that the whisky had only been diluted to the standard allowed.—The Bench said they must convict, and fined defendant £2 and 7s. 6d. costs.

At Ringwood Police Court, Frederick Pilley, landlord of the New Inn, was summoned for selling adulterated brandy at Ringwood on the 14th June last.—Mr. P. E. L. Budge, of Poole, solicitor to the Licensed Victuallers' Association, defended. Agnes Healey, of Winchester, deposed that on the day in question she visited defendant's house and asked for a pint of brandy. Witness was served by the barmaid, who stated that they had no foreign brandy, and only British brandy. Witness paid 4s. for the pint and handed it over to Detective-Sergeant Bowles, of the Hants County Constabulary.—In cross-examination by Mr. Budge, witness said that from instructions received she particularly noticed that there was no notice in the bar as to spirits being diluted.—Detective-Sergeant Bowles deposed to having received the brandy in question from witness; he forwarded a sample to the county analyst. He now produced the analyst's certificate, which showed the spirit was adulterated, being a mixture of 92 parts of brandy with 8 parts of water.—Defendant was fined £1 and £1 17s. costs.

At Farnham, on July 25, James Stewart was summoned for selling half-a-pint of brandy, 29½ per cent. under proof at York Town on June 29th. Mr. Cliffe, inspector to the Surrey County Council, prosecuted, and Mr. E. Jackson defended.—Mr. Cliffe put in the analyst's report. The adulteration allowed by law was 25, and this brandy was pronounced 4½ per cent. below that allowance.—Cross-examined: He did not see the notice to the effect that the spirits sold were diluted in compliance with the Food and Drugs Act.—Mr. E. Jackson drew attention to a decided case, in which it was held that the notice exonerated the publican from responsibility.—Mr. Cliffe referred to two later cases as having a contrary effect, viz., that the publican was not exonerated. The case was adjourned for a fortnight to enable Mr. Cliffe to produce the decisions.

BAKERS AND ROTTEN CONDENSED MILK.

At the Lambeth Police-court, on August 8th, Thomas Thumwood and Frederick Maynard, of Clupham-road, were summoned by Mr. H. T. Wiggs, on behalf of the Lambeth Vestry, for depositing on their premises for the purpose of preparation for sale five cases of condensed milk, the same being unfit for food. Mr. W. H. Armstrong represented the defendants. Mr. H. Treherne Wiggs, a sanitary inspector appointed by the Lambeth Vestry, stated that on the afternoon of July 23 he visited the premises of the defendants, who are bakers and pastrycooks. In the bakehouse, on a bench, he saw several tins of condensed milk. They had a very damaged appearance, and witness asked the defendant Maynard, who was present at the time, whether they were being used. He replied, "Yes." Witness had two or three of the tins opened, and found the milk in a very bad, decomposed state. Witness remarked, "Those are not fit to be used." Mr. Maynard then said, "I have picked these out from the cases, and these will be thrown into the dustbin." Witness went to a store at the rear of the premises, and there saw some cases of milk. He had two or three of the tins opened, and found them to be in a very decomposed state. Witness asked Mr. Maynard whether he thought the milk was fit for use? Mr. Maynard thereupon took up a piece of pastry and held it up for witness to smell, and exclaimed, "Oh, it all goes off in the baking." Witness seized the whole of the

cases and had each tin examined separately. Only seventeen tins proved to be good, and they were returned to the defendants. Cross-examined: Mr. Maynard said he bought the mild as a job lot some time ago, and that the men had instructions to sort out the good and to throw away the bad. Other evidence having been given, Mr. De Rutzen remarked that he considered the case proved, and fined each defendant £10 and costs.

COCOA.

ON August 8, Mary Brandenburg, 136, Cannon-street-road, was summoned by James Wornton, sanitary inspector for St. George's-in-the-East, for selling cocoa adulterated to the extent of 80 per cent. with starch and sugar.—Mr. Stern, who prosecuted for the St. George's Guardians, said he understood that defendant would plead guilty. The shop was a very poor one, and was chiefly patronised by Polish Jews.—Mr. Mead fined her 25s. and costs.

CHESTER COUNTY COUNCIL AND ADULTERATION.

THE County Analyst's report for the quarter stated that he had analysed 209 samples, consisting of 64 milks, 35 spirits, 33 butters, 11 lards, 7 gingers, 5 coffees, 3 baking powders, 3 peppers, 2 oat-meals, 2 yeast, 1 corn flour, 1 arrowroot, 1 port, 1 sherry, 1 jam, 1 green peas, 1 cheese, 1 vinegar, 1 cream of tartar, 1 precipitated sulphur, and 34 waters. Of these 10 samples were adulterated, consisting of 7 milks, 1 rum, 1 butter, and 1 yeast. The 7 milks were adulterated with water, varying from 3 to 10 per cent., and some were robbed of their cream by the addition of separated milk. In the Hyde division, a large manufacturing centre, the number of adulterated samples was 50 per cent., whereas in the Altrincham division the number was practically nil. Nine of the 64 samples of milk were very poor, and if a first-class standard had been taken they would have been returned adulterated. The yeast contained about 3 per cent. of starch. This may have been due to accident, and, therefore, this sample was passed. The butter contained 85 per cent. of foreign fat. One sample of butter was labelled and sold as margarine, but, on analysis, it was found to be a very good sample of butter. This may have been purposely done so as to delude the inspector. Special attention has been paid to spirits this quarter, as it was thought that whisky was very largely adulterated with methylated spirits. But not in one instance has such an adulteration been found. The quality of the alcohol varied very much in the different samples, leading one to suspect that a liberal quantity of silent spirit had been used in the manufacture of these whiskies, but as the spirits were all up to full strength and over, with the exception of one sample of rum, which was 29 degrees under proof, they were passed as pure. The baking powders were free from alum, and the sample of green peas free from copper. The adulteration this quarter has been very trivial, and, with the exception of the milk samples, one might almost say that the adulteration was nil. Total number of samples analysed during the quarter, 209.

THE PASSING OF UNSOUND MEAT IN EDINBORO'.

A PETITION was presented before Bailie Sloan in Edinburgh City Police-court, on August 7, at the instance of the Public Prosecutor for the destruction of the carcase of a cow weighing 644lb., belonging to Elizabeth Cowan, residing in High-street, Portobello, which, being diseased and unfit for human food, had been seized in the slaughter-house at Ponton-street, Edinburgh. The case having been delayed in order to hear the evidence of the veterinary surgeon who gave a certificate in Portobello certifying the carcase to be fit for human consumption, that gentleman, Mr. Davis, was put into the witness-box. He stated that he was sent for to Portobello to give an opinion, along with the Sanitary Inspector there, as to the carcase of a cow. It was killed because it could not get up. It belonged to a most respectable man in Portobello, Mr. Cowan. It was quite a common occurrence among big milking cows that they sometimes got paralysis. The cow had been a very deep milker, and within two or three days of being killed was milking. The owner had her killed in broad daylight, and she was hung up in the slaughter-house. Next morning along the back the flesh looked dark, so before it was sent to Edinburgh he examined it. Although it was lean, he granted the certificate certifying it to be sound. All the organs were perfectly healthy. Asked if he was satisfied in his own mind that that was the same cow as was seized in Edinburgh. Witness—Perfectly. The owner admits it. Dr. Herbert Littlejohn, examined previously, said the carcase was that of an old cow. There was hardly a particle of fat about it. He had no hesitation in saying it was unfit for human consumption. Mr. G. A. Thomson, one of the assistant inspectors of markets, stated that he saw the carcase on a lorry in Ponton-street. He was very much struck that a veterinary surgeon should have passed it. It was very wet and emaciated. The reason that he seized it was that it was emaciated and dropsical and unfit for human food. Bailie Sloan pronounced an order for the destruction of the carcase.

THE FOOD AND DRUGS ACT IN GARRICKFERGUS.

At Carrickfergus Petty Sessions, Sergeant Phillips, R.I.C., inspector under the Food and Drugs Act, summoned Mr. Robert

Cambridge (of Messrs. Cambridge and Co.) for selling linseed meal which was not of the nature, substance and quality demanded. Mr. W. H. Arbuthnot, solicitor, appeared for the defendant. Complainant deposed that he purchased $\frac{1}{2}$ lb. of linseed meal in defendant's premises and sent a portion of it to the County Analyst, who certified that it contained spurious matter. The defendant, in reply to Mr. Arbuthnot, said complainant was told when he asked for the article that defendant had no linseed meal, and was supplied with linseed flour from a canister, on which was a label bearing the name of the article. Notwithstanding this, complainant labelled the article linseed meal. Defendant produced the invoice from the firm which supplied the linseed flour. He did not keep linseed meal, and did not believe that such a thing was manufactured. The case was dismissed.

The same defendant was summoned by Sergeant Phillips for having a quantity of whisky for sale on his licensed premises which was adulterated. The certificate of the analyst was put in, from which it appeared that the whisky was six degrees under the proper standard. Defendant in reply to Mr. Arbuthnot said the whisky which complainant got was out of a bottle of washings of a barrel and was kept for reducing whisky which was overproof. Complainant insisted on getting it, although he was told it was not good. The Bench held that defendant should not have kept the adulterated whisky in the shop, and imposed a fine of 20s. and costs.

KESTEVEN COUNTY COUNCIL AND THE FOOD AND DRUGS ACTS.

ANALYSIS.

MR. C. E. CASSAL, the public analyst, reported the receipt during the quarter of 20 samples of food, 19 of which were genuine, and one (of whisky) was adulterated. The vendor was summoned and fined 10s. and costs.

WEST BROMWICH AND THE FOOD AND DRUGS ACT.

IN the report submitted by the public analyst and inspector of food and drugs for the quarter ending June 30, it was shown that 38 samples had been taken, four of which were found to be adulterated. In three of the latter cases proceedings were taken and convictions obtained.

THE HUDDERSFIELD SEWAGE PURIFICATION WORKS.

"THE Sewage Purification Works at Huddersfield," says *The Surveyor*, "are well worth a visit, and it would be of much advantage if a district meeting of the Association of Municipal and County Engineers could be held in this town at an early date. The purification of about five million gallons of sewage is daily effected by the 'International' purification process (ferozone and polarite), and the works are the most complete of their kind in the world. The sewage dealt with is very troublesome, owing to the peculiarity of the manufacturing wastes and the constant changes in its chemical character, but at these works, which are models of construction, and even of beauty, the sewage is most effectively treated, and the effluent is perfectly pure and wholesome."

HORSE FLESH AS HUMAN FOOD.

THE EXPORT FROM GLASGOW.

IN the course of his report for the year 1894, Mr. Peter Fyfe, sanitary inspector of Glasgow, says:—"In connection with the Sale of Horse Flesh Act, I have to report that, so far as I am aware, no horse flesh is sold for human food in Glasgow, and no one has applied for a license to so sell horse flesh. The two knackereries in the city continue to send the flesh of the healthy horses slaughtered to Antwerp *via* Leith. It is shipped thither in casks or barrels, each shipment from one knackery weighing about 30 cwts. What becomes of this flesh upon its landing at Antwerp has not been ascertained, but there is little doubt that it is manipulated there and sold as human food. The inspection of these carcasses at the knackereries is conducted by veterinary surgeons employed by the respective knackerers. I have no means of ascertaining how many horses are killed yearly at each, nor how many are condemned by the veterinary surgeons as diseased, unwholesome, and unfit for human food. It will give satisfaction to know that, generally speaking, the horses purchased for the business are of the healthy though worn-out class, the exceptions consisting of young animals which have met with accidents so serious as to disable them from further work of any kind. The slaughtering is carried out in a careful, cleanly manner, and the meat is tidily cut, dressed, and salted, ready for packing. I sent a sample of horse flesh for analysis to one of the city analysts, Mr. R. Tatlock, and he reports as follows:—"I have now completed the tests for horse flesh, and made a comparison with beef, mutton, and pork. The test proposed by M. Humbert, which is simply a modification of other tests, works very well, and shows the presence of horse flesh quite distinctly in the presence of beef, mutton, or pork, which do not answer to the test. It is thus easy to tell when horse flesh is present in a mixture of the four kinds of meat, or to distinguish it from the other three, when we have pure meat to deal with." It will thus be seen that we are in a position to be materially assisted by the chemist if this class of meat were at any time sought to be palmed off on the public mixed with flesh in ordinary use.

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Food and Sanitation.

SATURDAY, AUGUST 24TH, 1895.

SHEDDING LIGHT ON THE FRAUDULENT SPIRIT TRADE.

A BOOK written by William Bailey Bryant gives a few interesting revelations of the swindles practised on

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consumers of intoxicants. In his preface Mr. Bryant says:—"Thousands have acquired wealth from a knowledge of this business, and have passed from the stage of action without leaving to the world the marks of their progress and improvements." This reluctance on the part of wealthy factors of factitious liquors, says the *Pharmaceutical Era*, to let the world into their secrets is perhaps unfortunate, but it is evidently due to a certain delicacy on their part which impels them to refrain from publishing the fact that their products are fraudulent concoctions. It is barely possible, however, that our author is a cleverly-disguised temperance advocate, for if his formulas have been "employed by all the most extensive manufacturing establishments of Europe," a reading of them ought to cure the most aggravated case of the drink habit. This idea seems to find support from the following: "But few of the dram-drinking masses acquainted with the *modus operandi* of a business which affects, to no inconsiderable extent, both health and wealth, and that their own ignorance has often tested the strength of their constitutions through the medium of 'A pure old Article,' or 'A choice old Brand,' and hence, the obvious necessity of a work upon this subject will not be denied, thus removing many popular errors regarding the production of liquors; and the dissemination of such knowledge would crush the stupidity of manufacturers, and articles of spirit so often found in commerce, containing deleterious adulterations, would disappear, which would strip intemperance of many of its attendant calamities."

We confess that this sentence is too long for us to grapple with as a whole, but we think it means that people would stop drinking if they knew something about the composition of many of the liquors upon the market. We do not insist upon this interpretation, as there may be several others. The formulas, however, are quite plain. We are told how to conceal the odour and taste of fusel oil by the use of aromatics, etc., and are cautioned against the use of adulterated (?) ethers in adulterating the liquors which we desire to make. These ethers "when found at the druggist's are usually sold for an advance of one hundred per cent.; this is partly owing to the cupidity of the dealers, and the expense incident to the transportation of the article." Irish and Scotch whisky can be made from common

whisky by the addition of grains of paradise, pellitory, creasote, catechu, etc., and they "should always be put up in the same packages that the genuine was imported in." The book is full of comments of the same ingenuous character, and we are told how to make old barrels look like new and *vice versa*, and how to brand and paint them to convey a certain impression. Red wine can be made of water, sulphuric acid, honey, alum, red beets, logwood, oil wintergreen, and grains of paradise. As honey is the only article in the formula of value, we are informed that any bright sugar or syrup will answer in its place. We are also told that "a very fine champagne is prepared from fermented turnips and radishes, but nothing superior to some other formulas." In the matter of syrups we are told that, "like every other commodity in commerce, they should be manufactured to suit the views of all grades of purchasers."

While sufficient details are given to meet the requirements of all grades of depravity, the author evidently forgot to caution his readers to carry on the practices which he suggests in a cellar with the aid of a dark lantern, but perhaps such precautionary measures will suggest themselves to those who have a leaning toward the preparation of fraudulent liquors.

A PLEA FOR HORSE-FLESH AS FOOD.

THE Editor of the *Medical News* in a recent issue says:—"It is an ill wind that blows nobody good, and the late appalling fall in the price of horses, due to the introduction of the electric trolley and the bicycle, has turned the attention of our thrifty farmers to the question of the utilization of horse-flesh as an article of diet. None of them seems at all desirous to make the experiment himself, but they fail to see why it should not form an excellent and healthful food for somebody else. In fact the project has been seriously considered just lately of shipping horses on the hoof to Germany, where they are sufficiently enlightened to have no prejudice against this luxury. According to Secretary Morton, nearly 10,000 horses are slaughtered every year in Germany alone for food purposes, a large proportion being used in the production of their favourite 'horse-sausage.' The average price paid by the butchers is about 35dols. a head, which would yield quite a good profit to the shippers.

"Now why should we not do likewise and save the poor ponies all the horrors of sea-sickness and transportation. We copy Germany as nearly as we can in pathologic matters already. Why not also in dietetic customs? The only obstacle is mere popular prejudice against eating horse-meat. We might succeed in introducing a little of the sausage, because we are already accustomed to the use of man's next nearest four-footed companion, the dog, in that form, but as to colt-steaks and mare-cutlets there would be difficulty.

"Seriously, however, why should we not add horse-flesh to our bill of fare? There is absolutely no physiologic or hygienic reason why it should not be as nutritious, healthful, and palatable a food as the flesh of the ox or the sheep. Indeed, there is abundance of evidence from all climes that it is the equal of beef and mutton in all three of these respects. The Tartar hordes of the Siberian steppes depend on their horses almost entirely for meat as well as milk and clothing, as also did the Scythians of antiquity. In war and in times of scarcity horse-flesh has been used hundreds of times and with most satisfactory results. During the last siege of Paris, for instance, thousands of horses were consumed, and the meat was found so palatable that dozens of butcher-shops still do a large trade in it—a trade that is steadily increasing, especially among the labouring classes. The meat is said to be almost indistinguishable from beef, though of finer grain and more marked flavour. This is extremely favourable when we remember that most of the animals killed have been such as through age or

injury were incapacitated for hard work. Curiously enough, mule-beef is said to be still juicier and better flavoured. In fact, the only objection that can be raised is on the score of expense, and that has now been completely removed, as many horse-raisers would be glad to get good 'beef-prices' for all but their choicer stock.

"Besides being a valuable addition to the variety of our flesh-foods, in the light of recent bacteriologic developments there would be another advantage that might make the use of horse-meat of great importance to the community. This is the almost complete immunity of the horse to tuberculosis. If, in addition, a breed of horses could be developed with special reference to their milking-powers—equine Jerseys, as it were—and their milk substituted for that pernicious extract of tuberculous bovines that at present fills our nursing bottles and milk pitchers, what a threatening shadow would be lifted from our national future! By all means let us urge horse-flesh and mare's milk upon our patients if only to relieve the anxiety of our bacteriologic friends and save the babies from sterilized milk. Of course, from a purely scientific point of view, they had better starve on that than grow fat on tuberculous lacteal fluid, but mothers and even doctors cannot see it so. Indeed, mare's milk should be a sure prophylactic against 'mare's nests' of all kinds."

TRYING TO STOP THE BEER SWINDLE.

LORD WINCHILSEA presided, on Aug. 14, at a meeting of Members of Parliament who favour the programme of the National Agricultural Union. The outcome of the deliberations led, amongst other things, to the adoption of the following resolution:—"Another measure we would press most strongly upon the Chancellor of the Exchequer, because we think it may have a more direct and immediate effect upon farmers' profits than any to which we have already alluded, is such an alteration of the beer duty as would encourage the brewing of beer from English barley, malt, and hops, including the repeal of clauses 12 and 13 of the Beer Duty Act, which penalise the use of second-class barleys. If this were done, and if the name of beer were restricted by law to liquor brewed from barley, malt, and hops, in this way, without extra cost to the consumer, the farmer might feel secure of one crop at least which it would pay him to grow, while it is probable that both the public health and the cause of temperance would be benefited as well."

With the exception of the shortsighted nonsense about second-class barley, this resolution is worthy of commendation; but whether pure beer advocates have calculated the host against which they fight, and are prepared to go for the supporters of the swindle, however highly placed they may be, is a matter on which we entertain some doubts, for the beer swindle has the support of the biggest Burton supposed brewers of pure beer, who have long practised and profited by it. The Somerset House chemists, who may be said to be its real founders, and to have inflicted by their ignorance this terrible damage to English agriculture, and the permanent gang of Government officials who stuffed Sir William Harcourt with so much folly about the purity of beer, possess some *amour propre* if they are devoid of brains or patriotism; and it will require a very strong man to brush them and their ruinous folly aside. Add to this the enormous influence the brewers have exercised in securing for the Government its large majority, and it is easy to calculate the chances pure beer has. Frankly speaking, we expect nothing from the action of Lord Winchilsea and his union. The only union that will benefit the farmers of England is one that will avoid party curse, Tory or Liberal blatherumskite alike, and go for agricultural questions as Parnell's battalion went for Irish ones; for politics is a question of votes, not of principles, and Lord Salisbury and Mr. Chamberlain care for the

industrial welfare of England just as much or as little as did Sir William Harcourt and Mr. Gladstone. A distinguished admiral who tried to reform the Admiralty had to own his defeat by saying, "the very walls of the building were filled with corruption." It is not this or that bombastic Minister who rules England—it is the idle ignoramus who are the heads of the various circumlocution offices. They can make a Minister's office easy or the reverse, and Mr. Gladstone's thievery-fostering abolition of the malt tax was a case in point illustrative of their idleness. The Bill was passed solely that the Government officials might have less work to do. It would require a very strong man indeed to break through the permanent official gang, and that strong man is not in the present Ministry.

SPURIOUS HUNGARIAN WINES.

A FIRM in Prague have, for a considerable period, been selling essences for the manufacture of spurious wine, and, although the Hungarian Government in 1893 passed a law prohibiting the sale or the manufacture of artificial wines, the Prague imitation wine essence makers have still pursued the traffic. The Minister of Commerce, acting in conjunction with the Minister of Agriculture, has at last forbidden the post office, the railway, and the steamship companies from delivering or accepting for transit any more of the spurious wine concoctions, and the Austrian Government has been asked to act in concert with the Hungarian authorities in suppressing the traffic. Such is Hungary; but in England the sale of chemical swipes as beer and whisky goes on unchecked, whilst ignorant Ministers and Somerset House chemists encourage the swindling traffic and assist brewer and distiller to defraud the public. Not content with this, the vendor of spurious spirits can get the price of spirits for water if he avails himself of the notice dodge. No wonder, therefore, brewers and distillers are rich beyond the dreams of avarice. But then Hungarians are only foreigners, and not so civilised as is the deluded and plundered Briton.

HANTS COUNTY COUNCIL AND SOMERSET HOUSE

Mr. J. G. Wood had given notice to ask the Chairman of the Standing Joint Committee whether it has been brought to his notice that in a recent trial of a case at the Alton Petty Sessions, a substance having been submitted for analysis to the county analyst, his analysis was diametrically opposed to the analysis of the same substance when sent to Somerset House, and, if so, whether it is proposed to take any action in the matter. He stated that it would be as well to explain what lead him to ask the question. At the beginning of last month a case was brought before the Alton Petty Sessions of the adulteration of an article called self-raising flour. The prosecution put in a certificate from the county analyst, stating that there was 1.09 per cent. of alum in the substance. The manufacturer of the article was present, and requested that another portion of the sample should be sent for analysis to Somerset House. This was agreed to, and at a subsequent bench the analysis from Somerset House was laid before them, certifying that the sample was free from alum. On that, of course, they dismissed the case, and allowed the defendant his costs. What he wished was that the whole question of the analyst should be considered, because it was most inconvenient to the public to feel that they might be brought up on an analysis which was quite wrong, and the justices would feel very disinclined to convict on the certificate of the analyst only after having such a case as this before them. He did not say who was right and who was wrong, but it was clear someone was wrong, and he therefore asked the question of which he had given notice.

Mr. Nicholson said they had a precisely similar case at Petersfield on the 24th July. A baker in the town was summoned for selling adulterated bread made from self-raising flour. The certificate of the analyst sent to them as evidence was, that he was of opinion that the sample contained 2 per cent. of alum, and that it was a form of adulteration calculated to prejudice health. The analyst did not appear, having gone to another place, and therefore an adjournment was applied for. The case was adjourned *sine die* to get up evidence; but in the meantime they sent the sample taken by the police to Somerset House, and they certified that the sample was free from alum, and contained only traces of alumina not greater in amount than contained in genuine flour. In cases like that, with such conflicting evidence, it was impossible to adjudicate, and something ought to be done with regard to these adulteration prosecutions.

Mr. Simonds said his attention was not called to the matter until he had notice of the question, and since he had made it his business

to read the Acts. It was a most unsatisfactory state of things, no doubt, but it was rather premature to express a decided opinion for or against their analyst, and he thought the most convenient course would be to request the General Purposes Committee to examine fully into the matter of the appointment and duties of the analyst. (Hear, hear.) Why he thought it would be inconvenient to express a decided opinion was because he happened to pick up the *County Council Times* that day, and he saw in Cornwall they had had something of the same kind happen. It was mentioned that the system of analysis adopted at Somerset House was very imperfect, and that the attention of Parliament should be called to the matter. (Laughter.) Therefore, he said it would be somewhat premature to give judgment on the matter, but it was a right thing that it should have the consideration of the Committee, and he therefore proposed that the matter should be referred to the General Purposes Committee. He had spoken to the chairman of that committee (Colonel Grimston), and they would undertake to look into the matter.

Mr. Jeffreys, M.P., stated that he should like to say that he served on the committee of the House of Commons last Session to inquire into the matter of adulteration, and they decided that the way analyses were conducted was not satisfactory. He should not like their analyst to bear opprobrium, because analysts differed, and he hoped the police would not be discouraged from getting samples because of the feeling that it was no use, as convictions were not obtained.

The proposition to refer the matter to the General Purposes Committee was then agreed to.

THE GOSPORT COCOA CASE.

Mr. Treacher asked the amount of the costs in the Gosport cocoa cases?

Mr. Simonds replied that they came to £66 15s. 8d. altogether.

Mr. Treacher.—That is a great deal too much for a failure.

Mr. Simonds.—I think it is a large sum of money.

The Deputy-Chairman pointed out that they had no control over the Standing Joint Committee, except to elect their share of the members.

Admiral Field, M.P., said they wanted to know the total cost incurred in carrying the case through to the Court of Queen's Bench? He thought it was over £100.

Mr. Simonds—I don't think so.

The Deputy-Chairman said they had heard from the Chairman of the Standing Joint Committee, and that should be sufficient for them. They had the broad statement, and it was competent to go into every item.

Mr. Treacher asked a question with regard to the wholesale discharge of police at Oosham? and

Mr. Simonds stated that the discipline of the force, and taking on and discharging men, was a matter for the Chief Constable, and the committee would not take further steps in the question.

THE IRISH BACON TRADE.

At Dublin, on Aug. 6, Messrs. Williams and Co., 36, Thomas-street, were summoned by Mr. J. Moore, inspector to the Bacon Curers' Association, for having sold six and a-half pounds of ham, to which a false trade description was applied—namely, that the said ham was Irish-cured ham. There was a second count that defendant sold to Mr. Moore six and a-half pounds of ham to which a false description was applied—viz., that it was mild-cured Dublin. Mr. Thomas O'Shaughnessy, Q.C. (instructed by Mr. J. A. Blake, solicitor, of Messrs. Sutton and Son, and Mr. Fisher, of Holborn-viaduct, solicitor to the Association), appeared for Mr. John Moore. Mr. Ennis (instructed by Messrs. Ennis and Son), appeared for the defendants.—Mr. John Moore deposed that on June 6, accompanied by Constable John Hickie, 135A, he went to the shop of Williams and Co. (Limited), 36, Thomas-street. He saw a number of hams exposed for sale hanging against a post in the shop opposite the door, visible from the street, branded by a hot iron "Williams & Co.: mild cure, Dublin." There were letters also which were not very plain. Witness asked one of the salesmen of the department the price per pound, and the salesman said 6½d. Witness said he would take it, and he put it on the scales, and weighed it. Witness laid down the money to pay for it, when another young man came and held a whispering conversation with him, and witness caught the words, "Did he ask for Irish?" The young man who sold the ham then said, "This ham is not a very good one," and proposed to give him one unbranded, which he said was better. Witness preferred the one he got first, and he then gave it to witness, and his change. Witness asked him why they branded it "Dublin" if it was American. The salesman replied, "We smoke it ourselves." Witness called the manager, who was present in the shop, and told him all the facts, and pointed out to him the brands on the others hanging up. He said, "As you did not ask for Irish, we'll stand over it." Witness asked the name of the proprietor, and the answer was, "Go and find that out; the name is on the sign outside." The ham (produced), which was the one he bought, was American, and of a very inferior quality, as were all the others. The case for the defendants was that no fraud was intended. His worship inflicted a fine of £10 and £7 costs.

Mr. JOHN FARRELL, of 137, Upper Dorset-street, provision dealer, was summoned by Mr. John Moore, for having sold "9 lbs of ham to which a false trade description was applied, namely, that the said ham was Irish (Dublin) cured ham." Mr. Thomas O'Shaughnessy, Q.C. (instructed by Mr. Blake, solicitor of Messrs. Sutton & Sons, and Mr.

Fisher, solicitor), appeared in support of the summons. Mr. Brady, solicitor, appeared for the defendant. Mr. O'Shaughnessy, in opening the case, said the prosecution was for an offence which affected a lawful industry in the country, and also purchasers as well, and in his opinion the conduct of the defendant constituted a serious breach of the Merchandise Marks Act. Mr. John Moore, inspector of the Bacon Curers' Association, deposed that he visited defendant's shop, and asked for an Irish ham. He had noticed a number of American hams hanging up in the shop, and one of them (produced) was handed to him. Witness asked, was it Irish, and was told it was. He paid his money, 5s. 3d. for the ham, which weighed about 7 lbs. He then asked for an account, and when it was given to him he repeated the question whether it was Irish, and the defendant replied that it was, and was Dublin-cured. Constable Hickie, who accompanied him, then said, "Why don't you say that in the account?" Defendant replied again that it was Irish. Witness paid the money and informed defendant who he was, and was then told that it was a Canadian ham, but smoked in Dublin. The ham which he produced was undoubtedly American, but made up in such a way as to look like an Irish-cured ham. P.O. Hickie gave corroborative evidence.—To Mr. Brady: Witness told the defendant to put down in writing the words "Dublin-cured," not to entrap the man, but to have in writing what the defendant had already stated the ham to be. It was when the whole transaction was over that defendant said the ham was Canadian. Mr. Farrell, the defendant, was examined, and deposed that he was not in the shop at the time of the transaction. The ham and bacon were American, and everybody knew it. He had given instructions to his son to tell any customer who asked if the hams were Irish that they were not, but that they were American. These hams were known to the trade and general public as Dublin-cured. Witness kept Irish bacon in his establishment, but it was kept apart from the American, which was distinctly marked.—To Mr. O'Shaughnessy: Witness purchased the hams of Mr. Lee, Mary's Abbey. He believed any person would know perfectly well that the ham produced was American and not Irish.—To Mr. Wall: Witness gave directions in his shop that customers who asked, were the hams Irish? were to be told that they were not, but that they were American. Mr. M. Farrell, son of the last witness, deposed that his father told him always to sell the American ham and bacon as American. When Mr. Moore came into the shop, he said he wanted a ham, and pointed to one, which witness took down for him. Mr. Moore said, "Is it Irish," and Witness said, "It is Dublin-cured." When making out the bill the constable said, "Put Dublin ham on that." Witness said he was not selling it as an Irish ham, but that it had been smoked, washed, and cured in Dublin. Cross-examined by Mr. O'Shaughnessy: Your father told you to sell the hams as they were?—Yes. Why didn't you put on the bill so many pounds of American ham?—I did not think of doing it. Had you any Irish hams in the house?—Yes; one Wicklow ham. Was it branded?—No; Wicklow ham is not smoked. Were there any other Irish hams?—There was Irish bacon. Mr. Brady contended that there was no intention to defraud, nor had any fraudulent representation been made by his client. Mr. O'Shaughnessy said the Court was enabled to impose a heavy penalty, and that in a previous case £7 costs had been imposed, and he urged that a similar course should now be adopted so far as costs were concerned, but that a comparatively small penalty be imposed. Mr. Brady said his client was a very poor man. His Worship imposed a fine of £2 and £5 costs.

On August 7th, Mr. Thomas Doyle, of 9, Lower Camden-street, was summoned by Mr. John Moore for having sold a piece of ham to which a false trade description was applied, namely, that the said ham was Irish ham. Mr. O'Shaughnessy, Q.C., prosecuted. Mr. Ennis appeared for the defence. Mr. Moore gave evidence that an assistant in the shop sold him a piece of bacon as Irish which was in reality American. Inspector Hickey, of the Dublin Corporation, gave corroborative evidence. Mr. Doyle was examined, and said that the boy who sold the bacon had no authority to sell it. He should have brought the customer to the assistant, who would sell it to him. In reply to Mr. O'Shaughnessy the witness said he bought the bacon from Freeman, of Fade-street. He denied that the piece of bacon produced was made up to fraudulently represent Irish bacon. He bought it as American doctored bacon, and sold it as such. He kept plenty of Irish bacon in his shop. James Brennan, the boy whom Mr. Moore said sold him the bacon, said he told Mr. Moore that it was Irish bacon, but when Mr. Moore came into the shop the assistant said it was Canadian bacon. In reply to Mr. O'Shaughnessy, the witness said he thought all the bacon in the shop was Irish. Mr. Fitzpatrick, the assistant in the shop, said that when he was paying for the bacon Mr. Moore said, "I believe this is Irish bacon." Witness said, "No, it is not. It is American bacon," and he added that he could not buy Irish bacon at 5½d. a pound. He told Mr. Moore that it was American bacon before he knew he was the inspector. Mr. Byrne said he would fine Mr. Doyle £10, with £7 costs.

FRIED FISH NUISANCE.

TEST CASE AT RAMSGATE.

At the Ramsgate Borough Police-court on August 12, before the Mayor (in the chair) and other magistrates, Frederick Friend, the tenant of a fried fish shop, in King-street, was summoned for permitting an effluvia at his shop, and which was certified to be a nuisance, between the 13th and 27th July. Mr. Walter Hills, solicitor, prosecuted, and Dr. F. W. Hardman defended.—Mr. Hills, in opening the case for the prosecution, said on the defendant's name being called, he said, "Here we are," but it would

have been more accurate if he had said "Here we are again."—Dr. Hardman said this defendant had never been summoned before.—Mr. Hills said in the previous case this defendant's mother was the tenant of the premises, whereas the defendant was now the tenant. He thought it was better for him to mention that when the defendant's mother was charged before the magistrates twelve months ago, under similar circumstances, he then appeared for the defendant's mother. He did not know that it was necessary for him to make any apology for appearing on the other side now. He was pleased to see Dr. Hardman there, for Dr. Hardman thoroughly understood the ramifications of cases of this kind. He had had to prosecute under similar cases at Deal, and had obtained from the Bench the order asked for. Mr. Hills went on to refer to the legal aspects of the case. He frankly admitted that the business of fish-frying for sale was not *per se* an offence under the section. He was, however, going to prove that in this case it was a nuisance, and if he did that it was unnecessary for him to prove that it was injurious to health. Mr. Robert Hubbard, a clerk in the office of the Town Clerk, proved receiving a certificate of the nuisance. In consequence of this notice the Sanitary Committee passed a resolution authorising the Sanitary Inspector to make a complaint before the justices.—Cross-examined by Dr. Hardman, witness said he did not know whether the Sanitary Inspector had reported the premises, or whether the Medical Officer had been instructed to inspect them.—Mr. Pilcher Page, living next door but one to the defendant, said he complained of the nuisance in the evening, when the frying was going on. It lasted from 7.30 to 10. It was the effluvia which caused the nuisance, and this effluvia came from the defendant's premises. On the 13th July this effluvia produced nausea with him, and he was positively ill as the result of the effluvia. This had been going on for a very long while. Witness was one of the signatories to the memorial, but until it became a positive nuisance he refrained from complaining.—Cross-examined by Dr. Hardman, witness said he took the initiative in connection with the memorial. He did not go and make any friendly complaint to the defendant. His object was not to get rid of the business, but to stop the nuisance. Mr. Ford, who lived next door to the defendant, did refuse to sign. Mr. Whales, of the Prince Albert, also refused to sign. Up to a few years ago witness carried on a candle factory at his premises.—Dr. Hardman: Is there anything of a more evil smelling character than a candle factory?—Witness: Unless it is this business.—Dr. Hardman: That is very smart, Mr. Page.—Re-examined by Mr. Hills, witness said he did not know whether Mr. Ford and the others who refused to sign had lost their sense of smell. It was a positive nuisance to him. The work of the candle factory used to be carried on in the night.—Mr. Ebenezer Pledge, living two doors from defendant's premises, complained of "an abominable effluvia" from the fried-fish shop. At times it had been so great that they had been obliged to close the windows. It was an intolerable nuisance, and interfered with his business.—Cross-examined by Dr. Hardman: He had lived at the shop three years. The fried-fish shop was there when he went there. He had made no friendly remonstrance to the defendant.—Pressed by Dr. Hardman, witness said he could not say whether Mr. Friend did a good business or not. He knew nothing about Mr. Friend's business.—Mr. W. D. Millard, Inspector of Nuisances, said he had noticed an effluvia coming from those premises. In his opinion it was a nuisance.—Mr. Weigall asked whether Mr. Hills contended that it was injurious to health?—Mr. Hills said it was unnecessary for him to do that, but nevertheless he would prove it.—Cross-examined by Dr. Hardman, Mr. Millard said he was afraid there was more nuisance at these premises than necessarily arose from such a building, principally because more effluvia was allowed to get into the street. He had visited the premises and made a suggestion for minimising the effluvia. This suggestion had been carried out. Defendant had always appeared, both by actions and words, to be anxious to prevent any nuisance. He could make a suggestion to mitigate the nuisance, but not to abolish it. He thought it might be reduced by having a larger outlet into the chimney. This, however, might carry the smell to Camden-road. On visiting the premises he had always found it particularly clean. The oil used when he had seen it had always appeared to be clean and of the best quality. The fish was always fresh.—By the Bench: I have never reported the case to the sanitary committee as a nuisance on my own responsibility, except in consequence of complaints from other people.—Mr. Charles Masters, living at 19, King-street, next door to defendant's premises, said he complained of "an abominable, offensive smell" from the defendant's premises. The effect on him had been to cause extreme nausea, with an inclination to vomit. This had been frequently the case, and he had had to consult his medical man as to it. The members of his family also suffered from nausea.—Cross-examined by Dr. Hardman, witness said the nuisance was in existence when he came to live there. This concluded the case for the prosecution.—Dr. Hardman, for the defence, said that the business was a lawful one, and submitted that, therefore, as a matter of law, any smell that reasonably was inseparable from the proper working of the business was not a legal nuisance, and could not be taken into consideration in these proceedings. Only a smell which could possibly be avoided could be considered as a legal nuisance. Assuming that the justices were of opinion that a nuisance did exist, then the question arose whether the defendant had used the best practical means for counteracting the effluvia. If he proved that, it amounted to a complete answer to the charge. Dr. Hardman also stated that defendant would be willing to carry out any improvement, if any could be suggested.—Mr. Bowman, builder, gave evidence as to the dimensions of the building. His opinion coincided with that of Mr. Millard as to enlarging the outlet; in fact, he mentioned it to defendant when

he took the measurements on Friday.—Harry George Brown, having a tobacconist's shop opposite Mr. Friend's premises, said he refused to sign the certificate because he failed to see where the nuisance came in.—Martin Long, of the York Arms, said the premises were no nuisance at all to anyone.—The magistrates retired, and after a considerable absence returned, when the Mayor said they had had a difficult case before them. The business in which the defendant was engaged was surrounded with difficulties, and the Bench saw that it was so. The Bench felt sure that on the one side those who were prosecuting had only a desire to abate a nuisance, and they felt equally sure on the other side that the defendant had tried to carry on his business without causing a nuisance. At present they contented themselves with the power of suspending their final judgment in the matter for a fortnight, provided in the meantime the defendant employed the best means under the advice, of course, of a practical man, to abate the nuisance complained of.—Dr. Hardman pressed for some definite suggestion from the Bench as to what the defendant should do, but that was not forthcoming, though it was hinted that defendant might adopt the suggestion of the Sanitary Inspector, and further, that a practical man should be engaged to see if something could be done to reduce the effluvia.

MILK.

At Liverpool, on August 14, William Blackwell, milk dealer, Aberdeen-street, was summoned for selling to Inspector Baker as new milk what, on analysis, was found to contain upwards of 15 per cent. of water.—Defendant, who had been previously convicted, was fined £3 and costs.

TRYING TO BAMBOOZLE THE INSPECTOR.

At the Shire Hall, Nottingham, on Aug. 17, Thomas Grumbley, a milkman, in the employ of Mr. William Clements, milk dealer, of West Bridgford, appeared in answer to an adjourned summons charging him with, on July 30, refusing to sell to Inspector Crabtree milk for the purpose of analysis at West Bridgford. Mr. W. E. Bottrill, who appeared to prosecute, said the summons was taken out under Clause 17 of the Food and Drugs Act, 1875, which provided a penalty of not exceeding £10 for refusing to sell articles within the meaning of the Act exposed for sale to the properly appointed inspector of food and drugs. On the day in question, Mr. Crabtree, the inspector under the Notts County Council, was in William-road, West Bridgford, where he saw the defendant with two cans of milk, some of which he took to No. 12 in that road. The Inspector asked the defendant for a pint of milk, but the defendant said he could not let him have it, as he had made an agreement with his master not to sell to anyone in the street. The Inspector then demanded a sample of the milk, and offered defendant 1d. for it, at the same time warning him that he would be liable to a heavy penalty if he refused. The man, however, still declined to let the Inspector have any milk. Under the circumstances, a summons was taken out against the defendant. When the case came on for hearing, the defence was offered that all the milk in question had been previously bought and paid for, and therefore there was no selling in the street. The Bench thought that was an extraordinary statement, and adjourned the case for further evidence. Since then the prosecution had applied to some of the customers of Mr. Clements, whom the defendant supplied on the afternoon in question, and they had brought them to the court that morning as witnesses, who would testify that the milk was not previously paid for, and that when the man called with the milk they were in the habit of ordering extra quantities when needed. Under these circumstances, a case which last Saturday he should have been justified in treating as a comparatively ordinary matter, in which a fine of a sufficient amount would have acted as a warning to the defendant and others, had become completely altered. He must therefore ask the Bench, in view of the defence that had been set up, and the trouble the prosecution had been put to in getting the witnesses, to make an example of the case. Mr. Bottrill then called—

Mrs. Lizzie Clay, of 12, William-road, West Bridgford, who said she regularly had milk supplied to her from Mr. Clements by the defendant. Witness produced her milk book, which showed that she had a pint and a half of milk on the day in question. If she wanted an extra quantity at any time, she simply asked for it, and she paid for her milk once a fortnight.

Alice Brown, servant, at No. 15, William-road, West Bridgford, gave evidence of a similar character.

The Bench did not trouble Mr. Bottrill to call any more witnesses, and the defendant having nothing to say in his defence,

The Chairman observed that he was one of the magistrates at the previous hearing, who thought the evidence that all the milk had been previously ordered and paid for most extraordinary. So far from that evidence being true, it now appeared that the contrary was the case, and that the milk was taken as it came, and not paid for until some time afterwards. The magistrates considered the case a very bad one, and one, considering the evidence sworn to last Saturday, of which a most serious view might be taken in another way. The full penalty of £10 and costs, which amounted to £5 4s. 6d., would be inflicted, and he considered the people concerned might consider themselves lucky that another course had not been adopted.

HOW DAIRY COMPANIES ARE INJURED.

At Birmingham, on August 16th, Robert Bretner, Balsall Heath, was summoned for selling milk with 10 per cent. of added water and 20 per cent. of fat less than was natural. Mr. Parker, of the Health Department, who purchased the milk, said that Mr. Dowse, the manager of the Callow Park Dairy Company, by whom the defendant was employed, was summoned in the first instance, but he had ascertained that when the milk was handed to the defendant it was pure. The summons against the company, therefore, had been withdrawn. Bretner did not now deny that the milk was as stated in the summons, but he said that finding himself short of milk when on his round he purchased a gallon from another dairymen, and mixed it with about two quarts which he had in his own can. It was from this that the sample was taken. A fine of 10s. and costs was imposed. Mr. Tanner watched the case on behalf of Mr. Dowse.

ANALYSTS DON'T AGREE.

At the Dewsbury West Riding Police-court, on August 16, Wm. Waterhouse, of Lowerhouse Farm, Liversedge, was charged with selling milk adulterated with 10 per cent. of water. The prosecution was at the instance of the County Council. Mr. Bruton, of Wakefield, prosecuted, and Mr. Child, of Leeds, defended.—Mr. Newbold, the inspector, deposed that on the 10th July he visited Liversedge, and meeting the defendant selling milk, he bought a pint, divided it into three portions, which he put into bottles, giving the defendant one. A second bottle he sent to the county analyst, Mr. Allen, and the third he retained for Somerset House, if necessary.—Mr. A. H. Allen was now called, and put in his certificate, which was that the sample he analysed contained 10 per cent. of added water. His analysis was made before the milk had undergone any chemical change.—Cross-examined: He had made many analyses, of course, and a few had been challenged by Somerset House analysts. He made the analysis in this case on the 11th July, but did not give his certificate until the 30th, which was the last day he could have given it.—The witness was cross-examined as to a certificate he had given *re* some mineral waters when his analysis was alleged to have been upset.—Mr. Child, after a little further cross-examination, addressed the Court, commenting on the fact that the certificate had been kept back as long as possible, and said it was not fair to the defendant, who was an honest man, and against whom the information was only laid on the 10th inst. One bottle of the milk had been retained, but, owing to the long delay, if it were sent to Somerset House the analysis could not be satisfactory—could not be decisive against his client, for chemical and putrefactive changes must have occurred in the liquid.—Witnesses were now called for the defence.—Mr. Rimmington said he was analyst for the boroughs of Dewsbury and Bradford, and for the former since 1875. On July 10 he received a sample of milk from Mrs. Waterhouse, properly sealed. He found it, on analysis, to be perfectly pure milk, but of rather low quality. As to the third bottle of milk, owing to the lapse of time, it would be impossible due to certain changes from fermentation and putrefaction, to make a satisfactory analysis if it were sent to Somerset House.—Cross-examined: He was aware that the legislature had allowed twenty-eight days during which to make analysis, but had he the making of the law he would not have granted so long. He was quite sure there was no added water in the sample. On his notes of the analysis being put in, the witness said that some were by his assistant, but he saw them made, and knew they were correct. By the Chairman: Milk was not always of the same standard of quality. It partly depended on the seasons. This summer had not been a good one for producing high standard milk.—Defendant was next called.—Replying to Mr. Child, he said he kept eight cows, and sold milk without adding any water. He got some milk from Alfred Naylor and mixed it with his own. After milking, he took the liquid in his house, and left it in charge of his wife.—Alfred Naylor, jun., said fifteen gallons of milk were supplied to defendant, all pure.—Mrs. Waterhouse deposed that she received the milk as brought by her husband, and not a drop of water was added.—The Bench now retired to consider their decision. On returning into court, the Chairman said they were placed in a difficulty between the two analysts, but there was this fact—that a long time had elapsed between the date the milk was sent to be analysed and the date the certificate was given. They had considerable doubt about the case, and, giving the defendant the benefit of that doubt, they would dismiss the summons.

THE REFRIGERATOR EXCUSE AGAIN.

At Manchester, on August 13, Thomas Hewitt, milk dealer, Hill-kirk-street, Beswick, was summoned for selling adulterated milk. On the 19th ultimo a sample was taken from the defendant's cart in Ryder-street, Rochdale-road, which, on analysis, was found to contain 11 per cent. of added water. The defendant told the officials that he sold the milk exactly as he received it from the farmer, and accordingly an analysis was taken of the milk as it arrived at London-road station from Macclesfield. This sample contained 8 per cent. of added water, and the result was that the farmer, John Thomas Warren, Upton Hall, Macclesfield, was also summoned. His excuse now was that the adulteration was brought about by a leakage in the refrigerator used for cooling the milk, which had escaped his notice. The defect

had since been made good. The Bench completely exonerated Hewitt from blame, and the summons was withdrawn against him. Warren was fined £3 and costs, the chairman remarking that although it was a case of gross carelessness they did not think the milk had been willfully adulterated. Mr. Rook, of the Sanitary Department of the Corporation, appeared in support of the summonses.

SPIRITS.

At Belper, on August 15, James John Crosswell, of Openwood Gate, licensed victualler, was summoned for selling adulterated whisky.—Captain Sandys, the county inspector, stated that the spirit was 40 degrees under proof.—Defendant alleged that his wife had refilled the keg, and she did not properly understand the mixing.—Fined £2 1s. 6d. including costs.

At Tamworth, William Henry Groak, landlord of the Queen's Head Inn, Newton Regis, was summoned under the Food and Drugs Act for having sold whisky containing 12 per cent. more water than allowed by the Act.—Mr. G. H. Salmon, Inspector under the Act to the Warwickshire County Council, stated that on June 25 he called at defendant's house and asked for half-a-pint of whisky, for which he paid 1s. 3d. Defendant's wife served him. He divided the fluid into three parts, giving one to her, and forwarded one to the public analyst. On the 6th ult. witness received a reply from the public analyst, who reported that it contained 37 per cent. of water, being 12 per cent. more than is allowed by the Act.—Defendant said he was guilty "to a certain extent." Being busy with his hay, he left the mixing of the spirits to his wife, who, being unused to the work, put in too much water.—The Chairman said the explanation was not a very satisfactory one, but as he knew defendant to be a respectable man, and as Mr. Salmon did not press for a heavy penalty, the Bench would inflict a fine of only £1 and costs.

At Ringwood, Fredk. Pilley, landlord of the New Inn, was summoned by Mr. Samuel Bowles, detective-sergeant of police, for selling adulterated brandy at Ringwood, on June 14 last. Mr. Budge, of Poole, solicitor to the Licensed Victuallers' Association, appeared for the defence.—Agnes Healy, of Winchester, deposed that on the day in question she visited defendant's house, and asked for a pint of brandy. Witness was served by the barmaid, who stated that they had no foreign brandy, and only British brandy. Witness paid 4s. for a pint. Witness went to the door and called complainant.—Cross-examined by Mr. Bridger, witness said that from instructions received she particularly noticed that there was no notice in the bar as to spirits being diluted.—Complainant deposed to having received the brandy in question from the last witness, and produced the analyst's certificate, which showed that the spirit was adulterated, being a mixture of 92 parts of brandy with 8 parts of water.—Defendant was fined £1 and £1 17s. costs.

ENCOURAGING FOR THE COUNTY.

At Cupar, on August 16, Edward Harvey, publican, was charged with having on July 19, within a refreshment tent on the farm of Nether Strathore, Dysart, where the annual games for Thornton district were being held, sold through David Hunter, his servant, to Alexander Duthie, sanitary inspector, Markinch, half a mutchkin or thereby of whisky which was not of the nature, substance, and quality demanded, the same being adulterated by an admixture of water to an extent which reduced the spirit to more than 25 degrees under proof. The Sheriff: Are you guilty? Accused: Well, your honour, it was a very wet day.—The Sheriff: You must plead guilty or not guilty. Accused: I will plead guilty to it. The tumbler were wet. The Sheriff: Do you mean the drinking water got into them? Accused: No; they were not dry, and it was a very wet day. The Sheriff: Would that make the difference between 25 and 30 degrees? Accused: When I went home I found the whisky was 25 degrees 8-10ths under. Fiscal Renton remarked that there were not less than three guineas of expenses. The Sheriff said it was not a very bad case, and he would make the penalty £1. The county would be £2 out of pocket, so that accused got off very easily.

THE NOTICE GAME.

At Mark Cross Petty Sessions, on August 13, John Markwick, of the New Inn, Hadlow Down, was summoned for selling whisky alleged to be adulterated, on the 11th ult. Mr. Daish, Tunbridge Wells, defended. Robert Fenner, Inspector under the Food and Drugs Adulteration Act, proved purchasing three-quarters of a pint of Irish whisky, and to being served by defendant's son. One-third of this he sent to the County Analyst, whose certificate he produced. This stated that the spirit was 28.5 per cent. below proof. Cross-examined by Mr. Daish, witness said he saw no notice in the bar that the spirits sold in that establishment were diluted, nor was his attention called to such notice. Mr. Daish produced two notices to the effect that all spirits sold in the house were diluted, and witness admitted he had seen similar notices in the house before, but he did not notice them on the 11th. For the defence, Mr. Daish submitted that the fact of the notices being posted in the bar was a sufficient answer to the charge. In support of this he quoted the case of "Sandys and Small," and Chief Justice Cockburn's judgment on that

case in 1878. The facts in this instance were identical. Defendant, sworn, stated that the notices produced were posted in a conspicuous place in the bar, where any person entering the place must see them. Mr. Alfred Smith, coal merchant, Hadlow Down, stated that he had seen the notices posted in a conspicuous place in the bar. The Chairman said the notices appeared to have been conspicuously placed, and, considering the ruling of Chief Justice Cockburn, the Bench dismissed the case.—A similar summons was then heard against William Pettett, of Five Ashes. Mr. Fenner stated the facts of the case, producing the analyst's certificate, stating that the whisky was more than 25 per cent. below proof. In answer to Mr. Daish, who defended, he admitted that similar notices were posted in a conspicuous place, and that his attention was called to them by defendant after he had purchased the whisky. Summons dismissed.

DILUTING BEER.

JOHN CLEVERLEY, a licensed victualler, of Queen's-road, Hackney, was, on August 4, at North London Police-court, fined £15 for diluting beer to the extent of two gallons to the 36-gallon cask. The defence was a denial of deliberate dilution; but probably an over-mixture of waste beer.

At the Marylebone Police-court on August 15, a publican, of Capland-street, named James Thompson, was fined £20 for selling diluted beer.

RIZINE.

At Marlborough-street police-court on Aug. 14, George Henry Page, a grocer, of 43, Castle-street, Oxford-street, was summoned by Frederick Ashton, traveller to Messrs. Gillman and Spencer, Limited, of St. George's-road, Southwark, for unlawfully and with intent to defraud applying a false trade description—to wit, "Rizine"—to certain goods sold at 43, Castle-street, contrary to the provisions of the Merchandise Marks Act.—Mr. Montague Lush, barrister, prosecuted. He stated that Messrs. Gillman and Spencer manufactured from rice an article registered under the name of "Rizine," for which they had obtained a great reputation, and of which they manufactured some tons weekly. The defendant had been supplying an inferior article purporting to be Rizine, which was likely to bring the genuine manufacture into disrepute. In consequence they had been compelled to take these proceedings.—Evidence having been given in support of Mr. Lush's statement, the defendant denied all liability in the matter, and asserted that he had left the management of the shop entirely in the hands of his nephew, who had bought and sold the spurious article quite unknown to him.—Mr. Hannay fined him £10, with £3 3s. costs.

A CURIOUS PROPOSAL.

At the meeting of the Bideford Rural District Council Major Kirkwood (who was presiding) gave notice of motion to ask the Devon County Council to appoint a county analyst, whose duty it should be to visit the market towns on market days, and analyse feeding stuffs offered for sale, the analytical fee to be nominal. A peripatetic analyst at even a nominal fee would find time hang heavy on his hands, for the average farmer would prefer being swindled of pounds to paying even one shilling to secure an analysis of feeding stuffs.

NORTH RIDING COUNTY COUNCIL.

ADULTERATION OF MILK AND SPIRITS.

THE Public Analyst's report showed that out of 32 samples two of whisky, from Redcar and Brotton, were adulterated with water, the first-named to the extent of 22 per cent, and the second to 13 per cent. Samples both of whisky and gin from Staithes were of low quality, and a sample of gin from Castleton was adulterated with 15 per cent. of water. Samples of milk from Redcar and Thornaby were of very low quality.

THE ALLEGED POISONING OF PEOPLE AT WAKEFIELD.

IT is now stated that the poisoning cases at Wakefield were less serious than was at first reported. It seems that at present diarrhoea is very prevalent in Wakefield and the neighbourhood. On Saturday evening a number of persons complained of feeling indisposed, and whilst in some cases it was attributed to the oppressive heat and diarrhoea, others believed that they were suffering from the effects of eating brawn or potted meat. In about a dozen families this impression prevailed, but on the meat being examined it looked very tempting, smelled all right, and nothing unusual could be discovered. It had been made and sold by an old and respectable tradesman, who carries on business in one of the main thoroughfares of the city, and was composed of pigs' cheeks or faces and fresh meat purchased from a local butcher. The tradesman's son had some of the meat, some of the neighbours had the gravy, and none of them felt any ill effects. The vendor

of the brawn has obtained a reputation for selling a good article, and it may be mentioned that a few weeks ago, when the quality was scarcely up to the mark, he declined to sell any of it. Fortunately no serious results have followed the eating of the alleged unsound meat. One woman who was said to be in a bad state was found on Wednesday evening in the park, laughing and talking with a group of neighbours, whilst a man who had eaten of the brawn was seen taking a ride on his bicycle. It need scarcely be said that the scare has had a marked effect on the sale of brawn, and a German pork butcher who carries on business in the same street as the vendor of the supposed bad brawn obtained a certificate from the Chief Constable to the effect that he was not the maker or seller of the brawn.

THE "SOUTHAMPTON ECHO" ON SOMERSET HOUSE.

"An important point," says the *Southampton Echo*, "was raised at the Hants County Council meeting which will engage very serious attention. It appears that there have been two prosecutions for adulteration, and when the samples were forwarded by the police to the local analyst his certificate set forth that there was a portion of alum in the sample. When, however, the traders, not being satisfied, sent the article to Somerset House for analysis, the certificate returned showed that there was no alum present at all. Of course, the question was, who was right? and clearly no Bench of Magistrates would convict, or, indeed, could convict in the face of the statement from Somerset House. There is an opinion that the analyses carried out at Somerset House are not done so properly, and in the face of it such a statement is very discomfiting. Tradesmen who deal in food and drugs expect, as a rule, a visit from the Inspector, and, so far as they know and believe, the articles they sell are pure. But when the Inspector declares they are not, then comes the question—To whom is an appeal to be made? Up to the present we have always imagined the authority to be Somerset House, but if the tests there are unreliable, to where are we to turn our faces? The sooner things get righted at headquarters the better it will be for all concerned."

A SPRAT TO CATCH A NEWT.

DR. ELDRIDGE SPRATT, of 11, Hinde-street, Manchester-square, London, writes, says *The St. James's Gazette*, with reference to the dangers of impure water, that a patient recently called on him from Silvertown suffering from severe internal pain, accompanied by diarrhoea. It was thought the patient was suffering from indigestion, and she was treated accordingly by several physicians. Dr. Spratt suggested a new treatment, and after an emetic had been administered, the patient put her finger in her throat and pulled out a newt's head, afterwards taking out the body of the creature. Dr. Spratt suggests that the public should be careful in respect to drinking water or partaking of watercress insufficiently washed.

We do not think that the public suffer from insufficiently washed watercress half so much as they do from the mental decrepitude of editors who print rubbish like the above.

ARBROATH MILK SUPPLY.

MR. WALLACE, V.S., reported to the Local Authority, on August 12, that the health of the milch cows within the burgh is, upon the whole, good. Mr. Cargill drew attention to the unsatisfactory nature of the report of the Public Analyst on samples of milk recently forwarded, the report, he remarked, not being flattering to the dairy-keepers. These ought to take warning from the report, as prosecutions might follow. The Analyst's report was remitted to the Public Health Committee, with powers.

FEDERATION OF GROCERS' ASSOCIATIONS.

THE fifth annual Conference of the Federation of Grocers' Associations of the United Kingdom was opened on August 20, in the Corporation Galleries, Glasgow. Mr. R. Dunwoody (Belfast), the retiring president, occupied the chair, and over 250 delegates were present. The chairman, in his valedictory address, said if Margarine or Merchandise Acts were enforced in the United Kingdom, the Irish butter and provision trades would be greatly benefited, and thousands of pounds would be spent on home produce that was now sent to foreign nations. In closing he nominated Mr. Adam Dunlop (Glasgow) as president for the ensuing year. Mr. J. J. Holder (Brighton) seconded the nomination, which was unanimously confirmed. Mr. Dunlop, in his opening address, asked why Ireland had now to take a second place in the butter market, and replied that it was simply because Ireland had not given the making of butter the same amount of study as Denmark had. Danish merchants sent their butter into the market as soon as possible after it was made, and in casks spotlessly clean, out of which they out tons without a pound of waste. Irish merchants, on the other hand, if the market had an upward tendency, kept back the butter, forgetting seemingly that it was all the while deteriorating in quality. With the exception of what was

made in one or two creameries, the butter sent to this country did not always bear the character of cleanliness. He was sure it was the wish of everyone there that, both for quality and cleanliness, Irish butter might yet be surpassed by none. As to the co-operative movement, he did not wish to say a word against the principle. What their association objected to was the manner in which the movement had been assisted by the Government at private traders' expense. The Government had recommended that the supposed benefits to be derived from co-operative trading should be taught in the schools, and that grants in aid should be given for that purpose, and they were simply expected to pay these rates and say nothing. Did those who caused this recommendation to be put in the education code think that they were either fools or idiots, and that they would quietly submit to such injustice? This was a very fitting time for the federation to step in and see that such an injustice be not repeated. The annual report was adopted, and the office bearers having been chosen the conference adjourned.

THE HOLBORN BOARD OF WORKS SCANDALS.

AT the usual fortnightly meeting of the Holborn Board of Works the question of the inspection of meat in Charterhouse-street came up in the form of a report of the Sanitary Committee recommending that application be made to the Local Government Board for leave to appoint an additional inspector at a salary of £200 per annum, specially for the inspection of meat.—The Rev. E. Canney moved the adoption of the report of the committee.—Mr. Volkins seconded the proposition.—Mr. Wood said that they had two Sanitary Committees, and these, with the Medical Officer of Health, could discharge these duties. It would, in his opinion, be a waste of the ratepayers' money to appoint another inspector.—Mr. Alderman Hoare, L.C.C., said that the matter had engaged the attention of the County Council, and he hoped that the Board would take it into their consideration.—Mr. Hunt thought there should be six inspectors appointed by the County Council to do the whole of the work in connection with the inspection of the meat in the Central Market and Charterhouse-street, as these centres of the trade not only supplied meat to the whole of London, but also to several parts of the country. The salaries of these officials ought to be made a common charge. Mr. Treaner wished to say that although he strongly supported the recommendation of the committee, he did not do so because he believed that the Corporation had made out any case against the Board. Mr. Hawkins (to Mr. Hoare): Is it likely the County Council will take over the inspection of meat? Mr. Alderman Hoare: I have never heard any suggestion of the kind. The Chairman said that the Sanitary Committee had had this matter before them for years, and there was not a shadow of doubt but that it was necessary to appoint a special inspector for this work. The Rev. E. Canney remarked that it was currently reported that hush money was paid in connection with this inspection for years. This might not be so, but it was very probable; and they should therefore pay whoever they appointed to the office such a salary as would induce him to discharge his duties impartially and thoroughly. They ought to do something to roll away the reproach which had been levelled at that Board over this matter. The proposition was carried.

Now Holborn has got so far as to develop a rudimentary conscience, it will perhaps look into another scandal, viz., that of the disinfectants it has been using. It is a scandalous swindle on the ratepayers and a danger to their health that one to five per cent. carbolic disinfectants should be palmed off upon the Board for 10 or 15 per cent. preparations. Some of the trash has had no disinfectant value whatever.

A DEMON IN THE COFFEE-POT.

A MEASURE was lately passed by the Chamber of Deputies to rescue the French people from the perils of spirit-drinking. It appears that a second statute will soon be needed to deliver them from the dangers of coffee-drinking. Just as the taste for tea has grown upon the English people, so has the taste for coffee grown upon the French. Each nation excels in brewing the beverage of its choice, and there is as little likelihood that the Frenchwoman will ever learn how to make tea as that the Englishwoman will learn to make coffee. Tea-pot and coffee-pot perfectly symbolise the irreconcilable differences of character in the two races. It has been said that English people—especially women—drink much more tea than is good for them. We are now assured on high authority that the evils arising from coffee-drinking in France are various and formidable. At a recent meeting in Paris of the Société Médicale des Hôpitaux, Dr. Gilles de la Tourette and other medical men of note spoke of numerous cases of "coffee-poisoning" that had come within their experience; and they urged the necessity of giving more careful attention to the symptoms of chronic *caféisme*, as these were too often confounded in diagnoses with the phenomena of alcoholic poisoning. It was, moreover, declared that the two forms of "intoxication" often produced effects that were nearly identical. Such language must sound unpleasantly in the ears of those total abstainers from alcohol who have persuaded themselves and others that tea and coffee are innocent beverages. As it is ordinarily used in England, coffee is no doubt harmless enough. It is the strong coffee without milk to which the French are addicted, and which is drunk before the volatile properties of the berry have had time to escape, that acts so powerfully upon the nervous system. Women, it appear,

are the chief sufferers from *caffisme*, on account of their weaker nervous organization, and the majority of those whom it sends into the hospital are laundresses and ironers. Certain bad habits become, without any special reason, associated with certain occupations, and it is well known that coffee-drinking is the little vice—the *péché mignon*—of the Paris washerwomen. Zola, who before he wrote "L'Assommoir" evidently studied these people very closely, did not overlook the important part played by the coffee pot in their daily life. It would seem that the work of ironing produces a great craving for coffee, for even the young *repasseuse* who is just out of her apprenticeship must have a clear understanding as to the number of *petits noirs* she shall have a day before taking up the iron in the service of a fresh employer. And the employer is shrewd enough to know that nothing is lost by letting the coffee-pot circulate freely among the women. It "winds them up" and sets them working with redoubled energy.

If anybody has the curiosity to look through the shop window of a Paris laundress—a *blanchisseuse de fin*—he will probably see it crowded with female figures moving their arms backwards and forwards like frantic marionettes. If he concludes that they have recently been "wound up" with coffee, he is not likely to be far wrong. But this system of working at high pressure, under the influence of a highly stimulating alkaloid, is apt to break down the human mechanism. It was the large number of laundresses showing the same symptoms who had recourse to hospital treatment that caused the attention of Dr. Gilles de la Tourette and others to be searchingly directed upon the immoderate use of coffee. Having been put upon this track, they were not long in coming to the conclusion that coffee was responsible for a great deal of disease that had been commonly attributed to other causes—notably to the abuse of alcohol. For instance, a form of dyspepsia arising from excessive coffee-drinking or tea-drinking—the active principle of both plants is much the same—produces phenomena hardly to be distinguished from those of alcoholic gastritis. The worst stage of coffee poisoning is described by the French doctors as *cachexie caffique*. The patient is then so emaciated that he is like a living skeleton, he is troubled with terrible dreams and hallucinations, and when not under the influence of a recent dose of his favourite stimulant, the general depression is such that the pulse may not give more than fifty beats in

a minute. Except in such very bad cases, however, coffee-poisoning is said to yield much more rapidly to treatment than alcoholic poisoning. When the cause of the mischief is removed, there is a marked and rapid improvement in the patient's condition. In the case of men, the abuse of coffee in France very frequently goes with the abuse of spirits. It must, then, be rather difficult for the doctors to attribute to each of the toxic agents its exact share of the mischief. For this reason, if so many Frenchwomen—strictly sober in other respects—had not sought stimulation and consolation in the frequent use of coffee, it is probable that the demon Alcohol would still be required to bear not only the burden of his own sins, but likewise that of all the crimes committed by the slyer and more hypocritical demon that has been discovered in the coffee-pot.—*St. James's Gazette*.

ANSWERS TO CORRESPONDENTS.

M. D. P.—It is not the fact that there were only six persons present at the reading of Mr. R. Bannister's paper at the "Smitheries." The editor of this journal counted seven persons. It is also untrue that the editor of *Food and Sanitation* took away the entire Congress in a four-wheeler. He only took away three parts of it. Such stupid statements are calculated to do injury to the future progress of the British Institute for the diffusion of Smitherian prolixity.

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decay of the teeth and sponginess of the gums. Its daily use will keep the teeth sweet and the gums healthy. In boxes, 1s. each.

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GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

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Food and Sanitation.

SATURDAY, AUGUST 31ST, 1895.

POINTS UPON ALCOHOL FOR THE SOMERSET HOUSE INCAPABLES.

At a recent meeting of the *Académie de médecine*, a report of which is published in the *France médicale* for July 26th, M. Laborde referred to a former communication in which he had tried to show that the rectification of all alcohols, and particularly the alcohol of commerce, constituted the necessary and fundamental solution of the hygienic problem in regard to alcoholism. One of the most dangerous impurities of alcohol, he said, was pyromucic aldehyde or furfural. It was especially with regard to its manufacture, which had almost completely taken the place of the natural production, that it was important to require and to make obligatory the rectification of alcohol, because it was by the employment of the most impure alcohols that the trade naturally benefited.

Experience had proved, said M. Laborde, that an alcohol of a superior type chemically and atomically, such as amylic, propylic, or butylic alcohol, was essentially of a superior toxicity to that of the alcohol of the ethylic type. The alcohol distilled from wine or from the wort of grapes was less toxic than the alcohols of grains, beet-root, &c. During the period when natural



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wine and alcohol had been drunk, only the drunkenness of exhilaration had been observed, scarcely exceeding the limits of joviality. The drunkard of to-day presented stupefying intoxication and death. There was also the impulsive drunkenness of this particular alcoholic intoxication which led to the most horrible crimes. The same thing was true, also, of the influence of artificial bouquets. M. Girard, said the author, had proved that the bouquet of "cognac" was a dangerous poison.

The question of alcoholism among soldiers was also a very important one. The distribution of alcohol in the army and in the navy was regulated by law, but M. Laborde thought that the quality of the product was not sufficiently taken into consideration by those who were appointed to attend to its distribution, and the soldiers were thus exposed to the risk of consuming a very inferior quality of brandy.

The convulsant power of absinthe was well known. Its action might be compared to that of an aldehyde, which played an important part in the manufacture of bitters, etc., salicylic aldehyde. The action of this drug was an essentially epileptic one, and, when the dose was sufficient, caused rapid death.

Among the other essences and bouquets, said M. Laborde, one of the most dangerous, owing to its terrible tetanic action, was the essence of noyau. Other poisons were the bouquets called *huiles de vin* employed in the artificial manufacture of wine. These products were of a very marked toxicity, and gave rise to symptoms of collapse and asphyxia after a short period of excitation. Compared to the French product, the German product was at least ten times as active and toxic, and it was given the preference in commerce because it gave the same results in the manufacture of wines with the least expense.

With regard to the remedy against this abuse, said M. Laborde, it was fundamentally the rectification of alcohols, to restore them to a type less toxic and less harmful. Then the prohibition of the various bouquets and essences which constituted the essential agents of the toxicity of the alcohol or of alcoholic drinks. Finally, there were the various moral or public repressive measures, which were of a nature to help toward the results which it was incumbent upon us to endeavour to obtain.

CONDENSED MILK.

IMITATION, it is said, is the sincerest form of flattery, so we suppose we ought to feel very gratified that M. Ernest Hart has vamped up our disclosures of a few years ago, *re* condensed milk frauds, and dressed the pages of the *British Medical Journal* with our old thunder as the latest discovery in food frauds. In a sense we are, for the *British Medical Journal's* revival of our old-time revelations may do some good; but it would be fairer, under the circumstances, if the *British Medical Journal* had acknowledged the inspiration of its milk revelations. It was never within the power of the bitterest of Mr. Hart's detractors to be able to prove him guilty of entertaining an original idea; and we, along with the myriads who have furnished him with the ideas and facts upon which he has built his reputation, must be satisfied with admiring the way in which the British Medical Association's shop-walker sells other persons' wares and gives the press and public to understand that they are the genuine, unadulterated productions of Mr. Hart himself. But, if only to make an oasis in the desert of Mr. Hart's lack of originality we should like to see him enter upon some enquiry that others had not done better and fuller than he is apparently capable of. Failing that, we think that even if it did not swell Mr. Hart's reputation, it would be only common decency if he made an acknowledgment of the source of his "sensations." As it is they cause editors to write ignorant nonsense like the following, in the *St. James's Gazette*:—

"The medical papers are so given to crying 'Wolf!' that their warning as often as not falls on deaf ears; but this story of the *British Medical Journal* about imported milk and condensed milk requires further notice. In the many samples submitted to analysis 'disgusting and dangerous contamination' seems to have been invariably present, and the bacilli of horrible diseases were also discovered. Of the condensed milk no fewer than seventeen brands contained no proper milk at all but some 'comparatively worthless material' doctored with sugar. No new law is required to stop this sort of thing; the Adulteration Acts are strong enough if they were properly enforced. There was a time when some doctors used to recommend condensed milk in preference to natural milk, on the supposition that from its place of origin and mode of preparation it was necessarily absolutely free from contamination. But it seems that this theory is exploded. A few weeks ago we had the gentleman who used bad condensed milk in his pastrycook business alleging that the badness would 'go off in the baking.' Now, we suppose, it will be said that the bacteria and other abominations will 'go off in the drinking.' But if all that the *British Medical Journal* is telling be true, it is the consumer himself who in most cases will 'go off.'"

A little real knowledge of the subject on the part of Mr. Hart and the *St. James's Gazette* editor would teach both that it is stupidity to say that "no new law is required" to stop condensed milk swindles. Our exposures of nearly four years ago caused prosecutions for selling the wretched so-called condensed milks; but the free trade in the murder of helpless infants, favoured by Her Majesty's judges, was too much for common sense and the public protection from dangerous rubbish. If the *B.M.J.* in stealing our thunder had the intelligence to understand what it was doing, and had pointed out the need for amending the Acts to prevent microscopic labelling and deceptive declarations, the editor of the *St. James's* would have probably written less foolishly, and the *British Medical Journal's* imitation of this journal would have been more useful.

SKIMMED CHEAPNESS.

The *Sun* has been led by Mr. Ernest Hart's use of our thunder into the following charming illustration of *Tay-Payism*:—

"To the Editor of *The Sun*.

"SIR,—Our attention has been drawn to an article appearing in to-day's *Sun*, in which you state that 'a distinct fraud is perpetrated on the public' by the sale of condensed skimmed milk.

"We regret that your informant, whose accuracy is no doubt unimpeachable as regards percentages of fat, has not thought it his duty to read the labels on one or two of the 17 brands of milk in question. He would have seen that the milk is invariably described as being 'condensed skimmed or separated milk,' of which fact the class of public buying the milk is perfectly well aware.

"That this class of persons prefer quantity to quality is a well-established fact, for, though a small tin of pure, full-cream milk can always be had at the same price as a larger tin of skimmed milk, the larger tin is almost always bought.

"We trust that in consideration of these remarks you will withdraw your most unfair comments.

"We are, Sir, yours truly,

"R. LEHMANN AND CO.

"[The informant of *The Sun* (says T. P.) was the *British Medical Journal*, as *The Sun* very plainly stated. The phrase, 'distinct fraud,' is the *B.M.J.'s*. Messrs. Lehmann and Co. say that the labels 'invariably' describe the milk as skimmed. Do they know exactly what the 17 brands were? The names were not mentioned.—ED. *The Sun*.]"

And yet "Tay-Pay" is an honourable legislator, and supposed to be a person of sense and information!

Mr. T. P. O'Connor is evidently much more at home when scissoring erotic rot than when dealing with serious questions affecting the public welfare.

THE REFUSAL TO SELL DODGE.

We pointed out a few weeks ago how this dodge was spreading, and, looked at in a purely business light, it is not surprising, as there is a clear saving for the defendant. Many of the cases we have already recorded show that an amendment of the existing Acts is very necessary, and that such amendment should be in the direction of imposing higher penalties upon persons refusing to sell for analysis than upon those whose samples are found to be adulterated. To take the case of the most notorious offender in London as an example. He was time after time fined £20, until he awoke to the knowledge of the refusal to sell dodge, which enabled him to laugh at the inspector and save some sixteen pounds per occasion, for the highest penalty for refusing to sell being only £10, and magistrates usually regarding the offence as less serious than actual proved adulteration, the fines usually inflicted are merely nominal. This is a point to be guarded against in any new Act, and that it is not an unimportant one was shown at Edmonton Petty Sessions last week, when George Ayres, of Church-road, was summoned for refusing to supply Mr. A. L. Bridge, Inspector under the Food and Drugs Act, with a pint of milk.—Mr. Bridge stated that on the 31st of July he was in Tottenham, when he saw the defendant in charge of a horse and cart containing milk cans near Park-lane. A girl came up to the defendant with a jug and was supplied with milk out of one of the cans. Witness then asked for a pint of milk, and the defendant proceeded to serve him from a different can. Witness told him that he wanted the milk from the can out of which the girl had had hers, and the defendant answered, "I shan't serve you." He (witness) tendered him the price, and the defendant made the remark that it was not fair that he should ask for milk which he was selling at twopence a quart. Witness looked into the cans and saw there was milk in both. He informed the defendant of his position as Inspector.—The defendant said that Mr. Bridge asked him for a pint of new milk to drink. Witness poured it into a small can

and was about to hand it to him, when he produced a jug, and said that he wanted the milk out of a different can. Witness told him he could not have the milk out of that as there was scarcely a pint in it. Witness did not see the complainant tender any money.—Mr. Avery submitted that the defendant was not bound to supply an individual with milk from any can he might point to, and cited a case in support of his contention.—The Magistrates considered that there had been a refusal, and fined the defendant 20s. and costs, or 14 days.

THE PEPSINS ON THE MARKET.

By H. W. SNOW, PH. C.

As considerable interest has been taken in the pepsin question lately, owing to the fact that one of the important queries propounded by the American Pharmaceutical Association is on the subject, the result of my experience in assaying pepsins may be pertinent, and interesting to your readers. I write as a retail druggist who has been in business for some time, and who has had much experience in the assaying of pepsins. Depending, of course, upon the jobbers and manufacturers for my supplies, and being in the position of having all sorts of pepsins offered me, all claiming to be U. S. P., I considered it of sufficient importance to both my customers and myself to assay each lot of pepsin purchased, in order that I might determine which was the best, and which was the most economical to use if several were of the same high strength. The great variety of brands of this valuable digestive ferment to be found on the market, each claiming to be U. S. P., yet differing so radically in physical characteristics, price, etc., would naturally indicate that in some cases there must be a divergence from the established standard. For the purpose of making comparative tests to satisfy myself on this point, I obtained original packages of all the pepsins on the market, claiming to be U. S. P., together with a few other pepsins not claiming to be U. S. P., 1890, but setting forth special features and strengths, conveying the impression that that particular pepsin was not only stronger, but superior in other respects to the other brands. These samples were purchased in open market in unbroken sealed packages. The operations were conducted with the utmost care, and the minutest details in the process of manipulation necessary to bring about correct results from the assaying of each pepsin, were scrupulously observed. The following is the list of the apparatus, which I believe it is essential to have for properly conducting the experiments; also a detailed account of the method employed by the writer:

Apparatus: One balance sensitive to 1-10 milligramme; one burette, stoppered, 25 cc., graduated to 1-10 cc.; one cylinder, 100 cc., graduated to 1 cc.; one cylinder, 250 cc., graduated to 2 cc.; a suitable number of bottles (4-ounce oil sample); a suitable number of bottles, 16-ounce; a brass sieve, 30 meshes to lineal inch.

Solution A. Pepsin, 1:3,000, 0.1667 gm.; hydrochloric acid (0.2 per cent. absolute), 250 cc.

Balance two small pieces of unsized paper on the scales and weigh the pepsin. Then in order to avoid loss of pepsin, fold the paper containing it carefully and insert it (pepsin and paper both) in one of the 16-ounce bottles, into which 250 cc. of hydrochloric acid, 0.2 per cent., have been carefully measured. Agitate until the pepsin is dissolved. Number the bottle and set it aside.

	Digestive Strength Claimed.	Actual Digestive Strength.	Market Price per oz.
1. Armour's Standard Scale ..	3,000	1,666	\$0.75
2. Biroth's Pure Pepsin ..	3,000	2,142	1.00
3. Cudahy's Granular ..	3,000	1,666	0.70
4. Dike's Scale (F. Stearns & Co.)	3,000	3,000	0.50
5. Fairchild's Scale ..	3,000	3,000	1.25
6. Merck's ..	3,000	1,500	0.55
7. Parke, Davis & Co.'s Aseptic Pepsin ..	3,000	1,875	0.55
8. Scheffer's Pure Pepsin ..	3,000	535	1.25
9. Swift's Silver Scale ..	3,000	1,000	0.45
10. Wyeth's Granular ..	3,000	1,875	0.52
11. Beeman's ..		Less than 500	0.60
12. Ford's ..	Standard test	1,000	0.75
13. Golden Scale ..	Standard test	1,000	0.50
14. Jensen's ..	2,000	Less than 750	1.25
15. Royal ..	No claim	Less than 500	0.40

Eggs. These should be as fresh as possible and the water should be boiling briskly when they are added, care being taken not to break any of the shells. The boiling should continue fifteen minutes after adding the eggs. The eggs are then cooled by immersing in cold water, the shells dried with a cloth and the shells and yolks carefully separated from the albumen. The latter is then pressed through the sieve, rejecting the first portions passing through, and the resulting mass carefully mixed with a spatula. Into a suitable number of the 4-ounce bottles, each containing 50 cc. of the hydrochloric acid, 0.2 per cent., weigh carefully 10 gm. of the albumen and agitate the mixture vigorously to thoroughly mix and break up the albumen. Then measure from the burette 5 cc. (or a suitable quantity) of solution A, and add sufficient of the hydrochloric acid, 0.2 per cent., to make with the original 50 cc. and the solution A 100 cc. As 5 cc. solution A contains

enough pepsin to digest the 10 gm. of albumen contained in the 4-ounce bottle, provided the pepsin is 1:3,000, by varying the proportion of solution A added, the exact strength of the pepsin is readily determined.

After adding the solution A and the proper quantity of HCl, 0.2 per cent., to each of the test bottles, agitate the latter well and place them in a water bath at a temperature of 104 degrees F, noting the time they enter the bath. At the expiration of fifteen minutes, and regularly every fifteen minutes thereafter for six hours, agitate by reversing the test bottles twice and replace them in the bath. Care should be taken to agitate each test as nearly like the other as possible, and the corks should be removed for an instant at each agitation to allow any gases formed or expanded air in the bottle to escape.

This is practically the test laid down by the U. S. Pharm., 1890, which is manifestly the only one to be used in testing pepsin, as it is to be supposed that a pepsin to "come up to the pharmacopoeial requirements," that is, to be 1:3,000 in strength, should do so according to the test established by the Pharmacopoeia. Moreover, it would naturally be presumed that the manufacturers of the different pepsins on the market, claiming to be U. S. P., 1890, strength, base the claim made for their pepsin on its ability to stand the test laid down in the 1890 Pharmacopoeia. The only modification which was adopted in the method given above was the weighing of 0.1667 gm. of pepsin instead of 0.067 gm. This was done to avoid error, as an error of only one milligramme in weighing the pepsin would make a serious difference in the result, and by taking larger quantities the chances of errors are reduced.

The results which I obtained are given in the above table. In the third column the prices asked in open market for the different pepsins are given, and in the second column the strength of each, as found by careful assaying, is given. I will let the figures speak for themselves.

It will be interesting to note some of the facts brought out by the above table. For instance, it is obviously cheaper to manufacture a pepsin of low grade strength, and the supposition would, therefore, naturally be that the object of the discrepancy between the real strength and the strength claimed would be the desire to overcome competition by placing a cheap pepsin on the market. This theory, however, would not be borne out by the above table, for in many cases it would seem as if, by some curious process of figuring unknown to me, the lower the strength of the pepsin, the higher the price of the same has been put. To determine the actual value of a pepsin, assaying less than 1:3,000, it is simply necessary to base the calculation on the strength claimed, the actual strength, and the price at which the pepsin is sold.

Presuming that it is understood that a pepsin to come up to the requirements of the Pharmacopoeia should, in addition to being 1:3,000 in strength, possess the characteristics of a good pepsin, some of the observations made by the writer during his series of experiments may be pertinent. It might also be well to note some of the claims made for the different pepsins on the labels on their respective packages. Before we proceed let it be understood what the characteristics of a good pepsin are, which I will give as briefly as possible:—

The odour should be pleasant, as a disagreeable odour denotes the presence of mucus. The same applies to the taste, which should be sweet and agreeable. One of the essential qualifications of a good pepsin is freedom from mucus. It should be non-hygroscopic, and it should also be readily and perfectly soluble in water. In appearance a pepsin should be a fine white or yellowish-white amorphous powder, or thin, pale yellow or yellowish transparent or translucent grains or scales.

The label for No. 11 reads: "Pure Pepsin from 20 to 40 times the strength of the saccharated preparation." The U. S. P. saccharated pepsin standard is 1:300. Now 20 to 40 times this strength would show a digestive power of 1:6,000 to 1:12,000, whereas, the actual strength is less than 1:500. The solution of this pepsin is very cloudy with some insoluble matter. Odour putrid, and taste saline and slightly bitter.

We quote from label of No. 3: "Rex Brand, Granular Pepsin. One grain of this pepsin will digest 3,000 grains of egg albumen, using U. S. P. test 1890." The actual strength is 1:1,666. In appearance it is a fine yellowish powder. The odour is repulsive, and the taste equally so. It is also very hygroscopic.

Some of the claims made for No. 12 are as follows: "Non-hygroscopic, neutral and warranted free from admixture of any kind. This pepsin is unequalled in digestive power, dissolving 2,000 or more times its weight of coagulated albumen in four to six hours." The actual strength is 1:1,000. It is a yellowish-white powder, almost insoluble. The odour unpleasant, aromatic.

On No. 7 we read: "Pepsin Aseptic (Pepsin, U. S. P., 1890). Digestive power 1:3,000. A permanent soluble scale pepsin, absolutely free from putrifying matter, and capable of digesting 3,000 times its weight of freshly coagulated and disintegrated egg albumen, according to the requirements of the U. S. P., 1890." Actual strength 1:1,875. It is a pale-yellowish, transparent scale pepsin, making a very milky solution, which, however, shows no residue. The odour is fair when it is fresh, but becomes putrid when it is exposed for a short time. In taste it is unpleasant and it is also very hygroscopic.

One more example will suffice. [Take No. 8. It claims to be "Dry Pepsin concentrated. By the test of the new Pharmacopoeia. One part dissolves 3,000 parts of coagulated albumen. Contains the digestive principle of the animal stomach in a highly concentrated state. Free from any unpleasant odour and does not lose its digestive

strength." The actual strength of this pepsin is 1:535. In appearance it is a yellowish-white powder. It is exceedingly insoluble, of unpleasant odour, and in taste slightly bitter.

To conclude, in view of the results obtained from experiments conscientiously carried out, and faithfully recorded above, and for the edification of those pharmacists who may be interested in the matter, the writer feels safe in asserting that a very small percentage indeed of the so-called U. S. P. pepsins of the market come up to the Pharmacopœia requirements.

"GLUCOSE AND CANE SUGAR AS FOODS."

By CHAS. H. STOWELL, M.D., Washington, D.C..

Editor *National Medical Review, Practical Medicine, etc.*

IN the number of this journal (FOOD AND SANITATION) for May 25, I noticed an article by Prof. E. H. Bartley, of Brooklyn New York, on "Glucose and Cane Sugar as Foods." I regard the teachings of Prof. Bartley to be so much in error that, with your permission, I wish to give the readers of your interesting journal the other side of the story. For many years it was my privilege to be able to give almost exclusive attention to the study and teaching of physiology; and probably it is due to this fact that I notice in particular such articles as this one by Prof. Bartley.

Prof. Bartley first calls attention to the report of the Committee of American Chemists, as given in 1883, on the question of the Effect of Starch Sugar or Glucose upon the System. He then criticises the work of this committee as not being complete, and asks the question, "Are there not a considerable number of persons seriously affected by this article (glucose) of food, and who should be warned against its free use?"

It must be evident from this that Prof. Bartley is not aware of the additional testimony of the eminent chemists who made this famous report of 1883. It was only the middle of last December that Prof. Ira Remsen, M.D., Ph. D. of the John Hopkins University, stated that since he made his report as a member of the Committee of the National Academy of Sciences, on the Healthfulness of Glucose, he has not learned of anything that has caused him to change his opinion to the effect that there is no evidence whatever that glucose has any deleterious effects upon the system, even if taken in large quantities.

Prof. Wolcott Gibbs, M.D., LL.D., of Newport, R.I., made an additional report at the same time, and added, "It may be worth while to state in this connection that one of the chief constituents of glucose, known as levulose, is now manufactured in Germany for the express use of diabetic patients."

Prof. George F. Barker, M.D., of the University of Pennsylvania, who made an additional report at the same time as the above, says that although over ten years has passed since he made his report as a member of the Committee, he still maintains "the desirability and excellence of glucose as an article of food." He refers to their former investigations in 1882-3 as "exhaustive," and says their report was based upon actual experiments, as well as upon recorded opinions of the very best authorities which could be obtained.

Professor C. F. Chandler, Ph.D., M.D., of the School of Mines, Columbia College, New York, in a letter last November, says, that as a member of the old committee, nothing whatever has transpired within the past ten years to cause him to change his mind or modify his opinion "with regard to the healthfulness and value, as an article of food, of glucose."

I have also, personally, seen other letters from members of this committee, each one declaring in the most positive and unmistakable terms, that although over ten years had elapsed since they made their report on the Healthfulness of Glucose as an Article of Diet, the opinion is still held even more strongly than ever. That it is not only harmless, even when taken in large quantities, but that it is also highly valuable as an article of food. In the light of the opinions of these most eminent men, as eminent a body of scientific investigators as were ever together on a single committee, how is it that Professor Bartley can still claim glucose to be injurious without giving any reasons therefore, except a few clinical notes that some persons had been made ill after eating mixtures said to contain glucose?

Professor Bartley is again at fault in your article when he says that glucose "is prepared in the human body only in the intestine." He certainly is not aware of the most exhaustive experiments recently completed by Dr. J. H. Kellogg, of the Battle Creek Sanatorium, Michigan, and recently published in Dr. Kellogg's journal, *Modern Medicine*. Dr. Kellogg has a very complete Laboratory of Hygiene, in which is being done some of the best work in this country. He has recently made an examination of the stomach contents, after a test meal, in 4,875 cases. In 669 of these cases the examination showed that ALL the starch had been completely changed; while in 87 cases, or in 1.8 per cent. only, was there little or no change. In the great majority of the cases the digestion of the starch was practically completed in the stomach. Many of us have taught, and a large per cent. has believed, that the digestion of starch occurred below the stomach. But Dr. Kellogg shows that the action of the saliva is not checked in the stomach, as formerly held, but continues to convert the starch into the grape sugar, or glucose. It must be concluded, therefore, that Dr. Bartley is in error, and that grape sugar is continually being formed in our stomach.

Professor Bartley describes the deleterious effects of "large quantities of sugar, especially of glucose or invert sugar." Of course, everything here turns upon the interpretation of the words,

"large quantities." We all agree that a diet composed exclusively of "large quantities" of meat would be most undesirable for children and youths especially. But Professor Bartley has these facts to confront him. According to Sir William Roberts, two-thirds of the ordinary diet of the adult consists of starchy foods; according to Dr. Kellogg, the starches are converted into sugar in the stomach; Therefore, according to logic, two-thirds of our ordinary diet consists of glucose in the stomach. This being the case, it occurs to me that "large quantities" of glucose are normally present in the stomach of every healthy individual. If glucose be so injurious as Professor Bartley would make us believe, is it not strange that we are not all a race of sufferers, as two-thirds of our diet is eventually changed into glucose in the stomach?

Again, granting the statements of the above indisputable authorities, what possible harm in adding a small extra amount of glucose when such large quantities of it are formed in the stomach by nature? Has nature made a terrible mistake? So far as the presence of glucose in candy is concerned, we all know that the very best candies in the world have that for a base to-day; and, personally, I am very glad that such is the case.

The explanation of the ill effects from eating cooked acid fruits bears almost on the ludicrous. He raises the point that cane sugar is changed into glucose by heating it with acid fruits, as when sweetened fruits are cooked. But just here comes the practical point that the housewife never brings her pears, peaches or apples more than to a boil, while to make the change above noted, "prolonged boiling" certainly would be necessary. Professor Bartley declares that the reason why some persons can eat raw apples "without stint, and without after-distress," and yet "cannot eat apple pie without distressing after-effects," is because the latter contains this inverted sugar! It occurs to me there is more difference than this between ripe, raw apples, and the average apple pie *with its historic crust!* An equally absurd illustration is where he declares "some persons can drink lemon juice and water, but are sickened by lemonade or lemon pie." As if lemonade were cooked! While lemon pie, it occurs to me, has something more in it than glucose to make it indigestible!

But some interesting material has lately been given the profession on this very point, and by the very best authorities. For a few years there has been a growing sentiment in Germany that the proper treatment for cases of diabetes is the free administration of the carbohydrates. In England this idea is being accepted also, I am told, while in our own country a number of physicians are putting this treatment to a practical test. Hirschfeld says that diabetic coma is favoured if the carbohydrates are excluded from the diet. Both he and Schmitz declare that we should guard against giving too much animal food. Schmitz allows his diabetic patients only a small quantity of albumen, but gives them *large quantities of starch and fat*. He declares that this diet actually diminishes the amount of sugar in the urine. Grubs impregnates the system with the carbohydrates. Williamson, of Manchester, says that ordinary home-made bread is much better than the prepared diabetic flour. Therefore, it appears that the latest teachings of medical science are that not only is a diet of glucose, even in large quantities, without injurious effects; but also that this same carbohydrate diet may be useful for diabetic patients.

In the light of all this, we must conclude as follows:—Saliva continues its action on starchy foods in the stomach until nearly, if not all, the starch is changed into glucose; glucose is simply a normal product of digestion, principally made in the stomach; it is formed in large quantities in every healthy individual; as eminent men as can be found in the world, after many years of thorough investigation, have declared glucose to be without injury even when taken in large quantities; these same authorities regard it even with great favour as an article of diet; and, lastly, if it be as injurious a product as Prof. Bartley would make us believe, then nature herself has made a most egregious blunder.

SOME EXPERIMENTS WITH TEA.

By PETER McKECHNIE, M.D., OF TALAWAKELA, COLOMBO.

THE following results represent the outcome of an enquiry into the action of tea on the digestive organs.

The trial-experiments were carried on with test tubes, a digestive fluid being prepared by making a glycerol extract of pepsin. The aliment used consisted of beef-fibre and egg-albumin. Measured quantities of each were used, and to six test-tubes containing the meat-fibre were added the glycerol extract and hydrochloric acid, also a measured quantity of tea, different lengths of time being given to each infusion, varying from five to twenty minutes, so that the different test-tubes each had a different degree of strength of tea. A seventh tube was used to fix the time required for the digestion of the meat-fibre alone, which proved to be about 110 minutes. With the tea added to the other test-tubes, the time required for the digestion of an infusion of twenty minutes was the same as with one of five minutes, namely, 118.5 minutes. Another experiment was made on the same basis, but with the tannic acid precipitated by means of a gelatin solution. The result of this showed no appreciable difference in the time taken to digest that with tannic acid and that without tannic acid.

The experiments were carried still further by means of a gastric fistula formed in a monkey's stomach. It was found on introducing the ingesta by the mouth, that digestion was retarded about five minutes longer than when the ingesta and the tea were introduced through the mouth and the fistula respectively, thus showing

that the tea exerts an inhibitory influence upon the salivary glands. When the tannic acid was precipitated and introduced in the same manner there was no difference in the time occupied in the digestion of the tea without tannic acid by the mouth as compared with that by the fistula, but there was an appreciable difference on the introduction of an infusion of twenty minutes without tannic acid as compared with an infusion of five minutes with the tannic acid removed. The peristaltic action was retarded and the secretion of gastric juice diminished. I am of opinion that the tannic acid in the tea is not the injurious agent, but some of the less soluble extractive matters.

With a view of ascertaining the value of the teas of different countries as dietetic agents I procured samples of Chinese, Ceylon, and Indian teas, and carried on experiments with them, an infusion of equal quantities of each kind being used. The Indian and Ceylon teas gave a much stronger infusion in five minutes than the Chinese teas; I found that digestion took place more quickly with the stronger infusions than with the weak. The secretion of gastric juice was increased considerably with the Indian and Ceylon teas.

The reason I attribute for this is that Indian and Ceylon teas contain a much higher percentage of caffeine than Chinese teas, thus acting as a stimulant to the motor nerves and increasing the peristaltic action and flow of gastric juice.

From the results of my observations I am inclined to think that the action of tea is not so injurious as some would like to make it out. It is greatly dependent on the method of infusing, whether its action is injurious or beneficial. Long-infused teas seem to extract some substance, possibly an alkaloid, that has an inhibitory action on the nerves of the stomach. I may here state that an infusion of tea of twenty minutes with the tannic acid precipitated has the same bitter taste as the same tea with the tannic acid present, so that the bitterness in long-infused tea is not due to the tannic acid, but to some other ingredient.

The method of preparation of the tea-leaf is another point that requires attention. Indian and Ceylon teas are prepared on a more highly scientific basis than those of Japan and China. The curling of the leaf is done in the first-mentioned countries by means of machinery, by which means the cell-walls are entirely broken up; while in China and Japan the rolling is done by hand, which is a most imperfect method from an economic point of view, owing to the greater surface exposed. Through the entire breaking up of the cells in Indian and Ceylon teas, less tea requires to be used in order to get the same result as in Chinese tea; thus, with three pounds of either Indian or Ceylon tea the same amount of work can be done as with five pounds of China. In my experiments I found that an infusion of Indian and Ceylon teas in the proportion of forty-five grains to ten ounces of water gave a solution of the same specific gravity as an infusion of Chinese tea consisting of sixty grains to ten ounces. The experiments carried out with these infusions showed a marked superiority of the Indian and Ceylon teas in assisting digestion. On making a microscopic examination of the leaves after drying them, I found that in the case of the Ceylon and Indian leaf the water had extracted the free tannic acid, while in the Chinese teas there could be observed needle-shaped bundles within the interstices of the cells.

I think that it would be advisable for medical men in studying the dietary of their patients to caution them against the use of long-infused teas. If a patient has tea which requires long infusion, there is something wrong, as the active principles can be extracted in five minutes from really good teas. Longer infusion is most injurious; in fact, with Indian and Ceylon teas three minutes are quite sufficient. I shall continue my researches, and intend to study more of the chemistry of tea and its physiologic action on the nerve-centres.

WHAT IS A SEIDLITZ POWDER?

At the Bolton-by-Bowland petty sessions on Aug. 12, Benjamin Robinson, a grocer and drug-seller, of Gisburn, was summoned under the Food and Drugs Act, by Inspector Arthur Randerson, of Skipton, acting for the West Riding County Council. Mr. S. Brutton, from the County Council's solicitors' offices, Wakefield, prosecuted, and the defendant was not legally represented.—Mr. Brutton explained that the case against the defendant was that of selling one dozen seidlitz powders which were not made according to the British Pharmacopœia. In that case, however, the powders were not made of a poison, but where powders had any poison in them it might be most serious for the purchaser, unless the amounts laid down in the Pharmacopœia were strictly adhered to. In the case of tincture of opium, for instance, it might be very serious. It was laid down that a drug must be made according to the British Pharmacopœia, or, if not, a vendor was liable to be successfully prosecuted. He would put in the British Pharmacopœia, and they would see how far wide the seidlitz powders were, and also what they should really be. In nearly every case the retailers bought these powders with a guarantee from the wholesale people, and, if that was so, the retailer could recover from the wholesale dealer for not having supplied him with what he ordered. They really wanted to get at the wholesale dealer and punish him, but they could not get at him except through the retailer.—Inspector Randerson said that on Tuesday, June 18, he visited the shop of the defendant, and, along with other articles, he purchased a dozen Seidlitz powders, for which he paid a shilling. He then told the defendant that he had bought them with the intention of sending them to the public analyst, and at his (defendant's) request he divided the powders into three parts, sealing each, and labelling them, "157 A." One he gave to the defendant, one he kept, and the third was sent by

registered post to the analyst. In due course he received the analyst's certificate, which he put in for the Bench to see. This was to the following effect:—"The contents of the blue papers weighed respectively 154.5, 158.1, 183.1, and 163.5 grains, averaging 159.8 grains. Of this 27 grains only consisted of bicarbonate of sodium, as against 40 grains directed by the British Pharmacopœia to be present in the contents of each blue paper. The contents of the four white papers, consisting of tartaric acid, weighed respectively 25.9, 33.7, 34.1, and 34.7 grains, averaging 32.1 grains, as against 38 grains directed by the British Pharmacopœia to be contained in each white paper. Observation: Seidlitz powders were constituted an official preparation by the additions to the British Pharmacopœia of 1885, published in 1888, which directed that the contents of each blue paper shall weigh 160 grains, of which 40 grains shall be bicarbonate of sodium, and that each of the white papers shall contain 38 grains of tartaric acid. Hence the contents of both the blue and the white papers were materially less in weight, and consequently in medicinal activity, than seidlitz powders prepared in accordance with the British Pharmacopœia.—Alfred H. Allen, public analyst for the West Riding of Yorkshire."—The Defendant: When you asked for these seidlitz powders, did you ask for any particular quality?—Witness: No; there is only one quality.—Defendant: I have been given to understand that there are different qualities. I know some years since I purchased some from a druggist, and said, "Some of the grocers in Gisburn are selling at 1d. each, but I cannot afford to do so, because they cost me so much from you." "Oh," he replied, "they can have different qualities." I sell mine now at 1d., because I get them from London.—Witness: The official name given is seidlitz powders, and anything made up in their name are not British Pharmacopœia seidlitz powders.—Defendant: Are they subject to loss by dampness?—Witness: If they get damp, they would get heavier. The British Pharmacopœia says they must be dry powders.—The defendant said that according to the statement of the firm they were subject to waste by damp, and he handed up to the Bench a letter from the wholesale dealers.—Mr. Brutton: We go upon facts, not theories; that letter is theoretical.—The defendant said that the powders had been sold just as he received them.—Mr. Brutton: We don't suggest that defendant tampered with them, but if he sells seidlitz powders, he must sell correct seidlitz powders; and if his wholesale firm don't sell them, he must ask them to recoup him the fine.—The defendant: Deal very leniently with me, your worships. I shall have some expense.—Mr. Brutton: It is your duty to get it back.—The Clerk (Mr. Wheeler, Clitheroe): The Act of Parliament says you can get it back.—The defendant (to the prosecuting solicitor): Will you help me to get it back?—Mr. Brutton shook his head.—The defendant: If I engage you? (Laughter.)—Mr. Brutton was again understood to dissent.—Mr. Wright said that the defendant would be fined 10s. and costs. The costs amounted to £1 13s 7d.—Canon Wilson: You must get it back from your dealer.

FILTERS AND PUBLIC HEALTH.

THE Public Health Section of the British Medical Association, in its recent Congress, July 30 to August 2, gave considerable attention to the subject of water filters, which has recently been much discussed in medical and scientific papers, as well as in the daily press. The Public Health Section was mainly concerned on Wednesday, July 31, with discussing the dangers to which contaminated water exposed the community. In the presidential address, it was pointed out that one of the gravest reproaches against official sanitary administration was that it was only just beginning to realise the protection which could be obtained against cholera, typhoid fever, and similar diseases, by the adoption of the Pasteur system of filtration, which had in France for many years succeeded in stamping out such diseases whenever it had been applied. One of the last official acts of the Congress was to visit the premises of Messrs. Debenham and Freebody, who have provided Pasteur filtration to supply the whole of the drinking water used by, roughly, the 1,000 persons resident in, or employed on the firm's premises, this large installation giving practical evidence that the system can be conveniently applied on an extensive scale.

The report published last year by the Association, of the researches made at the Royal Colleges of Physicians and Surgeons, by Dr. Sims Woodhead, the Director of the Laboratories, showed that, without exception, all the most trusted filtering media used in this country are not only valueless, but increase the danger. At the same time it was shown, as had been previously demonstrated at the Public Health Laboratories of the Universities of Edinburgh and Paris, that the Filter devised by M. Pasteur and Dr. Chamberland—the present Director of the Pasteur Institute of Paris—after many years of special investigations, gives reliable protection against typhoid fever, cholera, and all water-borne diseases. The Pasteur Filter consists essentially of a number of hollow tubes of hard, porous material, which is not ordinary porcelain, but a peculiar composition, which it has hitherto been found impossible to imitate or to prepare without the special scientific methods worked out by the bacteriologists in question.

It is of the highest importance for all persons who wish to use filters for the protection of their health and that of their families to avoid jumping to conclusions, or basing their selection of a filter on obsolete ideas. In particular, it is desirable that they should remember that the protection which has been shown in practice to be given by the Pasteur Filter is not necessarily obtained by filters made in the same form, and sometimes even of apparently the same material. The composition of the Pasteur cylinder took several years to work out, and numerous materials, which by an outsider could not be distinguished from that which was ultimately adopted, had to be rejected.

ADULTERATION PROSECUTIONS.

MORE JAM REVELATIONS.

At Thames Police-court, on August 22, with reference to the seizure of 14 tons of greengages by the sanitary inspector to the Limehouse District Board of Works, Mr. Stern put in the information of the medical officer, which stated that although the whole of the fruit seized was not bad, yet it had probably become contaminated, and if eaten would, in his opinion, be injurious to health.—Messrs. Batger's representative said he was quite satisfied with the doctor's statement, and was willing that the whole of the fruit, which had been bought in the ordinary way, should be condemned.—The magistrate having made the order, Mr. Stern applied for a summons against Messrs. Batger, but the former said, as the firm had rendered every assistance in the matter, he did not think he ought to grant the application.

SHALE OIL FOR OLIVE OIL.

At Hayward's Heath Petty Sessions, on August 26, Walter Stepney, grocer, Burgess Hill, was summoned under the Food and Drugs Act, by Mr. Henry Moore, for selling olive oil not of the nature and quality demanded.—Mr. Moore said he went to defendant's shop for a flask of olive oil, for which 6d. was paid. Witness afterwards went to defendant and told him for what purpose he wanted it, and offered that the flask be divided. Defendant declined the offer to have it divided. Witness sent the flask to the public analyst, whose certificate was to the effect that it contained 95 per cent. of mineral oil—shale oil.—The Clerk: Really petroleum.—Henry May, assistant to Mr. Moore, gave formal evidence of purchasing the flask of oil.—Defendant said he was under the impression that it was olive oil, and he sold it as such. It was sold to him as flask oil, and he always understood that it was olive oil, and he was quite in ignorance of the fact that it was not so.—Mr. Moore said he had in a few cases bought olive oil so low as 6d. a flask.—The Magistrates retired to consider the case, and on returning to the Court the Chairman said the Magistrates felt so much the importance of the case that they had thoroughly gone into it to satisfy themselves. Defendant was responsible for selling the oil to the public, and he sold for 6d. what was probably not worth more than 2d. or, perhaps, 1d., so there was not only fraud upon the public, but what he sold was injurious to health. The Magistrates had come to the conclusion to inflict a penalty of £5 and costs £1 1s., or, in default, two months' imprisonment, a fortnight being allowed for payment.—Defendant again pleaded ignorance that what he sold was not olive oil.—Lord F. Fitzroy said it was defendant's place not to be ignorant of what he sold. He had a remedy against those of whom he bought the oil.

BELFAST DAIRYMEN AND ADULTERATION.

A DEPUTATION, representing the Dairymen's Association, waited upon the Belfast Health Committee last week and presented a lengthy memorial on the subject of milk adulteration, pointing out the desirability of having the milk standard raised, and steps taken to prevent the introduction of chemicals for the purpose of preservation, and other ingredients, as colouring matter. The committee thanked the deputation for their attendance, and directed the report to be submitted to the city analyst with the request that he would consider it and attend the next meeting of the committee in reference thereto.

WORKHOUSE MILK.

MESSRS. CROSBIE AND KINSELLA, milk contractors to the South Dublin Union, were summoned by the Corporation, on August 23, for selling milk to the guardians which was not of the nature, substance, and quality of the milk contracted for, on August 9 last. It appeared that in the case of the milk supplied by Crosbie 22 per cent. of fat had been extracted. The case stood over for the attendance of Sir Charles Cameron, who now gave evidence on behalf of the Corporation.

Mr. Swift imposed a fine of £5 on Crosbie and £3 on Kinsella.

A CURIOUS CASE OF WATERING MILK.

At the Halifax Borough Court, on August 23rd, before Mr. J. Bairstow and other magistrates, Fred. Bottomley, of Bradshaw, was charged with stealing milk, the property of Mr. Joseph Walker, farmer, Bradshaw. Mr. Willans appeared for the plaintiff, and Mr. Boocock defended. From the evidence it appears that the plaintiff received a summons for having adulterated his milk. In consequence of this the plaintiff kept a watch in his mistal, as he had a suspicion that the milk was adulterated by someone else. On Tuesday morning the defendant entered the mistal with two cans, but seeing someone there he went away. The next morning the defendant again came with two cans, one of which was full of water. He filled one

can with milk, and, taking about three quarts of water from the other, he was about to mix it with the milk, when the prosecutor, who was in hiding, caught him in the act, and the defendant said that he had done the same thing for about a month.—Mr. Boocock, on behalf of the defendant, expressed his deep regret, and pleaded for leniency, in view of defendant's wife and children. It was very peculiar that the inspector should have taken the very can that the water had been put into. Defendant took milk round for other farmers in the neighbourhood, but not for the plaintiff.—The Bench inflicted a penalty of £5, including costs, or in default one month's imprisonment.—The summons issued against Mr. Walker for adulteration was withdrawn.

THE WARRANTY AGAIN.

At Ashford police-court, on August 20th, Arthur Mileham, of Ashford, was summoned for selling adulterated milk.—Mr. Worsfold Mowll defended, and pleaded not guilty.—P.C. Aldridge proved the purchase, and Supt. Wenham produced the certificate of the Public Analyst, who stated that the sample analysed consisted of 90 parts whole milk and 10 parts which had been deprived of its fat.—Mr. Mowll placed the defendant in the box, and he stated that he purchased the milk from Mr. Thomas Chapman as new milk. The receipt for the 49 gallons purchased on the day the sample was taken and the agreement with Mr. Chapman were produced. Defendant also stated that the milk had never been tampered with.—In reply to Mr. Walker, Mr. Mowll stated that the receipt and agreement did not contain the word "pure." Mr. Mowll contended that under the section he had only to prove to the satisfaction of the Bench that the milk was purchased as pure milk and had never been tampered with.—The Bench dismissed the case, Mr. Sayer remarking that the police were perfectly right in taking the action they had in the case.

DOVER BEGRUDGES 10s. 6d. FOR SUPPRESSING MILK FRAUDS.

At the last meeting of the City Fathers, Councillor Burkett said he noticed that there was a bill from the public analyst in regard to the prosecution for milk adulteration by the military authorities. Was it correct?—The Deputy Town Clerk said that it was the first case they had had, and it had been taken up by the town.—Councillor Burkett said it was only 10s. 6d., but he thought the prosecution had been instituted by the commanding officer of the regiment, and he did not see why they should pay for a private prosecution.—The Deputy Town Clerk said the case had been taken up by the Town Clerk on behalf of the town by the direction of the Mayor. They were not legally liable, but it was usual when the town took up a case to pay the fee.—Councillor Burkett said he thought they ought not to pay.—Councillor Bradley said it was taken up by the town for the public good, and private people should not be mulct in the expense.—The bill was passed. What a nice place Dover must be to live out of!

SMALL SAGO.

At Lyndhurst Petty Sessions, on August 14, Tom Bishop, of Totton, was summoned for an offence under the Adulteration of Food and Drugs Act. The case was adjourned from the last Bench day, when defendant did not appear, and he stated that it was out of no disrespect to the Bench that he did not attend, but he sent his manager, who sold the articles, and who, he thought, could represent him, but it seemed he could not.—The case was then proceeded with.—Mrs. Agnes Healy, of Winchester, deposed to going to the defendant's shop at Cadnam, on the 10th June, and purchasing 1lb. of small sago, for which she paid 3½d.—Cross-examined by Mr. Lamport, Mrs. Healy said she had gone about the country to endeavour to get convictions in cases where there was a chance of one. She was a witness in a case at Andover which was on all fours with this, and it was dismissed. There were two kinds of sago—brown and white, and she preferred the white.—Police-sergeant Bowles, stationed at Bournemouth, deposed to sending a portion of the sago to Dr. Angell, the county analyst, whose certificate was that the sago contained 50 per cent. of starch, not sago starch.—Mr. Lamport, in defence, said although Mrs. Healy did not get what she asked for she got a much better article, a mixture of pearl tapioca and sago, and he therefore submitted that the purchaser was not defrauded or prejudiced. He had the samples before him, and he would ask the bench to look at them.—The Chairman said he was not a judge of sago, and Captain Timson also said he was not. He knew nothing about it.—Mr. Lamport said Mrs. Healy asked for what was known in the trade as small sago, and she was supplied with it, the same as she would have been with coffee had she asked for it, and which she would have known would have contained chicory. At the Andover Court, in a case which was on all fours with this, the Bench dismissed it, as they considered no fraud had been committed, for Dr. Angell had admitted in that Court that there was nothing in the sago injurious to health; on the contrary, the purchaser got a better article than had been asked for. In the case before them there was no evidence that there was any intention to defraud.—Mr. Lamport called Phillip Davies, who said he represented Messrs. Collett and Bowes, of Shoreditch, London, drysalters, who did a considerable trade with reference to pearl tapioca, which was the article often supplied when small sago was asked for, but it all depended on the colour asked for—white or brown. The white was of greater value than the

brown sago.—The chairman: What is the difference?—Mr. Davies: Really I cannot say.—Mr. Lamport: Neither can I. I suppose in one case there is more glycerine, which sticks to your teeth, perhaps, while the other you can swallow with ease.—Mr. Coxwell: Is it of the nature and quality demanded by the purchaser?—Mr. Davies: Yes, better.—Mr. Lamport handed to the Bench decided cases with regard to mustard and flour, in which it had been held that if the purchaser got a better article than he asked for he was not prejudiced.—The chairman said the Bench could not get over the certificate of the analyst.—Mr. Superintendent Payne said he had to ask for the costs of the day, and also those of the last Bench day.—The chairman asked what were the costs.—Mr. Superintendent Payne said his costs were £2 2s. 4d., Mr. Coxwell adding that the costs of the court were 9s. in addition.—The Bench fined the defendant £1 and the costs, which they reduced from £2 11s. 4d. to £1 15s. 6d.—Mr. Lamport asked for a case for the opinion of the Superior Court, on the ground that the purchaser was not prejudiced, and the Bench assented to the application.

CHEESE.

At South London, Jane Jones, of 71, Bermondsey-street, was summoned at the instance of Mr. Henry Thomas, inspector under the Food and Drugs Act to Bermondsey Vestry, for selling cheese deficient in butter fat to the extent of 40 per cent. She was fined £3 and 12s. 6d. costs.

SPIRITS.

At Somerton Petty Sessions, Henry Ashford, of the Barton Inn Barton St. David, was summoned for selling whisky 27 degrees under proof.—P.C. Newbury said that he purchased a pint of whisky from Mrs. Ashford, and sealed it in her presence.—P.S. Martin corroborated.—Superintendent Perry stated that he handed the spirit to Dr. Alford, the county analyst, and he had sent a certificate showing the whisky to be 27 degrees under proof, the maximum allowed being 25.—The defendant stated that he bought the spirit at Christmas, and by being exposed from time to time it had deteriorated.—Fined 10s. and costs.

At Swadlincote Petty Sessions, Harriet Poyser, of the Bear Inn Swadlincote, was summoned by Henry Stair Sandys, of Spondon, inspector of food and drugs, for selling adulterated rum 25 degrees under proof on the 9th July.—The defendant, a widow, pleaded guilty.—The Chairman: Have you any explanation to give?—I was ignorant of the strength. I am leaving the business.—Fined 1s. and costs.

At Belper, on August 22, James John Cresswell, Openwood Gate, Belper, licensed victualler, was charged with selling adulterated whisky on the 7th June.—Captain Sandys, the county inspector, proved the liquor contained 20 parts of added water. The alcoholic strength was 40 degrees under proof.—The defendant explained that his wife had mixed the spirit, and was unable to do it properly.—A fine of £1 and £1 1s. 6d. costs was imposed.

CHEAP WHISKY AND ANTIMONY.

THE annual licensing sessions for the petty sessional division of Amounderness was held at the Preston County Police Court on Aug. 24th. Mr. W. P. Anderton inquired from Superintendents Bourke and Cross whether, in the cases of conviction for selling adulterated spirits, the analysis made by the county analyst showed the presence of antimony. The county asylum superintendents found that patients committed to the asylums for intemperance in drink were suffering from a slow poison as well as dementia, which was caused by antimony, said to arise from the use of patent stills in the preparation of cheap whisky. As over 20 per cent. of the asylum inmates were suffering from insanity caused by excessive drinking, it was a question which deserved serious consideration.—Mr. Bourke said the analyst had never mentioned the presence of antimony in the spirits which he had analysed for him. All that he had referred to had been the presence of excessive water.

BEER.

At Marylebone, on August 23rd, Thomas Dinmore, the landlord of the Old George public-house, Queen Anne-street, Marylebone, appeared in answer to a summons taken out at the instance of the Inland Revenue, for diluting certain beer with water to the extent of nearly one and a-half gallons in a barrel.—Mr. Hawkins, who supported the summons, pointed out that, although the dilution was not large, it must be remembered that often as much as sixty barrels of beer were disposed of in a week, and that the profit would, therefore, be very considerable. Evidence in support of the summons having been called, the defendant said he would swear, even if his head was cut off (laughter) that the beer was not diluted, and that he was an innocent man. Mr. Plowden imposed a fine of £10, saying the case had been clearly proved.

THE PRINTERS' BEER.

EDWARD CHAS. BATEMAN, occupier and landlord of the Welsh Harp public-house, Essex-street, Bonville-street, was summoned, on August 26, at the Mansion House, for having diluted beer sold on his premises.—Mr. Hawkins prosecuted on behalf of the Inland Revenue, and said the defendant was paying £.00 per annum rent for the public-house, which did a large night trade, being opened at two in the morning for the convenience of printers. On June 12 two samples of beer were taken from casks in defendant's cellar, one being on draught and the other not. The beer was sold as four ale, and the sample of the draught beer, on being analysed, was found to contain a proportion of 2½ gallons of water to 36 gallons of beer, after allowing for half a gallon of water to the 36 gallons of beer for the process of fining.—Mr. Overend, for the defence, said the defendant had been used to a country trade, having only been in London a short time. If any error had been committed, it was through a servant to whom defendant had entrusted matters during the night trade owing to his (defendant's) bad health.—The Lord Mayor. The maximum penalty is £50. I shall impose one of £10 and £4 1s. costs, £14 1s. in all, or one month.—The Lord Mayor refused the application for time to pay, as he thought a landlord paying £200 a year for rent ought to have £14 1s. at his disposal.

TINCTURE OF RHUBARB.

At Ripley Petty Sessions, on August 26, George Tunnicliffe was charged with selling to Captain Sandys, Inspector under the Adulteration Act, 3ozs. of compound tincture of rhubarb, value 9d., at Loscoe Grange, which was not of the nature demanded. Captain Sandys deposed that he purchased the articles named from defendant's shop. He sent a portion of it for analysis, and had received a certificate to the effect that the sample was 50 per cent. deficient in solid ingredients, and also of saffron. Defendant, who pleaded ignorance, was fined £1 6s., including costs.

POISONING BY TINNED TONGUE.

At Nelson, Mr. and Mrs. Robert Waddington and Mr. and Mrs. Joseph Ogden, dined off tinned tongue on August 19. Mr. Ogden did not partake of tongue, but Mrs. Ogden and Mr. and Mrs. Waddington, who partook of it, were during the evening seized with symptoms of violent poisoning. Medical assistance was procured, and by the use of emetics the afflicted persons were relieved from their sufferings.

WANDSWORTH DISTRICT BOARD OF WORKS AND THE FOOD AND DRUGS ACTS.

THE Inspector under these Acts reported as follows: "That 1 sample of milk, 3 samples of bread, and 11 drugs purchased in the parishes of Clapham, Streatham, Tooting and Wandsworth have been analysed, and that such samples are reported to be genuine, except the sample of milk, reported to be adulterated with 20 per cent. of extraneous water." During the year ending March 25th, 1895, not less than 388 samples of food and drink were purchased by Mr. H. S. Smith, the Inspector under the Food and Drugs Act, and 361 of these were, on analysis, reported to be genuine. Of the remaining 27.8 vendors were cautioned by the Board, and 19 were prosecuted and fined in sums ranging from 17s. 6d. to £5 12s. 6d.

GROCCERS' ADULTERATION AND WEIGHTS AND MEASURES.

At the Conference of the Grocers' Federation at Glasgow the following resolutions were promulgated:—

"That this Conference of delegates of the Federation of Grocers' Associations assembled in Glasgow respectfully urges upon the President of the Local Government Board the importance of the immediate re-appointment of a Select Committee of the House of Commons to continue the inquiry into the working of the Sale of Food and Drugs Acts (which was begun by the late Government), in order that the inquiry may be completed, and steps taken without delay for so amending these laws as to remedy the grievances now inflicted upon honest traders."

"That this Association urges the Federation to press for such an amendment of the Sale of Food and Drugs Acts as will make the invoice a warranty in all cases."

"That in the opinion of this Conference the anomalies created by the administration of the Weights and Measures Acts, and the injustice to traders consequent thereon, are such that a Parliamentary inquiry into the working of these Acts is urgently necessary with a view to amendment, and earnestly hopes that the Government will take steps for the appointment of such a Committee at an early date."

"That the foregoing resolution be sent to the Prime Minister and the President of the Board of Trade, and that it be also referred to the General Purposes Committee to take action thereon."

"That this Association of Bolton and district grocers is of opinion

that the system of weights and measures in use in this country is antiquated, and unsuitable for present-day requirements, and would urge the Conference to give its support to the proposed adoption of the metric system of weights and measures, as in the opinion of this Association that would tend to the simplification of calculations and consequent benefit to our trade both at home and abroad."

SEWAGE DISPOSAL IN FRANCE.

THIS subject is now receiving some attention in France. Last year at the Boulogne Exhibition M. Howatson showed a small installation in demonstration of the efficiency of the Ferozone-Polarite system of sewage treatment. Two commissioners, MM. Genis and Rebouffé, were appointed to visit England to see the process in question in operation, and also other processes of sewage treatment. In the course of their visit amongst other places they inspected Royton, Hyde, and Huddersfield, seeing the international process at work. They also visited Manchester, Salford, Sheffield, and Lincoln, where they were received by the chairman of the sewage committee and the city engineer, Mr. McBrair, who explained that, though the sewage farm at Lincoln was by nature of soil, arrangement of filter areas and size of tanks *theoretically* more than sufficient for the treatment of a much larger place than Lincoln, the actual result was that the Lincoln sewage farm, like so many others, was a failure, and they were under threats of an injunction. In order to secure an efficient system the Lincoln Corporation were then engaged putting down Polarite Filters, Birmingham, and finally Crossness. The result of this visit was evidenced by the *Award d'Honneur* of the Boulogne Commission.

As a sequel to this demonstration at Boulogne and the report of the distinguished engineers who acted as commissioners, the Municipal Council of Rouen, by a vote of 22 as against two have decided in favour of a scheme submitted by M. Howatson, C.E., on lines very similar to those adopted at Huddersfield, viz.: Precipitation by Ferozone and filtration through Polarite, but before carrying out this it was decided to visit England.

In accordance with this decision the Mayor of Rouen (M. Laurent) and a numerous deputation reached England, and on Monday, the 19th inst., commenced their tour of inspection. In the morning they visited the Royton Sewage Works, where they were received by the Chairman of the Council, Mr. Walter Evans, J.P., and the Clerk, Mr. Beasdale. During this visit, full details of the process were given by the Chairman and by Mr. T. S. McCallum, C.E., Manchester, the engineer of the scheme.

The deputation were evidently impressed by the purification effected by the Ferozone and Polarite. The special method of cleansing the Polarite Filters by means of the "upward wash" was demonstrated. After luncheon at the Railway Hotel, Royton, the Mayor's party proceeded to Chorley to inspect the magnificent new works designed by the borough engineer, Mr. Leigh, C.E., for the treatment of the sewage of Chorley by the "international process." The Chairman of the Sewage Committee, Mr. Alderman Hibbert, J.P., and the Vice-Chairman, Mr. Councillor Stones received the distinguished visitors on arrival at the Chorley Station, and thence drove them to the Sewage Works, where a close inspection of the various details was made, including a visit to the Chorley Sewage Farm, where the Mayor's party had ample demonstration in favour of the treatment of sewage other than by sewage farms. Alderman Hibbert, at the conclusion of the visit of inspection, invited his visitors to join him in drinking the health of the President of the French Republic, in response to which the Mayor, M. Laurent, proposed that of Her Majesty the Queen. Ere leaving the works, the Mayor of Chorley invited the deputation to visit him at the Town Hall, which they did after visiting the Chorley Fire Station *en route*, where the Honorary Captain of the Brigade, Alderman Hibbert,

explained the arrangements, concluding by having the horses put to the engine. Ere leaving the Town Hall, M. Laurent, the Mayor of Rouen, speaking on behalf of himself and the deputation, expressed their profound appreciation of the arrangement shown to them, and of the hospitality extended to them, inviting the Mayor and the Chairman to visit the forthcoming Rouen Exhibition as his guests. On Tuesday, the 20th inst., the deputation visited the Wigan Sewage Farm, where they were received by the Mayor and other gentlemen of the Corporation. After a careful inspection of the various parts, they had luncheon with the Mayor, and left for Huddersfield, reaching that town on the evening of the 20th. During their stay in Huddersfield they were the guests of the Mayor. The borough engineer, Mr. R. S. Dugdale, C.E., met the deputation on Wednesday morning, and conducted them to the Sewage Disposal Works at Deighton, where they were received by the Chairman, Alderman Jessop, and Alderman Walker. The Mayor was detained by the Licensing Sessions, and so deputed the Chairman to welcome M. Laurent and his colleagues in his name. The Huddersfield Sewage Works, designed and carried out under the direction of Mr. Dugdale, are well calculated to impress the visitor, alike from beauty of situation and arrangement of works and from the admirable results obtained. As may be well imagined, the sewage of Huddersfield, receiving the refuse liquors of so many dye-works, etc., is very foul, and yet after precipitation by means of Ferozone, and subsequent filtration through Polarite, an effluent is obtained of such a nature as induced some of the deputation to taste it. In the course of their visit they were able to see a tank fitted with the Candy Patent arrangement for the automatic removal of the sludge, whilst the tank is working on the continuous flow. Ere leaving the works M. Howatson was satisfied with the approval expressed by the various members, and ere long Rouen may have as efficient a Sewage Purification Works, and on the same lines as the Huddersfield Works. Subsequently the delegates were driven to the Town Hall, and cordially welcomed by the Mayor of Huddersfield, by whom they were entertained to luncheon along with several members of the Council.

BOWNESS SEWAGE SCHEME.

ON Wednesday last, Mr. G. W. Willcocks, one of the Inspectors of the Local Government Board, held an enquiry at the Institute, Bowness, in connection with an application by the District Council for leave to borrow the sum of £4,000 for the purpose of sewage disposal. The scheme adopted by the Urban District Council being that known as the International Process, and embodies the treatment of the sewage in upward flow circular tanks and its subsequent filtration through specially prepared polarite filter beds. Mr. G. Gatey, the Clerk to the Council, stated that the normal population of Bowness was 2,062 and the maximum summer population, 4,500. It will be remembered that the Bowness District Council figured some time ago at the Appleby Assizes, the result of that trial being that a limited time was allowed for the carrying out of a purification works. The Council having visited and inspected many schemes, finally decided upon the International Process, as being best adapted for their District. Messrs. Lomax and Lomax, Civil Engineers, Manchester, being engaged to carry out the scheme.

HE WILL FIND IMITATORS.

By order of the Bradford Corporation 30,000,000 gallons of water contained in the Chellow Dean reservoir were on August 23rd run to waste, on account of the discovery of the decomposed body of a man, who committed suicide in the reservoir. The value of the water thus wasted is estimated at £1,200.

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Food and Sanitation.

SATURDAY, AUGUST 31ST, 1895.

SOAP AS A DISINFECTANT.

AMONGST certain insufferable snobs in whose ranks Thackeray was a past master, the ex-money-lender-failure-turned-club-window-literary-snob was never so happy as when abusing soap-boilers.

“As rich as a soap-boiler,” or “as ignorant as a soap-boiler” became familiar as household words in the mouths of the poor wretches who provided the public with depressing rubbish in *Punch* and other deadly-dull comic weeklies. It pleased them, and didn't hurt the soap-boiler, who has gone on doing his duty to the public until to-day he can give art a chance by putting upon our walls the most perfect specimen of the lithographer's art yet produced in the world as an ordinary poster. He could do even more for humanity than ex-“shent per shent” failures who made his name a by-word and reproach by leading those who shun soap to try its wonderful virtues. Ere disinfectants were known he supplied the public in an article of every-day

use with what modern science has proved to be a very efficient disinfectant.

Jolles, in the *Zeitschr. f. Hygiene*, xix. i. 130, 1895, states that he has experimented with soap having 0.041 per cent of free alkali. Solutions of from one to ten per cent. were prepared with distilled water and sterilized. Germs of cholera and typhoid fever, as also the *Bacillus coli communis*, were tested by him. In thirty minutes an eight-per-cent. solution completely destroyed the *Bacillus coli communis*. A six-per-cent. solution achieves the same result in an hour, while with half this strength of soap six hours are needed. A one-per-cent. solution used for six hours nearly effects the sterilization, although it is not wholly effective even after one day. With typhoid bacilli the process is twice as rapid. In twelve hours, a one-per-cent. soap solution destroys all typhoid bacilli. A six-per-cent. solution does the same in fifteen minutes. For a three-per-cent. solution to accomplish the same, two hours are required.

According to Swift, the man who made two blades of grass grow where but one grew before did more good for mankind than the whole race of politicians. The soap maker who causes man to wash twice where he only washed once, does a great deal more for his country's welfare than the whole tribe of log-rolling, elf-styled geniuses who weary the world with their literary wares.

THE WAYS OF LITTLE PEDLINGTON.

IN a classic Yorkshire story it is recorded how a bystander, unable to fully see a fight, made the following remarks: “Who's down now?” “Your Jack.” “Help the poor fellow up,” he promptly said. A few moments later he again asked, “Who's down now?” When the answer came, “The Stranger,” “Fettle his mouth with a brick,” was the quick counsel. There is a deal of human nature in the story, but the following instance at a meeting of the Pontypool District Council shows that, happily for the public welfare, the shielding of a friend who does wrong is dying out. The medical officer, Dr. Mason, reported: “Since sending in my monthly report a case of scarlatina, in Nicholas-street, has been reported to me. On making enquiries as to the origin of this outbreak, I find a family of four children in the same street with the disease, having been established about a fortnight, no medical man in attendance, and notification in abeyance. It is very odd that after distributing handbills and placarding the district that any person should plead ignorance of the Notification Act, but such is the excuse of the parents, who are treating these four cases of scarlatina to the danger of the whole of the inhabitants of your district. Section 3 of the Infectious Diseases Notification Act, 1889, which your Council adopted, deals very plainly with this offence, and I beg of you to take it into consideration.—Yours obediently,
S. B. MASON.”

Discussion followed respecting the advisability of proceeding against Mr. Pocock, the person mentioned in the Medical Officer's report, for not notifying an infectious disease. The Surveyor said that Mr. Pocock said that he did not know that the disease was infectious. The Chairman and others were in favour of supporting the Medical Officer by prosecuting Mr. Pocock. Mr. Ford, Mr. James and Mr. Griffiths were

in favour of not prosecuting on this occasion. Mr. Fowler proposed that Mr. Pocock should be prosecuted. Mr. Kelly seconded, saying that although he admired Mr. Pocock as a man, he felt it was the duty of the Council to support the Medical Officer. Mr. Ford moved a negative to the effect that Mr. Pocock should not be prosecuted. Mr. James seconded, thinking that a censure would be sufficient. Mr. Griffiths supported, and suggested that an advertisement should be inserted in the paper stating that the next offender would be prosecuted. The Surveyor said that one child had caught the infection by playing with the children. Mr. Eckersley thought that what the Council wanted was to make the thing known to the public. The question was put to the vote, six voting for the proposition and four for the negative. The proposition was then carried.

It is to the credit of the Board that it did not allow personal feelings to interfere with duty, and in this respect not a few public bodies outside of Pontypool might, with advantage, follow a good example.

TEETOTAL FALLACIES.

A CURIOUS thing about the teetotaler is that he will swallow stomach-torturing rubbish by the bottle, containing lead, sulphuric impurities, and even as much alcohol as some ales, and he will not only assert that he enjoys himself, but will assume a virtuous air over his folly as though he were entitled to be patted on the head and be received into confidential communication by that great Panjandrum with the little button on the top, the many-lettered Joss of the "Smitheries." But this curiosity is explained when we reflect that mankind are like sheep—as well fitted for flying as for thinking, and that they are, above all things, imitative, and rarely is a member of the family found who is as careful about the liquid he imbibes as he is about the cut of his coat, for instance. It is sad to reflect how many people went to John Williamson's house at Stockton—staunch teetotalers—and unknowingly put an enemy into their mouths to rummage around about their cerebrums and cerebellums, and come away disconsolate, having found nothing to steal, for at Stockton, on August 30, John Wilkinson, grocer and lodging-house keeper, was charged with selling ginger-beer containing 3·2 per cent. of proof spirit, being 1·2 above the amount allowed by law. He had previously sold herb beer containing an excess of spirit, but had been let off with the mitigated penalty of 10s. instead of being brought into court. The defendant was now fined 20s., and was warned that if he offended again he would probably be fined the full penalty of £10.

THE PEPSINS ON THE MARKET.

SEVERAL readers have commented on the curious results of Mr. Snow's investigations into pepsins on the market, first communicated to the *Pharmaceutical Era* and published in our issue of last week. The results, as is generally admitted, were astounding, but there seems to be some looseness in the methods by which the tests were made. Mr. Snow does not state at what date the pepsins were analysed, and, apart from any objections that may be taken to the way in which the analyses were carried out, there is the doubt as to whether they were from samples prepared according to the U.S.P. of a few years ago, which was 500 lower than the existing one. In addition to the fact that Mr. Snow does not state when his tests were made, he varies slightly the test indicated in the U.S. Pharmacopœia, 1890.

Firms of high reputation, such as Armour & Co., whose pepsin is well known in this market, guarantee all parcels to be the digestive strength claimed, and repeated experiments on this side have shown that their

pepsin is over, rather than under, the strength claimed. In testing pepsin so much attention must be paid to every condition, otherwise the least modification and variation of temperature would make a serious difference in the result. We, therefore, only printed the figures as given by Mr. Snow, and cannot vouch for them, as the tests were not conducted under our personal supervision.

BUTTER v. MARGARINE.

THE vaunted superiority of butter has received another severe exposure. Messrs. Jolles and Winkler have recently been investigating the subject from a bacteriological standpoint (*Zeitschrift f. Hygiene*, xx. 60). The best is made from carefully prepared, selected fat. This is exposed to a temperature of 113° F. in the process of manufacture. Artificial butter is made by adding to the thin, fluid fat produced one-fourth each of water and of milk, some milk gland and salad oil, then working up the whole. The entire process, from the veterinary inspection and approval of the carcasses to the choice of the milk, water, and other ingredients, ought to be done with the utmost hygienic precaution. Then such artificial butter is not only equal to good genuine butter in nutritive value, but is superior in being much less liable to become rancid and in having far fewer bacteria. The bacteria present are chiefly of varieties that are common in air and water. Although carefully sought for, tubercle bacilli and other disease germs were never found. Four peculiar species of bacteria were isolated from artificial butter, and two from the fluid fat used. These practically conform with our own investigations upon this important food question.

CASTOR OIL, COCOA NUT OIL, AND NITRIC ACID BRANDY.

THE Academy of Medicine, Paris, at its last session resumed the discussion of the alcohol question, and M. Laborde gave an analysis of the artificial essence known as "bouquet de Cognac." M. Ch. Girard had discovered, said the speaker, that this liquid is composed of castor oil, cocoanut oil, and similar fatty substances treated with nitric acid. As to its deadly effects, one or two centigrammes injected into a large dog of the Newfoundland breed caused death in less than a quarter of an hour. Alcohol (malt or molasses) is flavoured with this attractive mixture, and labelled and sold as "old cognac." M. Laborde also cited the "pure Jamaica rum" sold by an English house, of which a careful analysis, made by the late Professor Georges Pouchet, gave similar results. He pleaded that the army should be supplied with pure alcohol, and carefully guarded from such deleterious spirits as were too often sold.

THE INHABITANTS OF A DROP OF MILK.

IN a recent article on "A Drop of Milk," says C. M. A., in *The Glasgow Herald*, the constituents of milk were considered. In the following article the biological and not the chemical aspect of milk is dealt with.

A drop of milk is not a very large world: yet when we state that it may often contain more inhabitants than London, with its four millions, it will be admitted that it is a fairly densely populated one. But what is even a more striking fact than its gigantic population is the rate at which that population can increase. When kept at an ordinary temperature—and the influence of heat in this connection is an all-important one—this increase may amount in six hours' time to five-hundredfold; while if kept at a tepid heat it may increase within the same period of time to the extent of four-thousandfold.

What, then, it may be asked, are these inhabitants of a drop of milk like, with their marvellous capacity for packing close, and their wonderful power of multiplication? In the first place, it is perhaps needless to remark that they are very minute in size. A distinguished expert on this subject has remarked that four hundred billions of them could be spread in a single layer over one square inch. We could thus have spread out on this smi-

area a population one hundred times as great as that of London; and further, this could be done without any complaint of overcrowding. Each individual organism would get, not three acres, which certain politicians used to tell us was a necessary amount for each "human," but one four-hundred-millionth of a square inch, which is quite adequate for a "citizen in the commonwealth of micro-organisms." It is further needless to say that they are invisible to the naked eye; indeed they are only discernible under very high microscopic power. In some cases, however, they may be rendered visible to the naked eye, not singly, it is true, but in groups or "colonies." Such colonies are produced when these tiny workers in the economy of Nature are permitted to develop in some solid medium, such as gelatine. In this case they are compelled to develop on the same spot as the parent microbe, since their power of locomotion cannot be exercised. Possessed as they are with such wonderful capacity for reproduction, they very speedily become apparent in the form of patches of various colours. Of the smallest of them it has been calculated that 900 billions would only weigh the 1-28th of an ounce.

It has been said that they possess a wonderful power of reproducing themselves; indeed, this power is limited only by their surroundings. In about 20 minutes' time one of these minute organisms may develop this power, so that in a few hours each individual may give rise to a progeny numbering millions. Indeed, it has been estimated that the microbes descended from a single individual, if permitted to develop under the most favourable circumstances, would in less than five days occupy a space equal to that of the entire ocean. Need it be added that it is fortunate for the larger creation that such favourable circumstances never do exist?

Although these organisms are minute, it must not for a moment be imagined that they are all made after the one pattern; indeed, we find among the dwellers of this minute world a wide difference in their appearance, size, habits, and mode of reproduction. Some have a rounded globular form, others are rod-like, while others, again, possess a spiral or cork-screw shape. Again, considerable difference exists in the method in which they develop. Some follow the very simple plan of splitting themselves into two parts, and others have the faculty of growing in length. A common method, with a large number, is to throw off spores, small round, or egg-shaped bodies, which are formed inside the organism, and which in turn, under favourable conditions of heat, etc., develop into a full-grown microbe.

It has been pointed out that heat has a very important influence on their development; but the favourite temperatures affected by the different species differ very considerably. For most, the temperature of a swelteringly hot summer day (about 90 degrees Fahr.) is the most favourable heat, and a temperature some 50 degrees higher than this is sufficient to kill many of them. It is rather a curious fact that the spores, or young microbes, can stand much higher temperature, and possess generally much greater powers of resistance than the adult microbe. Indeed, it is quite amazing what some of these wonderful infants can endure in the way of heat and cold. To some even boiling temperature does not prove fatal, while a few are able to resist for a short time a dry heat of nearly a hundred degrees above boiling point. Some of them are able, on the other hand, to resist the lowest extremes of cold which have as yet been produced (several hundred degrees below zero).

Again, they exhibit a variety of tastes in the matter of their diet. Certain of them prefer to live on dead matter; while some, on the other hand, frequent living organisms. Just as we have in human society the useful and respectable classes and the idle and the vicious, so in this minute world we have organisms whose action is beneficent, and organisms whose presence is a source of danger. To the latter class belong the disease-producing microbes, or "germs" as they are popularly called. Now, fortunately, most samples of milk are free from this class of microbe. On the other hand, there can be no doubt that milk in the past has too often formed a receptacle for these deadly foes of humanity, and has been the means of spreading the diseases to which they give rise. The bulk of the inhabitants of our little world perform, however, useful functions. More especially is this seen in the preparation of the two great dairy products, butter and cheese, which owe their characteristic and highly-prized flavours to these minute workers. Lastly, we have a large number whose action, like a large section of human society, counts for very little one way or another. They are neither beneficent in their influence, nor are they, on the other hand, harmful. Let us examine more minutely some of the classes of microbes found in milk.

Everyone knows that if milk be allowed to stand for some time it sours, and that souring is followed by coagulation, and coagulation by other changes. These changes are, many of them, of a very complicated nature, and as yet little understood. Again, milk is often found liable to strange kinds of diseases, which consist in the development of coloured patches on its surface of a blue, yellow, green, red, pink, &c., colour. Now, all these changes are due directly or indirectly to the action of the minute denizens of the milk. A very large class, of which more than 10 different species have been already identified, are concerned with the souring process. This they effect by acting upon one of the chief constituents of milk—viz, the milk-sugar, and by converting it into an acid body (lactic acid), which, in its turn, coagulates the milk. Fortunately, this class of microbe does not possess very resistant powers, and is killed at a temperature of about 160 degrees Fahr. The keeping quality of milk may be therefore very much increased by heating it to this temperature. This is important, since the submitting of milk to the boiling temperature imparts to it a distinct flavour, which is much disliked by many. Another large class of organisms

act upon the casein, also a very important constituent of milk (the substance which composes the cheese). These organisms have also the power of coagulating the milk, but this they do, not by forming lactic acid from the milk-sugar, but by the production of a rennet-like substance. They play an important part in the ripening of cheese. Both classes of microbes are invariably present in milk in large numbers. This is not the case, however, with regard to those producing the peculiar coloured patches, which have been already referred to, and which are only found occasionally in milk. Of these we may mention the blue bacillus (*Bacillus cyanogenus*), which gives rise to a blue colour in milk, not to be confounded, however, with the blueness produced in the notorious London "sky blue," which we need scarcely add, is not due to the action of any bacillus whatever, but rather to the pump. The blueness of the milk, it should be pointed out, is not solely caused by this organism, but rather by its joint action along with another organism belonging to that class of ferments which produce lactic acid. It is thus an example of what is called *mutualism* or *symbiosis*. Redness in milk is also due to a most interesting organism—the blood-red bacillus (*Micrococcus prodigiosus*). It is also sometimes caused by other organisms. This blood-red bacillus is well known to bacteriologists for the rapidity with which it can develop under favourable circumstances, as, for example, on bread. It was no doubt the cause of the legend of the "bleeding host."

Sometimes the presence of certain kinds of microbes induces a bitter flavour, or a stringy or "ropy" condition in the milk, or a predisposition to curdle. One of the most striking, but at the same time one of the rarest, kinds of fermentation which milk is subject to is alcoholic. Alcoholic fermentation, as doubtless all our readers are aware, is caused by the yeast organism; and in certain parts of the world—viz, in the Caucasus and in the steppes of Russia—two beverages made from milk which has undergone this kind of fermentation have been long in use. These two beverages are known as *Kephir* and *Koumiss*. The former is made by the inhabitants of the Caucasus from cows' milk, by adding to it a special ferment—"kephir grains." These kephir grains are surrounded with a certain amount of mystery, since their origin is unknown. They have been used from time immemorial. Koumiss, although not exactly identical with kephir, is of a similar nature. It is made generally from mares' milk, and is especially valuable for invalids.

We saw that milk may sometimes contain disease germs. Of these undoubtedly the one most commonly present is the *tubercle bacillus*—that causing tuberculosis or consumption. It has been asserted by a high authority that 10 per cent. of the cows living in the neighbourhood of towns, where they are not treated properly, suffer from tuberculosis; and that 50 per cent. of these cows yield milk containing tubercle bacilli. That such milk is capable of planting the seeds of consumption in those partaking of it has been again and again proved.

Again, the famous *comma bacillus*, discovered by Koch, which causes cholera, has been found in milk, as have also the bacilli that cause typhoid fever. Of 50 typhus epidemics which Hart investigated in England, no fewer than 28 were found to be due to infected milk. The same observer has similarly traced 14 epidemics of scarlet fever and seven cases of diphtheria to the same source. It is a fortunate circumstance that all the above-mentioned germs are killed at comparatively low temperatures, so that in cases where there is any reason to suspect their presence the precaution of boiling the milk will be sufficient to remove all danger.

In conclusion, it may be asked—Where do all the microbes come from? Are they already in the milk when it comes from the cow's udder, or do they enter the milk consequently? Now there may be cases where the milk already contains microbes as it comes from the udder. This will be the case with tuberculous cows. But in the case of healthy cows it may be safely asserted that the milk as it leaves the udder is perfectly free from germ life; and if it were possible to collect it and save it from contamination, there is no reason why we should not keep it for a indefinitely long period of time perfectly fresh. Milk which has been artificially rendered sterile by heating it, and then kept in glass vessels plugged with cotton wool, has been found for years unchanged. When we reflect on the hundred and one ways in which milk may become contaminated with these minute organisms, it is hardly to be wondered at that it should never be free from them. Modern investigations have shown that the presence of these micro-organisms is well-nigh universal. They are especially abundant in the air of byres. Hence the hands of the milker and the teats of the cow readily become contaminated with them. Falling into such a nutritive medium as milk, what wonder that they rapidly develop and soon swarm in their millions in every drop of milk?

THE ARMY MEAT CONTRACTS SCANDAL.

The Sunday Chronicle, a journal which did good-hearted and necessary work in exposing the highly placed *poseurs* who burked the "Balaclava Fund," has published the following grave indictment of the army meat contracting officials. As our government departments are rotten and corrupt from top to bottom, and Ministers are but the mouthpieces of the various gangs, the following indictment will doubtless be ignored, as was the Balaclava scandal. But it is one that should be given every possible publicity. *The Sunday Chronicle's* special commissioner says:—

The charges in connection with this supply are (1) that the officers appointed to inspect the meat are generally incompetent and unable

to tell good meat from bad; (2) that some of them, in addition to being incompetent, have been and are being bribed by contractors; (3) that many if not nearly all of the respectable contractors have been driven out of the business by persecution and unfair treatment; (4) and that bad meat, unwholesome, and unfit for food, as well as meat which though wholesome is not according to contract, has been, and is being supplied to the army, and passed for issue by the officers charged to detect its unfitness.

As to the first charge, some very curious facts are forthcoming. The officers of the Army Service Corps who go about inspecting meat and other rations are supposed to be qualified for that part of their duty by having walked for a few months in the London Central Meat Market to receive instruction in the judging of meat. This not very exhaustive study is absolutely thorough beside that accomplished by the ordinary regimental officers whose business it is to receive and pass meat. Now, in the judgment and knowledge of these men is the only safeguard Tommy Atkins has for the purity and soundness of his rations. A few instances will show whether this is any protection at all. Some of the contractors allege roundly that the men are absolutely incompetent to decide questions on which those who have spent their lives in the trade would sometimes hesitate to dogmatise. One contractor told me that some time ago he bought forty heifers, perfectly healthy and good, some of which were intended for the supply of his regimental customers. An officer of the Army Service Corps happened to be lecturing on this subject at the particular station, and the carcasses of the heifers which had been sent were used for illustration. The lecturer passed some of the meat and rejected other portions; he actually passed the fore-quarters and rejected the hind-quarters of one and the same animal; and yet so entirely wholesome was the rejected meat that it was sent into the public market and sold by auction at a penny a pound more than the Government price.

In another case a contractor had a glaring illustration of the official method. He had a contract to supply a station in Yorkshire, and accordingly sent three sides of beef by goods train one Friday afternoon. On Saturday a Major, who was the inspecting officer, rejected as unwholesome some hind-quarters of the lot, but passed all the rest, including the fore-quarters of the same side. That is to say, although the hind-quarters were bad, the fore-quarters were sound. But either this gallant officer does not know good meat from bad, or three independent butchers, the sanitary inspector of a great Local Board, and a Government veterinary surgeon with a large practice, do not know their business. For on the Monday all these gentlemen examined the rejected meat, and declared it perfectly sound. The veterinary surgeon applied Eber's tests for signs of putrefactive changes, and found none; and he declared the meat "quite wholesome" and fit for food. If it were so on Monday, it must have been so three days before. But the Major, who did not know good meat from bad, was the only judge; and the contractor had to suffer a considerable loss on this transaction without the least hope of redress. Consideration of these and many other facts led someone in the meat trade (in the columns of the *Meat Trades' Journal*) who signed himself "Scrutator," to challenge Major Stacpole, of the Army Service Corps, to a test of his efficiency. The Major, in lecturing on meat inspection, had said he dared lay a wager that refrigerated meat was to be found in the guise of English beef in every other butcher's shop in London. "Scrutator" offered to take the wager, and to stake any sum up to £1,000 that the Major "cannot distinguish meat which may be fit for issue to the troops (according to the present army meat contracts) and that which is not; and further, that the Major cannot distinguish the flesh of foreign cattle slaughtered in Great Britain from that of British bred and fed cattle." To this the Major did not reply—it is fair to assume that by his position he was prohibited from replying—and, though a clergyman took up the cudgels for him, "Scrutator" would have his quarrel with the official only, and so nothing came of it.

There are no reasonable signs that the inspecting officers are thoroughly fitted for their difficult work, and, therefore, there is no proper check on the soldier's food. But the contractors are subject to so many harsh regulations, and so much persecution, that respectable traders will rarely have anything to do with such matters. Let me show one instance. At a station in the Midlands some time ago a contractor was tendering the full quantity of frozen mutton and fresh killed beef to fulfil his obligation. This he believed to be in accordance with his contract, and accordingly he was surprised one day to hear that the officers of the station, who had been told that only 60 per cent. of frozen mutton could be tendered, had rejected three carcasses of New Zealand sheep on the ground that fresh English mutton ought to be supplied in the proportion of 40 per cent. The contractor promptly appealed to the General Officer commanding according to the conditions of the contract, and tendered the same sheep for issue next morning, when they were again rejected, and the military authorities thereupon purchased 131lb. of fresh mutton in the town at a cost of 2½d. a pound over the contractor's price. The frozen sheep were afterwards sold for a very small sum, and the contractor promptly made a claim of £4 13s. 4d. for loss and expenses due to the action of the authorities, contending that he based his contract on the specific assumption that the mutton tendered could be imported frozen mutton, though only 60 per cent. of the total issue of beef and mutton might be frozen and refrigerated. After this difficulty arose on the third of one month, a letter signed by the Deputy Assistant Adjutant-General was sent to the contractor, declaring that only 60 per cent. of the mutton might be frozen; a month later the same officer sent a letter saying that "all the mutton may be frozen."

Thereupon the claim was pressed, and after some delay an officer went to see the contractor. He proved to be an inspector of rations, and without beating about the bush he said, "Now do you really think it would be worth your while to press this matter?" "And," said the contractor to me, "I knew it wasn't. I knew if I did I should always have them down on me; I should be fined the £10 on every available chance, and worried everywhere. So I said to him, 'No, you're right, it isn't worth while,' and I gave him a receipt for my claim without receiving a penny, and away he went."

Now, the contention is that few men who respect themselves and try to conduct their business honourably, are willing to endure such petty persecution at the instance of men whom they regard as incompetent, and that the contracting is consequently too often left to unscrupulous and dishonest traders. These men are able to make large profits by evading their obligations, supplying bad or at the least inferior meat wherever they can secure the connivance of the authorities. This is a more serious question than any we have yet dealt with; and the statements to follow are made with a due regard to their gravity.

We come now to the experiences of yet another contractor, who spoke with the utmost frankness. "Bribery?" he said. "Well, that's what you call it, but if you want to get along you have to use palm oil. When I first took these contracts I lost £3,000 in six months. They worried the life out of me. My meat was the best I could buy for the money. I was conscientious, and ran as straight as an arrow. But good meat was rejected again and again, I was fined by these incompetent inspectors for default of my contracts so many times that I forget the number, and I was put to no end of loss and trouble, when all the time I was trying to do my best. Well, then I got a big contract to supply a very large and important station, and I thought to myself it was time to see what could be done. I could not afford to go on losing, yet there seemed no chance of satisfying anyone on the old lines. So I went off to the place, and in the meat store I saw an officer. By and bye he came up to me and said, 'Are you the new contractor?' I said I was, and he replied, 'Ah, come to my office; I will explain things to you. So I went to the office, and he told me the probable strength to be supplied, and this, that, and the next thing, and wound up with the remark, 'And I pull the strings here.' 'Oh,' said I, 'I'm glad to know that. And what might your weakness be?' Angry? Not he. 'Well,' he said, 'I'm very fond of bicycling, only good bicycles are so very expensive, and—' 'Ease your mind about that,' I said. 'You shall have one right away.' So he did. I had a thoroughly first-class bicycle put on the rail at once, addressed to him, and no more was said. I tell you I had no trouble that six months, and I got my £3,000 back and a bit over. It was not that I sent bad meat; but I did not send them sirloin, you can imagine. Well, at the end of the contract I found this man was leaving the camp; so I went over, stood him the best dinner I could buy for money at the biggest hotel in the place, and after dinner I produced a purse which was filled with sovereigns—there must have been nearly a hundred in it—and said I could not let him leave without offering him such a proof of my regard for his courtesy and consideration. And he took it, sir, without a word of protest.

"Now, I don't like doing this sort of work. I have a large business, and I conduct it honourably, though I say it; but, having entered on this work, one doesn't want to do it at a loss. And as so many of the contractors have no scruples, and use palm oil right and left, one is compelled to adopt the same sort of method or give up the business. Here is an instance of what is done. Tenders were wanted for an encampment some time ago, and I applied. But though I sent in my form in the ordinary way I submitted no prices. When the tenders were gone through by the authority in charge, the figures on my form were filled in at the right amount, and I got the contract. Well, the officer responsible got £10 for doing that; a ten pound cheque was made out to him, and he received it, and it passed through my bank and appears in my bank book in the ordinary way."

And the bank book was produced, and, sure enough, on a given date there appeared the entry of £10 in a name which is in my possession. The foil of the cheque book was also produced, and a corresponding entry of the drawing of such a cheque appeared. If this sort of thing goes on, it matters little whether inspectors are competent or not; if they, or even some of them, are venal and subject to corruption, Tommy Atkins' food is not likely to improve. I don't say that all the contractors who have these powers send actually bad meat; they may send inferior meat, or the cheaper and useless portions of a carcass, and so reap large profits even at the contract price. For instance, I have seen a quantity of "plates" of beef—the "plate" being the skirting, or flap, or the piece which extends from the ribs under the belly of the beast—perfectly fresh and wholesome, being sent away to a regimental station on contract. The beef should be supplied in quarters only for rations; and pieces of this kind should not be received. But they were despatched, and the contractor said he knew they would be received and issued, and probably he had his own reasons for his confidence.

Worse remains, however. All the contractors are not content with the supply of inferior meat. Some supply absolutely unwholesome stuff, and it is passed and eaten. There can only be two reasons for the issue of such stuff; either the inspecting officers are incompetent and cannot tell good meat from bad, or they have been "got at." Now it is notorious among butchers that meat unfit for food, stuff which could not be exposed for sale in any shop, is served up to our soldiers day after day. I am assured that absolutely unwholesome stuff has been supplied to some of our great camps, and that contractors have reaped huge

profits out of such jobs. Again, the Government prohibits the granting of tenders to certain men, but I am definitely assured that these men, or some of them, do obtain tenders under assumed names or in the names of figureheads. The authorities may be ignorant of the fact, but if so it is very little to their credit. On the other hand, things have been done by such contractors which imply either actual connivance or hopeless ignorance on the part of the officers. The horrible story which I am going to tell is related by the actual eye-witness, Mr. William Ramsden, an ex-president of the Liverpool Butchers' Association, a gentleman of the highest repute in Liverpool and among his fellow traders throughout the country. He is not a contractor, and has no interest in any contracts, and his statement is this:—

Some time ago when staying by the seaside he was driving out one Sunday in the direction of a militia encampment, and he met a man whom he knew as a meat contractor who had been black listed, but who still contracted under assumed names. This man had a cart with him, and in it the carcasses of two cattle which had died or had been slaughtered owing to disease, and had been buried. They had been three days under the earth, when they were exhumed by this fellow, dressed and washed, and taken to the camp for issue under his contract. This story he actually told with his own lips to my informant, who saw that the carcasses as they lay in the cart were absolutely yellow, unwholesome, and unfit for food. But they were taken to the camp, were passed by some official in whose competence and honour lay the militiaman's only protection, and were subsequently seen in the stewpots cooking preparatory to the ghastly meal, with the yellow liquid fat covering the ground round about.

The same rascal who perpetrated this outrage for his own profit also tells—and glories in the telling—a story of an old mare which was very ill and seemed likely to die. The contractor saw a larger profit in her than the knacker would give him; so he vows that he had her slaughtered and dressed and presented for issue to the soldiers. One of the orderly men at the issue said to him, "Where's your old mare?" He replied, "Oh, I've had to have her sent away." "I shouldn't be surprised," said the sergeant, "if you presented her for issue;" and "little did he know," says the contractor, "that he was issuing her at that very moment." This story was told by the man himself to an unimpeachable witness, and the two incidents are a shocking commentary on the system. Of course, such a man trusts to deliberate bribery to effect his nefarious work.

The inefficiency of the inspection has been shown, I think; and a very great suspicion has been cast on the honour and integrity of some of the men whose duty it is to inspect and issue the meat. Moreover, it is shown on the confession of the trade that the majority of the respectable men have left army contracting severely alone; and there is ground for believing that bad and even unwholesome meat is supplied to the soldiers in some parts of the country; that in other words, our soldiers are being deliberately poisoned. Surely, therefore, a vigorous inquiry should be held into the whole business.

Major Stacpole—against whom be it understood no imputation whatever is made, save that his training, in common with that of his colleague, is said to be insufficient for this part of his duty—says that owing to the system of inspection there has been an improvement in the quality of the supplies; but there is evidence to the contrary. The charge is that men get bad meat, or inferior meat, instead of good beef. But in the words of "Scrutator," it is urged that this is because

"They have treated contractors of the highest possible standing in such an abominable manner that first-class men almost decline to have Government contracts at any price; the consequence being that many of the contracts are taken by individuals of no repute, who often tender in fictitious names to hide their identity, and the troops suffer accordingly."

If contractors were fairly treated the best men would tender, it is contended, and the swindling and bribery would cease, because the competition would be fair and above-board. Therefore, for the protection of the contractor against unjust and tyrannous treatment—and so to make it unnecessary to try to escape such treatment by improper means—the National Federation of Butchers and Meat Traders seeks to effect a reform, and put the following question to all candidates at the last election:—

Are you in favour of equitable conditions in all Government contracts so that in the event of a rejection of any goods whereby a contractor may consider himself aggrieved he may have the opportunity of appeal to an independent Board, to be formed of three disinterested persons, one to be appointed by the Commanding Officer, a second by the contractor, and a third by these two, and their decision shall be final, and the cost of said arbitration shall be defrayed by the party against whom the decision shall have been given?

The principle therein involved is the basis of the Federation's policy in this matter. The argument is that the inspecting officers should be thoroughly practical men, both in the interests of the troops and of the contractors; there should be power of appeal by the contractor to an independent tribunal; there should be no harassing, and fining, and persecution without due cause; it should be made possible for the best traders to tender; and before a tender is accepted from an unknown man the authorities should write to the Butchers' Association of his district asking for information as to his standing. The bogus and swindling contractor should be made impossible, and it is the business of the War Office to prevent our soldiers from being poisoned by the stuff such men supply. Moreover, the corruption of military authorities should be sternly checked. Surely members of Parliament should join the meat traders in demanding the complete reform of the system by these means.

ADULTERATION PROSECUTIONS.

BEESWAX.

AT Newport, on Aug. 28, Charles Simmonds was summoned for selling adulterated beeswax. Detective Faulkner proved having purchased what purported to be beeswax at defendant's shop. The analysis showed that it only contained five per cent. of beeswax, the principal ingredient being paraffin, of which there was 87 per cent. In cross-examination by Mr. Lewis, witness said that beeswax was a drug, and was used in prescriptions. Mr. Lewis contended that beeswax was used for cleaning floors and furniture, it was used in pills, but simply for binding purposes; therefore, it could not be properly described as a drug. It was a most unwarrantable prosecution. The Bench ordered defendant to pay the costs, the Mayor expressing the opinion that there was no fraudulent intention, but that it was merely a technical offence.

VINEGAR UP TO WOOD.

AT the Swansea Police Court on Monday, Wm. Tovey, a grocer, of Landore, was summoned for selling adulterated vinegar. It, however, transpired that the vinegar was sold as "distilled wood vinegar," and Dr. Seyler (acting borough analyst) having said, though the vinegar was far from pure, and was hardly vinegar at all, yet it would come within the description on the label. The case was dismissed.

FOLLOWING THE ADVICE OF THE PLANTAGENET.

WHEN Sir William-Quibus-Flestrin-Lineal-Descendant-of-the-Plantagenets and Rightful-Heir-to-the-English-Throne Harcourt showed the publican how to sell more water at the price of whisky than he was already doing, we said the imposition upon the public would spread. At Dewsbury, on September 2nd, Hinchliffe Hallas, landlord of the Wilson's Arms, Battysford, Mirfield, was summoned for selling adulterated whisky. Inspector Newbould said that on August 9th he bought half a pint of whisky at the defendant's house and sent a portion of it to the analyst at Sheffield, with the result that it was certified to be 27.5 under proof. That showed 3.3 parts excess of water. There was a tremendous quantity of adulterated whisky in the district. Defendant said that the whisky was all right when he put it into the keg, and it must have lost a degree or two by standing. He was fined 20s. and costs. We do not wonder, knowing the wretched ignorance of the Inland Revenue chemist, that there is a tremendous quantity of adulterated whisky in the West Riding of Yorkshire. How much longer will the "notice"-dodge that fosters the fraud be tolerated? In this and in "Swipe" beer there is a real opportunity for a patriotic statesman to benefit agriculture and public health, for the spurious filth made from trash is not only injuring barley growing and malting, but is sold to the public, to the detriment of the health of the consumers, at as high a price as if it were a pure article. Messrs. Harcourt, West, Gladstone, and Co. have some serious crimes against English trade and public health to answer for.

THE LIVERPOOL HEALTH COMMITTEE AND CONDENSED MILKS.

DR. HOPE reported on August 29 that, having regard to the varying constituents of the material sold as condensed milk, he caused samples of each of the brands at present on the market in Liverpool to be purchased for analysis. It would appear, he said, that in some instances almost the whole of the cream is abstracted, and the public should take careful notice of the manner in which the tins are labelled, as certain of the preparations do not contain the essential constituents of milk. Mr. Purcell inquired if some action could not be taken against the manufacturers. Dr. Hope said that these things were very ingeniously labelled. The public made use of the various preparations under the impression that the tins contained milk. They did contain a certain proportion of milk, but all the cream, as would be seen, had been removed. In the same way there were preparations called egg powders sold, and a certain class of people gave these powders to their children under the impression that they were using the equivalent of eggs. Similarly they used these "condensed milks" under the impression that it was milk. As a matter of fact it was nothing of the sort. The Chairman: What is to be done? Dr. Hope: It is for the public themselves to take a note of this report. Many of the tins contain exactly what is stated on the labels; in other words the tin contains what the label states. Mr. Taggart: But are the preparations injurious to health. Dr. Hope: It is a perfectly harmless preparation, but it contains no nutriment. If people will read what is written on the tins they will be able to discriminate between what is good and what is bad. The Chairman hoped the press would publish the medical officer's report, as it was most important that the public should be informed of this matter.

ADULTERATION OF HONEY AND OLIVE OIL IN FRANCE.

LETTERS have been exchanged between the French Minister of Agriculture and M. Naquet, a well-known deputy, regarding the suppression of adulteration of certain articles of food, especially honey and olive oil. M. Naquet had intended to interrogate the Minister in the Chamber on the subject, but the length of the discussion on the alcohol monopoly prevented this course. In his letter opening the question he draws attention to the fact that besides being used in pharmacy, and as an article of food, honey serves also for making gingerbread, as well as certain sweets and fermented liquors. Unfortunately, he says, adulteration has caused the article to fall below its real value, and the industry of apiculture is threatened with ruin as a result. The deputy asks that, if there is no other means of preventing the fraud, a law should be passed prohibiting the adulteration of honey and olive oil, similar to those already existing in respect of wine, butter, &c. As regards olive oil, the most varied mixtures, it is said, are now being sold under that name. M. Naquet suggests that the law should contain two penalties—one, the most severe, against adulteration injurious to health, and the other for merely commercial falsification. In reply, the Minister draws attention to the fact that glucose syrup is the article most in use for adulterating honey. The scientific processes for discovering the fraud are, he adds, well known, and it can always be detected by an experienced chemist. The law of Germinal, Year XI., and the decree of 1859, enable a commission of competent men, chosen amongst members of the Council of Hygiene, to inspect the purity of products offered for sale by pharmacists, druggists, and grocers, at least once a year, and, in fact, as often as may be required. Prosecutions follow these inspections when necessary.

Circulars are issued from the Ministry of Agriculture each year regarding any special articles that require attention, and a special note will be devoted to honey in the next issue. Similar protection is given to olive oil by a law passed in 1884. This trade is far more important than that of honey, and it has suffered much prejudice by the substitution of cotton, colza, nut, and other oils of inferior quality. It appears that in 1884, three chemists of high standing—M. Müntz, Professor of the Agronomical Institute; M. Milliau, Director of the Technical Laboratory at the Ministry of Agriculture; and M. Durand, Director of the Central Chemical Laboratory at the French Admiralty—made researches as to the processes to be employed for detecting adulteration in the various kinds of olive oil. They found that most of the old processes of analysis, based on colouring and on ordinary reactions frequently gave inexact results. As an example, the pure Tunisian oils were on one occasion declared to be adulterated. The chemists in question found that the only true way to proceed was to test the oil after it had been filtered. They suggested a number of analytical processes. Amongst other points to be considered, they mention the density, solubility in alcohol, the sulphuric acid reaction, the congealing and melting points, the saturation of the fatty acids, &c.; also the application of special tests, such as nitrate of silver, hydrochloric acid and sugar, &c. The reply of the Minister terminates by saying that the existing laws offer all possible guarantee, and if the suppression of fraud does not receive more support in the law courts, it is often due to the fact that the experts do not always bring forward certain and incontestable proof.

ANOTHER WAY OF LOOKING AT IT.

THE Food and Drugs Act as observed in Great Britain occasionally meets with obstructions in the prosecution of offenders. The sophistication of olive oil is a matter which is proving quite a conundrum with the authorities. The imports of this article are largely from Italy, and of ten samples alleged to be pure olive oil, eight contained a small per cent. of cottonseed oil. It was a debatable question as to how to punish the "innocent offender," the mixing having been done in Italy where the jurisdiction of England is nil. The court sitting in judgment concluded that the English vendors had been imposed upon, but also decided that there had been a violation of the law, and as the original vendor, the Italian exporter, could not be punished, a fine must be adjudged against the local trader.

This is another instance of discriminating against an American article of commerce, recognized by epicures as healthful, and delicious to the palate, preferable to olive oil. The complaint should be entered that the greater offence committed in the case cited was in the act of adulterating the cottonseed oil, a habit the Italians have practised for some years, as our exports clearly demonstrate.

Faint, Oil and Drug Review.

AMERICAN CANNED MEAT.

THIS summer has furnished fewer fatalities from the consumption of tinned foods than has been the case for some years past. This is in a large measure due to the direct public attention we drew to the alarming frequency of ptomaine poisoning by tinned foods, and to the prompt steps taken by the U.S. Board of Agriculture, which is a strange contrast to our native wretched farce lately governed by Mr. Gardner and now directed by Mr. Long. The *National Provisioner*, ever alert to serve the interests of the American canned meat trade, heard that Secretary of Agriculture Morton intended to recommend

the abolition of Government meat inspection. The Secretary denies the report in the following letter, and conveys the news that he will recommend that the packers who export to foreign countries be obliged to pay the cost of inspection, but that it be continued as heretofore under the control of the Department:—

"U. S. Department of Agriculture,
"Office of the Secretary,
"Washington, D. C., Aug. 20, 1895.

"To the Editor of the *National Provisioner*."

"Sir,—Referring to your letter of the 19th inst., I have never proposed, and do not expect to recommend to Congress, that the methods of meat inspection be changed so that the inspection shall be conducted by the packers themselves. There are two distinct branches of the meat inspection in this country, one of which is conducted for sanitary reasons, and is designed to protect the health of the customers both in the country and abroad. The other is the microscopical inspection for trichinae, which has been adopted for commercial reasons, and which is only applied to meat exported to a few Continental countries, which have required it in order to admit our pork products.

"As our own people do not get the benefit of this inspection, and it is made entirely to benefit those who ship pork to certain European markets, it appears to me that this trade should pay for the inspection. Such change, however, would not mean that the inspection should be made under the direction of the packers. It would be made by the Government, exactly as it is at present, but the packers would pay into the Treasury of the United States a certain specified sum for each one thousand pieces inspected. The great bulk of our exported meats goes to Great Britain, where no microscopical inspection is required, and where the trade is not harassed by unnecessary restrictions. The prohibition against our pork products, which was made for the alleged reason that they were not microscopically inspected, led to the adoption of this method of inspection, in order to regain the markets lost by this prohibition. It has, however, been a very difficult matter to regain these markets, as the governments to which the microscopically inspected pork has been sent have established a second microscopic inspection of their own, as well as other restrictions, which have been almost prohibitive in their character.

"If the continental trade is worth anything to our shippers of pork they should be willing to pay for the microscopic inspection, and if this trade is not sufficiently profitable to stand the expense of this inspection, then the shippers should use their efforts in further developing the markets of those countries which, like Great Britain give our exporters a fair opportunity to sell their goods,—Yours truly,

"J. STERLING MORTON, Secretary."

Fancy one of our Government officials having the common-sense to make such a statement to a trade journal! We shudder at the thought of what would happen to the Constitution if he did. But then, America is the land of "jobbery and the spoils of office," and England is not, so we can boast of more asses to the square yard in our Government offices than any country in the world, and wear blinkers when we are confronted with the object lesson of Joseph and his brethren, and the cordite transactions.

STERILISED MILK.

THE value of sterilized milk as a food for babies and invalids is practically considered by Blasius and Beckurts (*Deutsche Vltjhrscr. f. öf Gsdhtspf.*, xxvii., 1895, p. 527). Observations and tests of that produced by a large dairy in Brunswick show excellent results from feeding with sterilized milk. It is so well prepared as to be of constant and even quality, and no fat (of notable amount) is separated from the emulsion. It is furnished at the very low price of ten pfennings (two cents and a half) for one-third-litre bottle. Being completely sterilized, it keeps for several weeks at least. Accidents in preparation (including imperfect cleaning of bottles and apparatus) cause only a small fraction of one per cent. of the filled bottles to spoil. These results show that the purveying of such excellent milk may safely be left to large establishments, which are adapted to taking care more constantly and thoroughly than most individuals can. Although the Soxhlet method of individual preparation is excellent, this dairy purveying is preferable for the masses, especially as the milk procured by poor people would otherwise be apt to be anything but good or easily sterilized.

At this well-managed dairy Flaack's process of sterilization is used under chemical and biological control. The milk is obtained during the earliest morning hours. Then it goes through a centrifugal machine which makes from six thousand five hundred to seven thousand revolutions a minute. This cleanses the milk, and yet causes only very slight physical or chemical changes. The microbes become reduced thereby about one-third in number, and the specific gravity diminishes somewhat, while the proportion of fat and also that of total solids and water are correspondingly increased. Thence the milk, constantly agitated so as to keep the fat evenly mixed in, is heated by streaming steam to a temperature of two or three centigrade degrees above the boiling point. Thereupon it is put into sterilized bottles, each holding one third of a litre, and closable by a porcelain plug and rubber ring fastened down by wire. After closure of the bottles, the principal sterilizing is effected by the employment of steam heat for ninety minutes. Five hours are required for the entire process, from the washing out of the bottles to the

completion of the final sterilization. Then the albumin has become completely converted into peptone and the milk contains no living bacteria.

An improved automatic rubber cap for bottles used for sterilizing milk is recommended by Stutzer in the *Centralblatt für allg. Gesundheitspflege*, April, 1895, and is supplied by Ollendorf and Wilden, of Bonn. In the middle of the top of the cap is a ventilating opening allowing air to go out, but not to flow inward, since it closes tightly on pressure from without. Thus it causes the cap to sink in and thereby close the bottle automatically when sterilization is completed and the milk cooling. Its merit is that all this is effected entirely without the intervention of hands or mechanism, and it is said to work perfectly after repeated usage.

SARDINE POISONING.

MR. BAXTER, on August 30, held an inquest at the London Hospital respecting the death of Joseph Burton, 54, a road sweeper.—Sarah Burton, the widow, said that on Friday she was given some sardines in a tin by a boy in the City, where she was selling matches, as the deceased had not much work. Her husband had three of the sardines for his tea and his little daughter had a portion of one. About ten o'clock he complained of pains in the stomach, and was subsequently seized with acute diarrhoea and vomiting. On Saturday morning he went out to work, but had to return, as he was ill, and on Sunday night witness managed to get him to the hospital, where he died on Monday night. Witness's little girl was also attacked in the same manner as her father, but recovered. The remainder of the sardines were given to a neighbour named Jones. The sardines did not affect Mr. and Mrs. Jones or their children.—After further evidence, the coroner said there was very little doubt that the sardines were the cause of death. If the man who gave the sardines to the boy knew they were bad, it was a most diabolical thing, but there was nothing to show that he did.—The jury unanimously agreed that the sardines were the cause of death, and returned a verdict of "Death by misadventure."

FILTERED MILK.

THIS is a luxury unadvertised as yet in England, but in Berlin it is considered as necessary to cleanliness as washed hands. Like a few ideas it has made the fortune of the man who first thought of it. Fourteen years ago the milk of Berlin was even as the milk of London, and the medical journals have recently been telling us that their medical analysis show that dirt of every imaginable sort finds a refuge in that. The German cows and cowherds were dirty, the byres were filthy, the carts in which the milk went to market and the cans in which it was carried round the streets were left to take care of themselves. If the milk was pure and sweet and clean, it was more by good hap than will. Its whiteness covered a multitude of specks. It occurred to Carl Bolle that it was rather a pity that babies, whose food was nine-tenths milk, should have so little care taken of their one article of diet; and he set to work to secure clean milk from clean cows, to filter it, and to send it out under such circumstances that once it left his dairies it could neither deteriorate nor be adulterated. He would only buy of farmers who agreed that he or his representative should have the right at any time, day or night, to inspect the cows and their sheds, and to watch the milking. He guaranteed to his customers that the milk he supplied should be absolutely pure and absolutely clean, and invited tests. The idea caught on at once. From a modest beginning of two carts, Bolle soon found himself at the head of an enormous business, which now has 160 milk vans, a stud of about 300 horses, and employs something like 1,000 persons. With the growth of the business the original idea has been carried out the more thoroughly. The cows now have to be fed on a stated diet, and a police officer, who is also a trained veterinary surgeon, with a staff of trained inspectors, sees that the farmers attend to the terms of their contract both as to diet and cleanliness. The

sweet milk, as soon as it reaches the dairy, is subject to a process of cleansing by gravitation through sand filters. It is then passed into carefully washed pitchers, properly stoppered. Milk intended for infants is sterilised by means of an elaborate system of filtration at a low temperature. This sterilised milk is then sent out in glass bottles with caoutchouc stoppers. The milk vans which supply casual and small purchasers are of special construction. Bolle makes his own ice, and his vans are, practically, sealed casks surrounded with ice, so that the milk is kept cool on the hottest day, and as it can only be drawn off by the taps, the immediate vendor has no chance of tampering with it. The latest novelty in the vans is a penny-in-the-slot arrangement, whereby poor customers can serve themselves. About 18,000 analyses are made in the laboratories attached to the milk shops in the course of a year; and in the result Carl Bolle is able to ensure that every pint of milk that reaches his customers is as pure and wholesome as care can make it. And he has found, as he have said, that cleanliness spells fortune.

NOVEL TREATMENT FOR ACUTE ALCOHOLISM.

A YOUNG wife had just settled in her new home. All seemed fair and promising, but one night her husband came home very late and staggered into the house. His wife was greatly shocked, told him he was ill, and to lie down at once. He did so. His face was reddish-purple, his breathing heavy, and altogether he was a pitiable-looking object. Mustard plasters were applied to his hands and feet. When the doctor came, felt his pulse, examined him, and found that he was drunk, he said:—

"He will be all right in the morning."
 But the wife insisted that he was very ill and severe remedies must be used.
 "You must shave his head and apply blisters," she urged, "or I shall send for someone who will."
 His head was accordingly shaved closely and blisters applied. All night he lay in a drunken sleep, notwithstanding the blisters.
 About daylight he awoke to a most uncomfortable consciousness of blistered agonies.
 "What does this mean?" he said, putting his hand to his bandaged head.
 "Lie still—you mustn't stir," said the wife; "you have been very ill."
 "I'm not ill!"
 "Oh, yes, you are; you have brain fever. We have worked hard with you all night."
 "I should think you had," groaned the victim. "What's the matter with my feet?"
 "They are blistered."
 "I'm better now. Take off the blisters, do," he pleaded, piteously.
 He was most uncomfortable: his head covered with sores and his hands and feet still worse.
 "My dear," he said, groaning, "if I ever should get sick in this way again, do not be alarmed or send for the doctor, and, above all, do not blister me again."
 "Oh, indeed, I will. All that saved you was the blisters, and if you should have another spell, I should be more frightened than ever, for the tendency, I am sure, is to apoplexy, and from the next attack you would be likely to die, unless there were the severest measures used."
 From that day he has not had another attack of drink.

—*Dover's Journal.*

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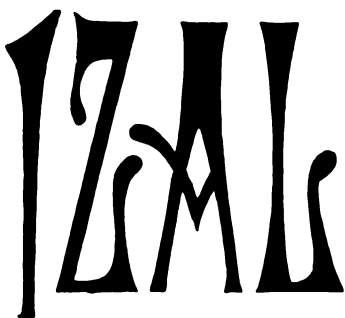
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IZAL CREAM. Bland and emollient. A very convenient antiseptic application for the skin, and useful for rubbing on the bodies of fever patients during the period of desquamation, thus preventing infection from the scales. In tubes, 1s. each.

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decay of the teeth and sponginess of the gums. Its daily use will keep the teeth sweet and the gums healthy. In boxes, 1s. each.

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Food and Sanitation.

SATURDAY, SEPTEMBER 14TH, 1895.

CONTRASTS.

At this moment France is probing half-heartedly the foul sore of its railway swindles, in which senators, deputies, and prominent public men are being revealed as mean thieves. We, of course, have nothing of that sort in England, and our company "nobbled" and quack-medicine-bribed mighty newspapers are accordingly just now busy asking us to thank God for our excess of virtue. But it does not add to the unctuousness of our self-glorification that at the moment we are asked to step forth as shining Pharisees a swindle of even a more shameful kind than the French railway one has been launched by our Government. A gang of adventurers, with the hope of getting extraordinary profits,

invested money in Uganda. They made a mistake, and find that without a railway they cannot hope to get any return for their capital. Obviously, therefore, it was their business to build a railway or take the consequences of a bad investment, and lose their money. But the sharpers know a game much smarter than that. Our House of Commons is full of their nominees, connections, and shareholders, so "honourable gentlemen" calmly resolve to oblige these speculators by building a railway for them from the coast to the interior at a cost of *two and a-quarter millions, which railway, it is estimated, will saddle English taxpayers with an annual loss of £50,000.*

A Conference organised by the late Government recommended the construction of light railways to promote agricultural welfare in many parts of this country, but the Liberal Ministry pleaded that there was no money for that laudable purpose. The recent election saw our Right Honourable and Honourable Friends of both parties shouting themselves hoarse about what they would do for English agriculture and trade generally. Mark the way they do it. *There is no money for needed light railways at home, but two and a-quarter millions can be found instantaneously to be thrown away upon filthy savages abroad.* Of course, our Right Hon. and Honourable friends will be too high-souled to pocket any pickings in the shape of commissions, etc., on the swindle, but the whole affair is shameful, and a disgrace to the House of Commons and the Ministers who have the effrontery to propound such an impudent robbery of the English taxpayer. But it is an object lesson proving what we have times over advanced in this journal. We are often taunted with being a nation of shopkeepers, which to our thinking is about the most honourable thing about our country, and it behoves us to send those who are the backbone of our nation and who pay its heavy taxes to the House of Commons, and purge it of the nobles, lawyers, and needy swindlers who have turned our House of Commons into such a den of iniquity. It would not cost per year one-half this £50,000 that is to be wasted on stinking savages to set up adequate machinery for enforcing the Acts to suppress adulteration of food stuffs, and secure better trade for our dairy farmers and other home industries, and the money would be expended for the public benefit. But our Honourable Friends' friends could not cut up any "com." on anything so honest and public benefiting, and quack explorers would have no opportunity for self-advertisement. The two and a-quarter millions would do some good to the public if it were expended in harbour improvements and loans to encourage our neglected, and in many cases starveling fisheries, and

in the establishment of means for conveying the wholesome food which teems round our coasts to inland towns, where fresh fish can only be had at famine prices.

But our agriculturists, our fishermen, and our people generally are not interesting. They are not all dirty, greasy, abominable-smelling savages. They are only long-swindled British taxpayers. So we ought to thank heaven that we are not as the French, for they, at least, cannot boast of "Cordite" and Uganda. This Ministry contains men who have been particularly assertive out of office about agricultural depression, and who have waxed eloquent over the necessity for light railways in this country. Why are they dumb about this Uganda swindle? Years ago a keen observer described Lord Salisbury as a lath painted to look like iron. The deluded agriculturists, who have done so much to place him in power, are seeing the paint rubbed off in a fashion that is not only calculated to astonish their eyes, but to lighten their pockets. We had scant love for our late Government, but judging from this beginning of the new one, those concerned with developing and fostering home industries have jumped out of the frying-pan into the fire.

But Mr. Chaplin and Mr. Long are at least, so they say, staunch friends of English agriculture, and, confronted with this Uganda swindle, they will, of course, resign—as big salaries cannot be an object with either of these gentlemen when compared with this betrayal of the English agriculturist and their own tender consciences.

THE SUBSTITUTION AND IMITATION EVIL.

THE day is not far distant when manufacturers of high-class goods will be compelled to consider seriously the need that exists for combined action against substitution on the part of retailers. No sooner does an article obtain the wide sale that merit and business aptitude combine in securing than there steps in the imitator, eager to steal the results of the original maker's exertions and skill. The evil is growing, and, in default of the existence of a higher principle amongst some retailers, it becomes a serious question how soon it must be grappled with. Of course, substitution would have no chance unless it came to the retailer baited with higher profits, and, as it too often happens that the ordinary consumer has only a general idea of the labelling, make-up, and appearance of the article asked for, it is not a difficult thing for an imitation to be palmed off upon him. We recently took a little trouble to find out how far this substitution evil extended. At one of the largest provision stores in England, we ordered on two separate occasions a Carpenter's Sutherland Brand Ox-Tongue, and both times there were sent us ox-tongues of another firm. The latter firm's goods may be as good in every respect as those of the former, but that is beside the question, which is that such a substitution, without the distinct

acquiescence of the purchaser, is without justification. Upon a third repetition of this substitution, a very plain-spoken letter was addressed to the large firm, which produced a prompt apology. At another place recently, in asking for Bovril, we were offered "Bovox," a palpable imitation of the name of the well-known meat extract, but in this case the vendor had the decency to point out that it was a different preparation. He, however, dwelt upon its virtues so largely that we, who can claim some knowledge of the relative merits of meat extracts, asked him to state in what its superiority over the preparation it so glaringly imitated consisted. As we suspected he knew absolutely nothing of the subject. He was apparently merely instructed to push this preparation upon persons asking for meat extracts, essences, and foods. In another fashion, Mellin's Food was not long ago dealt with, which led the manufacturer to claim the protection of the law. A chemist, the proprietor of a rival infants' food, was in the habit when retailing Mellin's Food of pasting upon the package labels of his own containing the following—"Notice. The public are recommended to try Dr. Vance's Prepared Food for Infants and Invalids, it being far more nutritious and healthful than any other preparation yet known." On this fact becoming known to Mr. Mellin he instituted proceedings in Chancery for an injunction to restrain the appellant, amongst other things, from selling his food otherwise than under the original labels or wrappers. This matter came before Mr. Justice Romer, who dismissed the action with costs. Mr. Mellin appealed and went even to the House of Lords, only to find that the law afforded him no redress, and that the chemist was held to be within his right in acting as he did. This, though not an instance of substitution, is ethically clearly a wrong to the proprietor of Mellin's Food, against which the law should protect him. It may be that the practice will not spread, but it is here clearly endorsed by the law, and, although only Mr. Mellin may be its victim to-day, every manufacturer of a largely sold preparation is liable to be treated in the same way, and may, in turn, be the victim to-morrow. Moir's, Eno's, Lea and Perrins, Champion and Co., Goodall, Backhouse, and Co., along with many others, have had, or are having, experiences: some of them, as in a recent case of Lea and Perrins v. the proprietor of the St. James's Hall Restaurant, of a peculiarly aggravating character. Messrs. Lea and Perrins were compelled to seek to restrain the defendant from selling, or exposing, or using in the course of or for the purpose of his trade, in any bottle upon which were moulded the words "Lea and Perrins," or upon which a label or labels containing the words "Lea and Perrins" was or were placed, any sauce not manufactured by the plaintiffs; and from doing any act, and from using any bottle upon which any trade mark of the plaintiffs had been placed, so as to represent or induce the belief that sauce not manufactured by the plaintiffs was the plaintiffs' manufacture. The plaintiffs

alleged that the defendant had been placing on the tables of his restaurant for the use of his customers, small bottles, sold by the plaintiffs and marked with their name and bearing their labels, but containing sauce not manufactured by the plaintiffs, and of a quality much inferior to that of the plaintiffs' sauce, thus representing and inducing the public to believe that the sauce was of the plaintiffs' manufacture, and thereby imperilling the plaintiffs' reputation for the excellence of their sauce.

The plaintiffs' evidence consisted partly of the testimony of persons, chiefly connected with the same trade, who had visited St. James's Restaurant and used the sauce provided as Lea and Perrins' Worcestershire Sauce; and discriminated the sauce provided from genuine sauce by taste. Professor Attfield was also called to show that some samples of sauce, taken from bottles which the defendant said were used on the premises and had been sealed up by him, differed in their components from genuine Lea and Perrins' sauce. Out of several samples which he had analysed, he said that some he would not say were not genuine, but four particular exhibits, in his opinion, could not be genuine, because the proportions of solid matter, ash and chlorine they respectively contained and their respective specific gravities differed sufficiently from those of the genuine sauce for him to form a positive opinion on the subject.

His Lordship in his judgment commented on the evidence, and came to the conclusion that it was proved that the defendant had supplied his customers with sauce that was not the plaintiffs' in bottles bearing the names of Lea and Perrins, and granted the injunction claimed.

Messrs. Lea and Perrins are not the only victims of such substitutions by restaurant-keepers, publicans, and the like. Times over the person asking for a bottle of "Bass" or "Guinness" has palmed off upon him the brew of some other firm, or a substitute placed in a genuine bottle but consisting of "Bass" or Guinness" adulterated with cheaper ale or stout. Other countries are legislating to stop some of the practices we have instanced. It would add to the dignity of trade and benefit the public if a law were passed punishing such substitutions in England. Germany, for instance, is dealing with the question in a Government Bill, which is aimed alike at the man who attempts to unfairly prejudice the public against his rival, and at the trader who carries the art of puffing his own goods to the extent of misleading would-be purchasers. Whoever makes by advertisement false statements about his goods or reasons for the sale, "so as to create the appearance of a specially favourable offer," is to be liable to a fine of 1,500 marks or six months' imprisonment, while whoever publishes false statements about a business or its proprietor likely to injure his credit or his trade, is to be liable to refund the loss caused by his false criticisms. There is also power to order the withdrawal of an "unfair" advertisement; a clause specially designed to prevent

the assumption, in the course of trade, of the name of a firm which has won distinction and which might lead to confusion; and a clause making it illegal for an employé to disclose trade secrets before the end of two years after he has left the employment where he learned the methods.

As our House of Commons contains a few victims of this practice they might do worse than prepare a Bill on the question.

THE AMATEUR INSPECTOR AGAIN.

If agricultural societies can find money to spend in the endeavour to suppress the sale of margarine as butter, it is surely foolish to employ persons entirely ignorant of the procedure required by the Acts to take samples when there are competent men easily obtainable. The exhibition Mr. James Hudson made of himself, primed with evidence for the late Select Committee on Food Products by amateur Food and Drugs Act inspectors, was miserable enough to serve as a lasting warning, but the amateur comes up smiling as ever. At Wigan, on Sept. 6, Samuel Duncan, grocer, of Ashton-in-Makerfield, was summoned, at the instigation of the Royal Lancashire Agricultural Society, under the Margarine Act, 1887, for unlawfully exhibiting margarine for sale without a label on the 20th ult., and on the same day for unlawfully exposing for sale margarine which was not labelled as such, and selling the same in a wrapper on which was not printed in capital letters, not less than a quarter of an inch square, "margarine." To both these summonses the defendant pleaded guilty.

Mr. Allan (Messrs. Peace and Ellis) said he was instructed by the Lancashire Agricultural Society to prosecute the defendant. The inspector (Wm. James Parkinson) visited the defendant's shop on August 20, and on the counter, by the side of a quantity of butter, there stood a firkin of margarine, which had no label on. In the window, exposed for sale, were a lot of round pounds of substance which looked like butter. It was got up exactly as round pounds of butter in the Preston district, and people would take it for butter. The price paid for the substance was identically the same as the price of butter sold in Preston on that day. It was very easy for the shop-keeper, if he wished to sell it, to put a small label on it as the Margarine Act required, and it was quite clear that the intention in the present case was to mislead the purchasers. There was a great deal of that sort of thing going on in the neighbourhood, and the Agricultural Society had taken the matter up. An inspector had been appointed to put down the practice, as it was slowly ruining the dairy interests in Lancashire. He was instructed to ask for a very heavy penalty, as margarine was a very cheap substance, and if sold at the same price as butter the profit must be considerable. Mr. Allan produced a certificate from the public analysts.

Mr. James (assistant magistrates' clerk) asked the in-

Inspector whether he told the defendant he was going to have the margarine analysed by an analyst?

Inspector Parkinson: No.

Did you leave one part with him?—No, I did not. It was purchased as margarine, and exposed without a label.

Mr. Gaskell said they were very sorry they had to dismiss the case on that ground. They thought very strongly that a very heavy penalty ought to be inflicted, but unfortunately they could not do it.

Mr. Allan said the defendant had pleaded guilty to the summons; he did not see how that objection could be taken. He thought the magistrates could convict.

Mr. James said the magistrates had no jurisdiction. He added that he had told Mr. Parkinson, the inspector, on the last occasion the procedure he should adopt.

If the Royal Lancashire Agricultural Society would provide its inspector with a copy of this journal weekly he would have to be very dense indeed if he made mistakes in his work of taking samples. This abortive prosecution would cost two or three guineas; six shillings and sixpence yearly buys FOOD AND SANITATION post free.

THE AMERICAN OIL GANG STILL BURNING ALIVE ENGLISH MEN AND WOMEN.

THE past week has provided its fresh batch of victims of the present murderous low flash-point allowed for American oils, and, as usual, County Council and other officials have paraded the prompted lie that the lamps are the cause of each *auto da fe*. It is time the public learnt that there is no lie, and indeed few far graver offences, at which the American oil gang will stop in their grasping for the "almighty dollar." It was stated of their methods in the United States, and so far as we know it has not yet been denied, that the American oil gang managed to score an enormous number of fires on their premises, so many in fact that the insurance companies, who were heavy losers, grew suspicious and took to plain speaking. To show their *bona-fides* the oil gentry offered enormous rewards for information that would lead to the discovery of those guilty of the arson. But no one claimed the reward. One day an out-at-elbows wretched-looking creature made a confession at a police station in which he alleged that persons belonging to the oil gang had given him a few hundred dollars on his undertaking to place a bomb in their premises. His instructions were to put the bomb in a certain position and ignite the fuse, when an explosion would take place in twenty minutes. He repented of his promise, and took, it is said, the bomb to the police and confessed the plot. To test his story the bomb was placed in a safe position and the fuse ignited, when an explosion did occur, but in *three seconds* in place of *twenty minutes*, which, it was surmised, explained how it happened that no one had ever claimed the enormous rewards. If this story be not true it is at least *ben trovato*, for it explains that upon this question of free trade in roasting alive English men, women, and children, for the profit of American monopolists, those engaged in the traffic will spare no means to humbug and mislead officials, coroners and their juries to put these accidents down to faulty lamps instead of to the true cause—their murderous low-flashing American oils. A year ago the Scotch oil refiners were eloquent exposing the real cause of these thousands of roastings alive, but their palms have been "greased," and their exposures of the crimes are sunk even below a whisper now. The oils are not allowed to be sold in the United States unless their flash point is nearly twenty-five degrees higher than the rubbish they flood England with. This is significant, and may well prompt the question, "Why should England be the dumping-ground for murderous American oils, which cause the roasting alive of hundreds of persons yearly, and which are not allowed to be sold in America?"

THE PURITY OF DRUGS.

THE question of adulteration of drugs is one that has been sorely neglected, and the taking of any samples for analysis being the exception, rather than the rule, the Leicestershire authorities are to be commended for having given the purity of drugs some attention: During the quarter ended June 30 of this year 39 samples of drugs were submitted to the public analyst, Dr. Bernard Dyer, who thus reports upon them:— "The 39 samples of medicine consisted of tonic mixtures obtained by submitting to 39 druggists throughout the County prescriptions for a tonic mixture containing iron and quinine. It is very satisfactory to me to be able to report that in 36 of the 39 cases the mixture was both accurately dispensed and properly labelled. In one other case in which the mixture was properly dispensed, it was wrongly labelled, inasmuch as the patient was directed to take two teaspoonfuls for a dose, instead of two tablespoonfuls as prescribed. In one other case the mixture was slightly too strong, but not very materially so. In the remaining case a mixture of iron and quinine was made up, but it was quite a different mixture from that ordered. It contained $2\frac{1}{2}$ times as much quinine as would be contained in a mixture properly made up according to the prescription, so that a patient taking the mixture as directed would have been consuming $7\frac{1}{2}$ grains of actual quinine per day instead of the 3 grains that would have been contained in the mixture as ordered. I understand that the druggist who dispensed this mixture was cautioned to be more careful in the future."

As regards the working of the Adulteration Acts in the County generally, Leicestershire is peculiarly fortunate in its chief constable, who, contrary to what is too often the case in many English counties, takes a strong interest in the purity of the food supply and has a practical knowledge of its working. Mr. Holmes (chief constable) says:—

"As special interest is just now being taken throughout the country with respect to the administration of the Food and Drugs Acts, I beg to submit the following details, showing the steps which have been taken during the past six years to carry out the provisions of these statutes within the County of Leicester:—

"During the six years ending December 31 last, 1,692 samples of food, or an average of 282 per year, have been submitted for analysis; these include 251 samples of milk, 22 oatmeal, 154 brandy, 110 coffee, 90 flour, 264 bread, 135 gin, 269 butter, 89 cheese, 66 vinegar, 42 lard, 21 margarine, etc., etc. Ninety-eight of these samples were certified to be adulterated, 79 persons proceeded against, and 12 cautioned.

"Of the 251 samples of milk 28, or a percentage of 11.1 were found to be adulterated; of 269 samples of butter 10, or a percentage of 3.72 were certified to be adulterated; 89 samples of cheese were found genuine; and of 42 samples of lard 1 was adulterated.

"From 300 to 320 samples of food and drugs are collected each year within the County. The great bulk of these are purchased by agents acting under the immediate direction of the Police, who are the Inspectors.

"The Local Government Board suggests that one sample per 1,000 population per year should be collected. This standard is largely exceeded in this County, the percentage reaching from 1.5 to 1.6 per 1,000 inhabitants. Indeed, there are but three counties in England where the percentage of samples taken is higher than Leicestershire."

AGRICULTURE AND THE LAW.

ON comparing the present laws for the protection of agriculturists in England with those of other countries it is surprising that so little use should be made of them.

In Belgium they have laws, but not so effectual as

our latest legislation, and yet they appear to get far greater benefit from their comparatively imperfect law than we do from a much better Act.

In a period of five years—1888 to 1892—the State analyses in Belgium show that the cases in which adulteration was proven only amount to 0.5 per cent., as compared with 3 per cent. in the preceding quinquennial period.

The recent return, showing the working of the latest Fertilisers' Act in this country, reveals a far less satisfactory state of affairs.

Our own law possesses one great advantage over those of France and America, in that provision is made to prevent the respective fortification or adulteration, by the seller or buyer, of the sample to be analysed. Still, the Belgium regulations are virtually similar to our own on this point, and therefore the decrease in the adulteration of fertilisers in that country is all the more creditable.

A fraud has been successfully operated quite recently. A mixture of sand, sulphate of soda, and about 10 per cent. of salt is undoubtedly iniquitously dear at 25s. per ton, even though it does bear the name of "nitrated salt." But with such ample means of protection so close at hand, it is hard to feel any sympathy for those credulous farmers who have been caught. Their very existence is an encouragement to such forms of fraud, and it is discouraging to find that a single one should have been victimised. If farmers would only lay to heart the wisdom of always buying upon the terms of the Act of Parliament, they would never pay twelve times the value of an article which, if it possesses any material fertilising power at all, could not in the wildest flights of imagination be worth more than 2s. per ton.—*The Chemical Trade Journal*.

DATES FOR SPIRIT MANUFACTURING.

AN ingenious gentleman named Lebuy, says in *Zeits. für Spiritusind., Fr. Soc. Chem. Ind.*, that "Mesopotamian dry dates are worthy of consideration as a raw material for the manufacture of spirit. According to his analysis, they have the following mean composition: One hundred parts by weight consist of 85.1 parts of pulp and 14.9 of kernel. The pulp consists of cane sugar, 0 per cent.; dextrose, 66.07; starch, 1.28; nitrogenous bodies, 2.97; fat, 1.03; gummy bodies, 4.26; cellulose, 4.97; mineral salts, 1.96; and water, 17.46 per cent. According to this analysis, 100 kilos would yield 37.38 litres of 90 degrees alcohol. Lindet, in commenting on this analysis, says that though these Mesopotamian dates contain no cane sugar, yet he has found in the flesh of Tunis dates 23 per cent. of dextrose along with 38 per cent. of cane sugar."

We published the fact over two years ago that the problem of using dates, and damaged ones at that, for whisky production, had already been solved by a Belfast firm of distillers. These ingenious investigators are, like the cow's tail, somewhat behind.

HOW ROTTEN AND DAMAGED PICKLES AND JAMS ARE WORKED UP FOR THE CONSUMER.

We have before now given Messrs. Ehrenfest and Co. the benefit of a free advertisement for their wares, and, in view of our many revelations as to the materials used for manufacturing cheap pickles and jams by firms of no repute, it can only do good if we give their methods and goods another free advertisement. It may be an eye-opener for cheap pickle eaters, and for vigilant sanitary inspectors employed in the vicinity of manufactories of low-class goods; and when the Select Committee is again appointed and taking evidence it will be useful as illustrating the need for dealing with the whole question of colourings and preservatives in

articles of food, for it has been fully proved by this and preceding glimpses of the trade in such articles, that they serve no legitimate purpose in the preparation of food, but are used to enable inferior or rotten stuffs to be palmed off on consumers as articles of prime quality.

Messrs. Ehrenfest and Co. say, "We are supplying the enclosed colouring to picklers for the purpose of bringing up the colour of inferior parcels of Red Cabbage. An infinitesimal quantity only is required."

It is but a few weeks ago since there came into our possession a number of offers from other quarters of substances and methods for faking up diseased meats for sausages, pies, &c. Apart from the danger to health of these practices, there is the fact that they enable the "slink" meat and rotten fruit and vegetable users to undersell the producers of honest and healthful articles of diet. It is, therefore, of real importance that there should be some means of preventing the use of these substances in food.

FILTERS AS DISEASE DISTRIBUTORS.

MR. HANKIN'S report on the outbreak of cholera in the East Lancashire Regiment at Lucknow last year affords another telling illustration of how the Right Hon. and Honourable, and gallant gentlemen who run the War Office commit folly upon folly, how their ignorance or jobbery places contracts for rubbish, and presents Tommy Atkins with disease or death, and how those who are guilty of these manifold crimes have the impudence to claim that their glorious services are entitled to the reward of high pensions. No less than 22,000 of one make of filters are in use in our military hospitals and barracks, every one of which is a dirty imposture, distributing disease broadcast. The 16th Queen's Lancers and the East Lancashire Regiment were scourged with cholera, disseminated, it was found, by the use of these very filters. How many thousands of pounds have been fooled or jobbed away in putting these death traps into our army and navy it would be difficult to discover, but more has been squandered than would make Tommy Atkins' Aldershot sewage swamp a healthy resort, and make military life in some measure attractive for the private. But our House of Commons has no time to waste upon the rooting out of this kind of scandal; it is too busy arranging cordite contracts for Joseph's numerous relations. Tests with these filters showed they passed as many as 5,000 to 6,000 of the typhoid bacillus into the filtered water out of 20,000 originally present, and grow fouler with use. We are to have a new régime at the War Office. One of the most sensible things Lord Wolseley could do to initiate his rule would be the issuing of an order commanding the immediate smashing of these filthy filters.

DISINFECTION OF ROOM DUST.

A SERIES of reports on this subject by Dr. Miquel has been appearing in the *Ann. de Micrographie*. Some of the commonly-used disinfectants, such as phenol, thymol, sulphurous acid, and naphthalene, are shown to be either ineffectual or very expensive. Carbolic acid, for instance, is about as active as alcohol or brandy, and less so than vinegar. Liquid SO₂ is very expensive if sufficient is used. The vapours of acetic acid are very active, but too expensive for ordinary use. Essential oils appear to be about as active as phenol. Commercial HCl is shown to be very active if used in the proportion of 25 c.c. per cubic metre. A litre of it exposed in shallow layers of not more than 1 c.m. depth, will disinfect sixty cubic metres in twenty-four hours. Formic aldehyde is also a most useful disinfectant. It is less irritating to the eyes than SO₂, and very active. Formic acid in the proportion of 1 per 2,000 is more active than corrosive sublimate 1 per

1,000 saline solution. As concentrated aldehyde polymerises into a yellowish-white powder (trioxy-methylene) unsuitable for aerial disinfection, weak solutions only (1 to 2 per cent.) should be used, exposed in shallow dishes and allowed to disengage their vapour slowly for several days. Another good plan is to burn methyl alcohol slowly in lamps surrounded with platinum gauze. Very penetrating vapours of aldehyde are disengaged which do not alter metals or the colours of textile fabrics, while efficiently disinfecting the dust of a room. Commercial formic aldehyde solution usually contains from 33 to 40 per cent.—*Public Health*.

"WORKING-OVER" BAD BUTTER.

A PROCESS has recently been evolved by which the nefarious industry of "working-over" bad butter can be operated so successfully that those who are engaged in it are making money at an extraordinary rate. Rancid butter, bought at from two to three cents per pound, after being treated by this process, is sold much cheaper than either good butter or pure oleomargarine with a profit of from 200 to 400 per cent. for the "worker." This reworked butter successfully disguises itself from the hands of the manufacturer through those of the middlemen, and its real character is unknown until it gets into the stomach. Then it throws off its mask, as it were, and it is demonstrated that rancid butter, work it and disguise it as you may, is rancid butter still, and wholly unfit for human food.

To expose the real nature of this rancid composition and so practically to stop its sale, a Bill has been introduced in the Illinois Legislature providing that every package containing such manipulated butter shall have its true character plainly branded into it under a penalty of fine or imprisonment or both. The dimensions this dishonest business has attained are indicated by the fact that 100,000 pounds of the rancid raw material purchased for the purpose of being worked over was found on hand in one establishment in this city, while a large factory in which the reworking process is to be carried on is being built in Ohio in the dairy district. It is stated that persons interested in this process have been among the most active secret supporters of the anti-oleomargarine legislation in the West.—*Paint, Oil and Drug Review*.

WHO WOULDN'T BE A TEETOTALER P

AMONGST the latest temperance patents is one by Mr. S. H. Sheldrake, of Gipsey Hill, Surrey. He proposes to increase the nourishing properties of ale and stout, and, of course, of their non-intoxicating imitations, by introducing into the liquor during the course of manufacture, calves' heads or feet, bullocks' heads, shins of beef, etc., and a small quantity of quinine. As fancy titles, the following may commend themselves: "Shin-ale," "Calves'-feet beer," "Bullock's head stout." More æsthetic names would be "Shin-ade," "Bullockine," "Calva," "Feetawater," and so forth. The last-named, however, has to a morbid mind perhaps an unpleasant ring, says the *Mineral Water Trade Review*.

MEDICINE IN CHINA.

THERE seems from the following to be a great opportunity for W. T. Stead and A. J. L. Gliddon to make money in China out of the Mattei Cancer Cure imposture. It is however, perhaps, too much to hope that these gentlemen will leave their country for their country's good and give the Celestial the chance of buying the dirty water as a cancer cure. Dr. Suvoong, writing on Chinese Medicine, says:—

Medicine as practiced by the Chinese is in a deplorable condition. Very few Chinese medicos ever know anything of the Ts'o-pun, an old Chinese *materia medica*; the majority merely know how to write out a few old stock prescriptions copied out of some antiquated document that came down to the family as an heirloom. A man engaged in the Kiangnan Arsenal as a petty overseer, on being

dismissed from his post, stole some secret prescriptions from a Buddhist priest and then hung out a sign informing the public that he was ready to guarantee a perfect cure for any ailment.

In the district of Ching-poo there are two villages, Mang-ho and Tsung-ko—each having a family of doctors, celebrated all over China. and, during an illness of the Empress-Dowager, one of them was called to Peking, but her Majesty, fortunately or unfortunately, did not ask him to prescribe. The patients that go to these places are either hypochondriacs or incurables, and I have never seen one that had either functional or organic disease who returned cured.

One sometimes hears of the Imperial College of Medicine in Peking, and a foreigner is sure to make an egregious mistake, supposing it is some institution like the Royal College of Physicians and Surgeons in the West. It is only a handful of self-styled doctors who have no lectures to give, and do not write articles for medical journals, as there are no readers; a Chinese medical student in the proper sense of the term has never existed.

The Chinese apothecary does a large business, for the doctors prescribe large bowlfuls of decoctions for every complaint; consequently he must have a large supply of herbs and roots to meet the demand, and so ransacks creation for odds and ends. Of the drugs one may have some idea by reading the following advertisement:—

"Recently Hong Kong and the provinces of Kwang-tung being visited by the plague, the Provincial High Authorities have published a prescription called Plague Cure which is infallible. Our shop has already prepared this medicine for the two great benevolent institutions in Canton, where it has been used with invariable success. In this prescription there is one ingredient called Son of Stone Dragon, which is found in the mountains in the province of Chekiang. Through the agency of our branch office in Hangehow, we have obtained a superior variety of this stony son of a Dragon, and, together with other valuable drugs, we have made this mixture. During the compounding, we have reverently said a thousand prayers. Now we offer this medicine to the public. Herewith is an illustration of this stony son of a dragon as our trade mark. The medicine is not only unusually effective against the plague, but it is also infallible against different kinds of cholera, vomiting, diarrhoea, colic, apoplexy, sunstroke, asphyxia, typhus and typhoid fevers, ague, diphtheria, liver and stomach aches, tetanus in children, surfeiting, small-pox, poison, malaria, all sorts of tumours and inflammatory poisons, etc., etc. Shanghai being particular in its sanitation against plague, we have specially prepared this medicine as a valuable weapon in the hands of committees for preventive measures.

"CHEN-FUH-LAN-TANG."

I wonder who discovered such potent virtues in a little lizard which in its native province of Chekiang is always regarded with disfavour!

For various female complaints and diseases "Dragon" and "Phoenix" pills are largely sold, coated with wax, either white or yellow, and of the size of an English walnut; their efficacy is of course lauded to the skies; no doubt they are composed of such drugs as aloe, myrrh, etc. The Chinese druggists, in their anxiety to make money, also advertise drugs to restore the virile power in a profligate, and cause the sterile to bear offspring.

But there are stuffs which the Chinese druggists do conscientiously collect, with much expense and labour, but which are nevertheless inert and useless—as tigers' bones, bears' paws, deer's horns, etc. Tigers' bones are ground into powder and used in plasters for internal injuries; bears' paws are boiled to a jelly and used as a powerful alterative for the weak and aged; deer's horns are sawn into thin discs, boiled down, and given to renew wasted vitality.—A young horn is considered as particularly valuable when it is a little ruddy and somewhat translucent.

When every available drug has been pressed into service and found wanting, the Chinaman resorts to superstition, or, if I may be pardoned, to a "faith cure!"—for humanity is much the same the world over. But the great danger is, that they often resort to the fetish first and neglect a rational medication. Unfortunately also, superstition often retains its victims long in its thralldom, but sometimes it gives a sort of pleasant rounding to the recovery of an important member of the family—as, for instance, when the father gets well from severe illness because his filial son cuts a piece from his arm and embodies it in the prescribed remedy. Every year the *Peking Gazette* gravely makes honourable mention of filial sons and dutiful daughters-in-law who have maimed themselves in loving devotion to parents.

In the region of Hein Fung in the early fifties there was a local rebellion in the Shanghai city. During that atrocious period many a man was slaughtered and butchered, and his gall-bladder taken out and invariably swallowed by some savage chieftain with the idea that it would brace up his courage—this latter being said to reside in the gall. The Chinese word for bravery means a large gall.

In the History of the Three Kingdoms, mention is made of a distinguished general who, on an eye being struck out, immediately picked it up and said: "This is made of my father's essence and my mother's blood; I dare not throw it away." And forthwith he swallowed it.

These are instances showing that from time immemorial the people of China have had a notion of the peculiar virtue of the human body; and not only so, but even excrementitious and effete matters are sometimes used. Thus solid feces are moulded into the shape and size of a chestnut and hermetically sealed in a jar and buried in the ground for a number of years, then taken out again,

when they have a gray colour and no odour, and are carefully covered with gilt and stowed away to be called for by some eccentric medico, when they are euphemistically denominated "Golden Beans." A human placenta is sometimes cleaned, cut up in pieces and given to a white duck to feed, and after a few days the latter is killed, cooked and given to the patient. Cat's placenta is roasted to ashes on a tile and taken in a warm drink for consumption; young boy's urine is taken in samshu and sugar, though parents generally object to this, having an idea that it will have a reflex action in shortening such a boy's life. Of course there are many other things infinitely more unspeakable that are or may be used in the despairing hope of life, but the foregoing I know from personal observation.

But are there no Chinese drugs and remedies that are worthy to be rescued from oblivion? Certainly. Many have already been naturalised in the Western pharmacopoeias, such as rhubarb, camphor, mercury, musk, etc. And there are some empirical methods that will surely reward a trial, but are either not known or are ignorantly sneered at because of Chinese origin. For instance: when a child has eaten too much, or otherwise brought on discomfort to the abdomen, nothing is so effective as to put from two drachms to an ounce of pi-siau (native sulphate of soda) in a thin cotton band and apply to the abdomen; next morning the stuff has almost entirely disappeared (very likely by absorption, evaporation, or mechanical loss), the abdomen has subsided, and the child is well. This is a pleasant way of using a cathartic, is easily done, and is effective. Another empirical method is scraping or pinching the skin for mild cholera, sunstroke, etc. This consists of scraping the back till it is striped like a zebra—it looks barbarous, but its effect is instantaneous. In the sickly months of the summer, when one feels out of sorts, with perhaps a touch of colic, first let his spine be scraped clear down to the lumbar region, then the median line in front, and either side of the ribs, and he will feel the charm right away; of course, this is nothing more than counter-irritation, and brings the blood to the surface to be redistributed, but no medicine in the pharmacopoeia can give such rapid and happy effects under the circumstances. A milder method is, pinching the skin of the neck till it is covered with red vertical stripes. There can be no mistake in these methods being useful, as I have experienced their benefits myself many times in these nearly twenty years. With the exception of these few gleams of phosphorescence, it is all darkness in the medical horizon of China.—Dr. Suvoong, in *China Medical Missionary Journal*.

ADULTERATION PROSECUTIONS.

ALUM IN BREAD.

Elijah Hart, grocer, High-street, Quarry Bank, was summoned, under the Food and Drugs Act, at Brierley Hill Police Court, on August 30, for selling bread which was adulterated with alum. A 2d. loaf was purchased at defendant's shop, and this upon being analysed was found to contain alum to the extent of thirty-six grains per 4lb. loaf. Defendant was fined £2, and £1 3s. costs.—At the same court Mr. M. Attwood, grocer, Quarry Bank, was fined £2 and £1 3s. costs for a similar offence, the extent of adulteration in this case being thirty grains per 4lb. loaf.

GROUND GINGER.—A HARD CASE.

At Bury on Sept 5, Lydia Cheetham, Radcliffe, was summoned by Police-sergeant Wilcox for selling adulterated ginger. Superintendent Noblett put in Dr. Campbell Brown's certificate, which showed that the sample submitted to him was adulterated to the extent of 10 per cent. of spent ginger. The defendant pleaded ignorance of the adulteration, and said she sold the ginger as she bought it. She produced a receipt from the firm she bought the ginger from, and a letter from the firm who first supplied it. The magistrate's clerk (Mr. John Hall) read the names on the receipt and letter, and said they bore the names of Neild and Sons, 40, Shudehill, Manchester. and Drysdale, Denison and Co., 131, Upper Thames-street, London. The Defendant: I bought the ginger from Neilds', who had it supplied to them by the other firm. The Clerk said that any fine imposed or costs ordered to be paid ought to be paid by the London firm. The defendant was ordered to pay the costs of the prosecution, amounting to £1 2s. 2d.; and Mr. Knowles, the chairman of the bench, advised the defendant to make a representation to Messrs. Drysdale, Denison and Co., with a view to their recouping her the amount.

THE VALUE OF EXHIBITION AWARDS OF MERIT.

GASTON BARATON, Colonial merchant, was charged at the Paris Police-court with selling adulterated vanilla. He had disposed of a considerable quantity of vanilla in Paris and Antwerp, which had been treated with ground glass to increase its marketable value. M. Baraton protested, in defence, that he had merely used boric acid for the manipulation in question, and as evidence of the quality of his products showed the awards that had been given him at various exhibitions. He was condemned to six months' imprisonment, and to pay a fine of 1000 fr.

THE DUTIES OF AN INSPECTOR.

CAPTAIN MARKHAM R. KITTOE, of East Ham, inspector of weights and measures for South Essex, was summoned at Stratford on Saturday, on the information of Jabez Wedderburn, a scale maker, of 130, Hill-street, Peckham, for an alleged infringement of the Weights and Measures Acts, 1878 and 1889, the information setting forth that on April 29 last Charles H. Cranvey, in response to a notice issued by defendant, attended at the Bell Inn, Leytonstone, to have his employer's weights examined, and that, though purporting to be so, they were not so treated by defendant but by some other person having no authority under the Act. Mr. Kapaida said that Section 44. of the Act of 1878 specified that the inspector himself "shall attend" at the place appointed and perform these duties. Mr. Wedderburn took a great interest in the Weights and Measures Act, and had been all round the country seeing that the spirit of the Act was carried out. The inspector, it appeared, had been ill, and the Bench decided to adjourn the case for a month. Mr. Sharman then told the Bench that Mr. Wedderburn had turned to Mr. Montague Kittoe, the son of the defendant, and called him a vagabond, and said that as it was not the first time he had addressed objectionable remarks to witnesses, he applied for a summons against him. Mr. Wedderburn warmly declared he had not used the remark, and Mr. Sharman said that seeing that half a dozen gentlemen heard it, this only aggravated the offence. If Mr. Wedderburn said that he was sorry and that the remark slipped out accidentally on the spur of the moment, he should be satisfied. Mr. Wedderburn: Why should I say I am sorry when I never said it? No, not me! It is preposterous. I am an Englishman, in an English court, and I expect fair treatment. A summons against Mr. Wedderburn was then granted.

CURIOUS ARTIFICIAL FUELS.

THE Patent Office at Washington, says an exchange, has at present a very curious assortment of contrivances patented for cheapening the cost of fuel. Some of the ideas are exceedingly interesting. One patent provides for using corn cobs soaked in petroleum; another would have people cut leaves and grass when green and press them into compact blocks. It is claimed for this particular patent that such blocks might be used for building and fencing without impairing their value as fuel. There are, besides, many devices for utilising coal dust. One proposes to mix clay, molasses and water, coal dust and petroleum. Another mixture is that of sawdust, Irish moss, asbestos fibre and burnt limestone, these being boiled and made into bricks with coal dust. Then there is a patent for bricks without coal dust, to be composed of ashes and sawdust saturated with petroleum and coated with resin. Among the most curious ingredients for artificial fuels are clam shells, charred garbage, corn meal, wheat flour, sugar, seaweed, broken glass, lard, tar and leaves.

One of the most interesting of these contrivances is composed of powdered charcoal and finely cut cork. The fuel burns very slowly, and gives off a great deal of heat, being particularly well adapted for the sick room. Exclusive rights have been taken out for the manufacture of a brick or cartridge of highly porous clay, which is to be soaked in kerosene and put into the kitchen stove when wanted. It is only necessary to touch a match to this and the fire is ready for cooking. None of these, however, are more ingenious or economical than a fuel which is reported to be in use at present in Egypt. In this case Egyptian mummies, chiefly those of cats, ibises and other animals held sacred by the ancients, are employed.

THE MILK CURE IS THE LATEST.

A DOCTOR in South Africa claims to have discovered a new method of curing disease, which he terms "lacteopathy." It struck him, he says, that, as milk absorbs poisonous germs from a bucket, it might also be used to absorb poisonous germs and gases from the body.

He put his idea to the test, and now claims to have cured people of small-pox, fevers, diphtheria, spinal disease, and many other maladies, by simply wrapping the patients in milk sheets.

He lays his patients on a mattress covered with blankets, takes a sheet just large enough to envelop the body, warms it, saturates it with about a pint and a-half of warm milk, opens it without wringing it, and wraps his patient in it for an hour, subsequently sponging him over with warm water or putting him into a warm bath.

He declares that in one bad case of small-pox, where the eruption was well out, the milk sheet drew the poison so entirely from the skin that the next day the eruption disappeared and the man was convalescent.

RAILWAY MILK CHURNS AS MEASURES.

THE dairying interest is up in arms against the new regulations, which the London County Council has submitted to the Board of Trade for approval, relative to the stamping of railway milk churns as milk measures. The Metropolitan Dairymen's Society has addressed a letter to the Board of Trade protesting that these churns, owing to unavoidable damage in transit, would be very apt to get out of gauge as measures; that the expense of constant readjustment would entail an annual burden of £130,000 on the farming and dairying interest; and that no protection would be afforded by the regulations to the public or to traders. The President of the Board of Trade has been asked to receive a deputation from the Society.

STAMPING OF RAILWAY MILK CHURNS.

A DEPUTATION, organised by the Dairy Trade and Can Protection Society, recently waited upon Sir Courtenay Boyle at the offices of the Board of Trade. The deputation, which was introduced by Mr. G. Barham, consisted of the following among other gentlemen:—Mr. G. Titus Barham, president of the society, Mr. Horner, chairman of the committee, Mr. Stapleton, Mr. E. G. Easton, Mr. Emerton, Mr. Merry, of the Beds and Bucks Association, Mr. Daunton, Mr. Hitchman, Mr. E. A. Lane, Mr. C. F. Thwaite, Mr. J. B. Williams, etc.

Mr. George Barham introduced the deputation, and stated that it was representative of the Dairy Trade and Can Protection Society, having a membership of over 1,000 dairymen of the metropolis, and being the largest society of its kind in the kingdom, and with which was affiliated the Derbyshire Dairy Farmers' Association, a powerful association of over 600 members, the Brighton and Hove Dairymen's Association, the Croydon and District Dairy Farmers' Association, the Eastern Counties Dairy Farmers' Association, the Thame Dairy Farmers' Association. Some of the gentlemen present were members of the council of the British Dairy Farmers' Association, and one gentleman represented the Beds and Bucks Dairy Farmers' Association. He thanked Sir Courtenay Boyle for giving them an opportunity of stating their views upon the subject of the regulations as to the stamping of railway milk churns, submitted for the approval of the Board of Trade by the London County Council, for a copy of which they were indebted to the press. He assumed the regulations submitted were the same as those set out in his copy, and it was because they felt that the regulations, if approved and made effective, would place them in the position of fraudulent traders—that they had sought to oppose the approval. These objections stated shortly were—(1) That a railway milk churn was a vessel incapable of being treated as a measure by reason of the damage to which it was liable during transit by rail. (2) There was no necessity for their being so treated, as they were not, so far as the consumers were concerned, used as measures. (3) Two people only were interested; on the one hand the farmer, on the other the dairyman or trader. (4) While it was true that the inclusion of railway milk churns as the measures was agitated by a farmers' association, it was, he believed, equally true that the present hope of that association was that they might be exempted, a strong proof, he thought, that the farmer did not want the regulations, and he could say quite positively that the traders did not desire to be hampered and harassed by regulations it was impossible to comply with. (5) That while it was true that the gauge marks were recognised as giving an approximate idea of the quantity of milk consigned by the farmers to the trader, these gauges were no more treated as accurate measures than was the barrel in which a brewer sent his beer to the publican. Both were vessels of conveyance only. (6) Sales by the trader to his customers were effected by means of a properly stamped gallon or half-gallon measure. (7) Sales by the retailer to the public were also effected by properly stamped measures. (8) The effect of removing the gauge marks from the churns would be to cause all milk to be measured on the railway platforms at the sending and receiving stations, a course obviously impossible, and one which no railway company would permit. (9) It was unjust both to the farmer and trader to impose such regulations, and, under the past and existing state of things, the two parties had hitherto conducted their business without friction, and were each capable of looking after their own interests. (10) The stamping of the churns could only be done in a town where a properly qualified man was to be found; and, in the majority of cases they would have to be done in London, with the prospect of getting a knock while in transit to the farmer, and, in consequence, being wrong when they reached him. (11) It was unjust that he should be held responsible for the churns under such circumstances, and to keep them in anything like order they would require examining, regauging, and restamping at least once a month. (12) The cost each time would not be less than 5s. per can. In view of the objections he had enumerated, and the heavy tax which the enforcing of the proposed regulations would inflict upon those who were at present suffering very severely from the depressed state of agriculture, he hoped the Board would rescind all existing regulations as to milk churns, and refuse its assent to the proposals of the London County Council.

Messrs. Horner, Stapleton, Easton, and Merry having spoken, Sir Courtenay Boyle said he had been very much impressed with the views of the deputation, and would bring the matter personally before the President. He would, however, suggest that the deputation should appoint a small committee to draw up their objections in writing and submit them. In the meantime the assent of the Board would be withheld.

THE BELGIAN MARGARINE TRADE.

MR. GEORGE W. ROOSEVELDT, United States Consul at Brussels, states that the consumption of margarine in Belgium during the past few years has been very considerable. The country produces from 2,000,000 to 3,000,000 kilograms (4,409,200 to 6,613,800 pounds) annually. The present consumption requires an annual importation of about 12,000,000 kilograms (26,455,200 pounds).

Very nearly the entire quantity of margarine consumed in Belgium is imported from Holland. It is estimated that the annual consumption in Belgium of this article amounts to 15,000,000 kilograms (33,069,000 pounds).

Statistics show a falling off in the importation of fatty substances other than butter and margarine, which proves that the latter pro-

duct has almost entirely replaced fats of inferior quality which were formerly used. The consumption of margarine steadily increases, and is now sold in all the cities of that country under a distinctive name. The Belgian Government is favouring the manufacture of margarine, not only to supply the home demand, but, if possible, to compete with Holland for the English market. England imports annually more than 65,000,000 kilos (143,299,000 pounds) of this product, valued at 90,000,000 francs, principally from Holland, which makes a speciality of mixing American oleomargarine with oil and milk.

To secure a part of the trade with England, the Belgian Government proposes to establish a duty of 20 frs. per 100 kilos (220.46 pounds) on all imported margarine, and an excise duty of 5 frs. on home production. The remittal of the excise tax will be authorised by law on exportation.

In France, margarine, oleomargarine, alimentary fats, and similar products are liable to a customs duty of 15 frs. per 100 kilos; and lard, 14.50 frs. per 100 kilos. In Germany, artificial butter is taxed 25 frs. per 100 kilos. Pork, goose, and other melted fats, also margarine and beef marrow, are taxed 12.50 frs. per 100 kilos. The Belgian government wishes to confine the duty to natural butter, margarine, mixtures of fats and oil, and, excepting milk, will permit all raw materials free entry.

To produce 100 kilograms of margarine at least 65 kilograms (143.3 lbs.) of oleomargarine, 20 kilograms (44.2 lbs.) of vegetable oil, and 30 kilograms (66.43 lbs.) of milk are required, half of which is eliminated in the form of water.

Very little oleomargarine is manufactured in Belgium. Large quantities are produced in Austria and France, but nearly the entire continent of Europe receives its supply from New York and Chicago. Importation is almost exclusively via the port of Rotterdam, which received, in 1893, more than 35,000,000 kilograms (77,651,800 lbs.)

Some time since, France sent a commission to Holland for the purpose of studying the methods employed there for the suppression of frauds in butter making, and also to ascertain if the manufacture of margarine has been favourable to agricultural interests. The report contains the attestation of seven mayors of communes in southern Holland, showing that since the introduction of the margarine industry in that country, not only has the price of milk increased, but also the number of cattle, which plainly shows that the industry in question has become a source of profit to the farmers.

"ARTIFICIAL" MANURE SWINDLES.

Just lately large quantities of so-called "nitrate of salt" have been sold in some of the Surrey markets at 25s. per ton as a manure for mangolds. A sample was sent to the South Eastern Agricultural College, Wye, for analysis, and it turned out to contain not a particle of nitrate, but to consist of—sand, 15 per cent.; sulphate of soda, 75 per cent.; salt, 10 per cent. This stuff has virtually no value as a manure. The salt, if of any use, would not justify a higher price than 2s. per ton. No wonder agriculturists are in a bad way if they spend so blindly without using the means of protection the law and chemical analysis afford.

A UNIQUE PRESCRIPTION.

A GENTLEMAN in Virginia, exerting himself one day, felt a sudden pain, and, fearing some internal injury, sent for a negro who made pretensions to medical skill. The negro, having sagely investigated the case, prepared and administered a dose with the utmost confidence of speedy cure. No relief being obtained, however, a physician was sent for, who inquired of the negro what he had given. "Resin and alum, sir!" "What did you give them for?" continued the doctor. "Why," replied Sambo, "de alum to draw de parts toggeder, and de resin to sodder 'em."—*Healthy Home.*

THE SCHEMING MICROBE.

A MICROBE sat on a maiden's lip, right on its kissiest part,
And murmured, "I'll work that young man off, in the highest style
of art;
I'll send a raging colony careering through his veins,
And they shall soak his system with a choice lot of ptomaines.
"O, I'm of the choleraic sort and the epidemic brand,
And you may bet the victim knows whenever I'm on hand;
For I raise a rumpus in his guts, like a slowly bursting bomb,
Which only ends, as a general thing, when he reaches kingdom
come."

Now, he that the grizzly microbe had in its measly pizen mind,
Was a nichish, youthish laddie of the hottest-blooded kind;
Who loved this sweetish, youngish girl with an incandescent vim,
Which only found an offset in the way that she loved him.

Well, on the next sweet Sunday night, this nichish, youngish man
Was seated on the same chair with his darling Mary Ann;
And he hugged till he nearly busted her precious diaphragm,
And kissed her sixteen hundred times, with the zest of a battering
ram.

The microbe had been swapped at least one thousand times, and
when

The young man left, the ornery beast was still with Mary Ann;
When her beau was gone, she finished up by kissing "Puggy Wagon"
And next day that devoted pup 'most died of diarrhæe.

W. C. COOPER, in *Medical Gleaner.*

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Food and Sanitation.

SATURDAY, SEPTEMBER 21ST, 1895.

THE "PATENT" MEDICINE SWINDLE.

A GREAT many Members of Parliament we should say feel that they are quoted and signed by the hand of nature to save their fellow men from untold miseries. Such at least is the impression one obtains from an hour or so spent in listening to the words of wisdom that fall from the lips of these mighty geniuses when they unbend in the smoke-rooms of the House of Commons, or the political clubs. Now, without suggesting that they should at once put everything that is wrong in the world to rights, it might be worth while to instance one far-reaching wrong, recognised and deplored by every person of true sanity in the kingdom—viz., the patent medicine swindle. Our landscapes are rendered hideous by the glaring advertisements of the trash; every urinal is plastered with the filthy bills of more of the quacks. The letter box is stuffed with their lying pamphlets, garnished with fictitious cures to lure the weak-minded

and ignorant to part with sound money for aloes or turpentine sold under fancy names. It is hopeless to expect our great newspapers to grapple with, or expose the evil, or to do anything to assist in checking it, for they are bound body and soul to the encouragement of the swindlers. It is true that the *Pall Mall Gazette* went the length of bursting *one* fraud, but it has never done anything since, and it earned on that occasion the hearty curses of every manager and proprietor of the big dailies for squelching what yielded an enormous revenue to that press, which is the guardian of the public weal, incorruptible, etc., etc., as it never tires of telling its readers. Hence the evil has gone on increasing, and the victims of quack secret disease rascals, fleeced of their money, and with their health ruined by ignorant treatment can be, as every medical man knows, reckoned by thousands. Not long ago we came across one of their dupes who was swallowing some twenty pills of aloes and soap daily as a cure for syphilis, he having been gulled by the specious lies in one of the pamphlets issued by an arch quack, and his health was utterly ruined before he lost his faith in the trash and sought proper treatment. In this manner the stamina of masses of our people is being vitiated, and misery and disease spread to an alarming extent. We think it was Dr. George Gould who recently made public the methods of one quack medicine firm, which, it is said, advertises in a systematic and orderly manner in the secular and daily press of the country. It has a large corps of letter-writers and correspondence-clerks. In its safes it has preserved the letters and confessions of almost a million miserable and foolish men and women. This correspondence is tabulated and is followed by a record of the treatment, and, what is of more moment, of the contract and the moneys paid on it.

Not long ago a like concern failed, and among the most valuable assets of the defunct concern were similar records of 200,000 dupes. These the first great business-house referred to bought of a speculator, agreeing to pay fifty cents apiece for each new name of a living person. In checking up the lists, 60,000 of the 200,000 were found to be on their books already.

Perhaps all readers of the newspapers have noticed an advertisement for a lock of hair, upon the receipt of which the advertiser agrees to tell the sender's fortune and cure his disease. The author of this "fake" lately retired from business, and his correspondence, including over 600,000 locks of human hair from as many heads, was sold to an advertising concern.

These are simply samples of business principles applied to quack medicines.

With the creatures who plaster public conveniences

with their filthy announcements, there is at present no method of dealing unless the wretched hirelings who act as their surreptitious bill-stickers are caught in the act, and even then it is not the quack who is punished. It ought not to be a difficult matter to draft an Act of Parliament to reach the quacks who issue these bills, and to impose such penalties upon those pursuing the nefarious traffic that their vile trade could be stamped out of existence. As to the larger swindlers, the House of Commons, were it so minded, could instantly suppress the sale of the nostrums. An Act imposing a guinea stamp on each box, bottle, etc., of the quack medicines would effectually squelch the business, for whilst millions of fools are found who will pay a shilling or thereabouts for a quack medicine, there would be so few discovered who would pay a guinea that the business would at once be abandoned as unprofitable. Surely there must be some Member of the House of Commons who has sufficient regard for the welfare of his fellow creatures to draft and introduce a Bill next session to deal with this monstrous and dangerous evil!

THE WATER AT SPIRIT PRICE TRAFFIC.

THE enormous fortunes realised by brewers, distillers and publicans are easily accounted for, when we realise that the brewer and distiller may make their beer and spirits of anything they choose to employ—for there is practically nothing to prevent them using even road sweepings if they like to do so—and the publican can drown his spirits with as much water as he pleases, provided he has displayed in his premises a notice that his spirits are diluted. Thus, purchasers pay whisky price for, at times, as much as twenty per cent. of water over that allowed by the Acts of Parliament. An instance where a publican forgot to display the protective notice of dilution, occurred at Boston, on Sept. 11th, when Edward Baumber, innkeeper, Freiston, was summoned under the Food and Drugs Act, 1875, for selling gin and Irish and Scotch whisky which were not of the nature and quality demanded by the purchaser.—The certificates of Mr. C. H. Southwell, Ph.C., F.R.M.S., the county analyst, showed that the sample of gin taken had been admixed with water so that the admixture was 45·85 degrees under proof; 35 degrees under proof being the minimum of alcoholic strength allowed by law for gin. In other words, it had been reduced by the admixture of water so that it contained 54·15 degrees per cent. of proof spirit. The Irish whisky was 33 degrees under proof; 25 degrees under proof being the minimum of alcoholic strength allowed by the law for whisky. In other words, it contained 67 degrees per cent. of proof spirit. The Scotch whisky was 35·68 degrees under proof; 25 degrees being the minimum allowed. In other words, it contained 64·32 degrees per cent. of proof spirit.—Defendant admitted the offence, but said he did not understand the rules of the hydrometer, and sometimes his wife saw to the liquors and sometimes he did.—The Chairman: First take the

gin; how do you account for its not having the proper amount of proof spirit?—Defendant: I tell you I don't understand it, sir. (Laughter.)—The Chairman: But it is not found to be of the proper strength, and something must have been done to it by somebody.—Mr. Upsall suggested that water had been mixed with the spirit in too great quantity.—The Chairman: Yes, the water would not come there by itself. (Laughter.)—Defendant: We have to bring it down to a certain strength.—The Chairman: And you did that?—Defendant: Yes. (Laughter.)—The Chairman: And the Irish whisky—that is mixed with water. Do you admit that?—Defendant: By the same rule. (Laughter.)—The Chairman: And the Scotch whisky the same way?—Defendant: Yes, sir. (Laughter.)—The Chairman: How long have you kept the house?—Defendant: Two years last Lady-day.—Dr. Adam: What is the strength when you get the spirits?—Defendant: Proof strength.—The Chairman: How do you arrive at the quantity of water you put in? Is it guess-work?—Defendant: Yes, sir. (Laughter.)—Dr. Adam: Does not your merchant give you instructions how to go on?—Defendant: Yes, sir.—Dr. Adam: And if you followed his instructions you would be right?—Defendant: Yes.—The Chairman: Did you follow them?—Defendant: No; my wife put the water in. (Laughter.)—Mr. J. Clarke: You didn't do it twice ever? (Laughter.)—Defendant: It was the water.—The Chairman: Of course. (Laughter.) There are no previous convictions in this case?—Supt. Crawford; No, sir.—The Chairman: You are aware that you are liable to a penalty of £20 in each case—that is £60 altogether?—Defendant: I was not aware of it.—The Chairman: Oh, but you are. I can tell you that now, and be aware of it in future.—Defendant: I will, sir. (Laughter.)—The Chairman: If we believed you had done this wilfully and knowingly, as an old hand, we should have inflicted a heavy penalty on you; but we believe you did it innocently, as a new beginner, and shall only fine you 5s. and costs in each case.

William Clifton, Barton, innkeeper, Benington, was summoned for a similar offence in respect of the sale of rum. The certificate of Mr. Southwell in this case showed that the rum had been admixed with water so that the admixture was 30·84 degrees under proof; 25 degrees under proof being the minimum of alcoholic strength allowed by the law for rum. In other words, it contained 69·16 degrees per cent. of proof spirit. Defendant admitted the offence. He said he had been laid up with a cold about four months, and had not been able to see to things himself, and his daughter had had the management of the liquors. There had been a mistake made somewhere, but he was not aware of it.—The Chairman: But the water would not get there without some cause.—Supt. Crawford said he had taken samples from this defendant once or twice before, and they had been found to be good. Defendant was fined 5s. and costs.

This is a class of offence that is practised by almost every publican in the kingdom, but, as already explained, it is only when he is not artful enough to avail himself of the notice dodge that he can be punished. The question naturally arises, Why should the notice that legalises this swindle be allowed by the law? At present there are, perhaps, two or three cases per week of prosecutions for spirit adulteration. Were it not for the protection the notice affords fraud, there could be as many *thousands* of prosecutions in any one week. Yet the brewers, distillers, and publicans never tire of parading the lying nonsense with which Sir Wm. V. Harcourt was crammed that there is practically no adulteration in the trade, and upon these, as well as scores of like important questions, the late Select Committee on Adulteration took no evidence whatever. Meanwhile, although to those who understand the question it is as sensible to ask the Food and Drugs Act inspector to dry up the Atlantic with a mop as to ask them to stop adulteration of beer and spirits, there are instances such as the above and the following where the inspectors contrive to do something to stop the sale of water at spirit prices. Thus, at Alfreton last week, John Jackson, publican, of Swanwick, was charged with having sold adulterated whisky on June 20. Colonel Shortt, inspector under the Food and Drugs Act, prosecuted, and Mr. Middleton, of Chesterfield, defended. Colonel Shortt proved the purchase of half-a-pint of whisky, which, when analysed, was found to contain seven parts of added water, being 30.5 degrees under proof. Fined £1 and £1 is. costs.

These cases show that the officials concerned with enforcing the Acts do not lack the will. It rests with Parliament to give them the power. Until then it is within the liberty of magistrates to assist them by heroic decisions like the following, but we strongly doubt if, on appeal, they would be upheld, as the tendency of High Court decisions has been rather to encourage such practices than to prohibit them.

At Sevenoaks a fortnight ago, Algernon E. Cotton, proprietor of the Dorset Arms Hotel, Sevenoaks, was summoned for selling half-a-pint of whisky, on the 30th of July, which was adulterated with 29.54 per cent of water.—Mr. Wardley appeared for the defendant.—P.C. Marsh gave evidence as to the purchase of the whisky, and stated that he informed the barman at the time for what purpose the spirit was purchased.—Supt. Holman stated that the whisky was purchased by his instructions. The analyst's report showed that the whisky was 4.54 under the legal limit of proof. In reply to Mr. Wardley, witness said he saw the notice produced, but in any case he should ignore it as it was not a legal one. The card simply stated that "All spirits sold in this establishment are diluted with water." He objected to this as not stating the exact degree of dilution, and contended that if this notice were accepted as protection for the landlord, the Food and Drugs Act would be rendered a dead letter.—Mr.

Wardley contended that, as the notice was exhibited in a conspicuous position, there was no intention of fraud.—The Chairman said that magistrates felt they were bound to convict, but would only inflict a fine of £1 and costs. They might inform defendant that if he had given notice to his barman to inform the purchaser that the article bought by him was whisky and water they could not have convicted.—Mr. Wardley: Your Worships find, as a matter of fact, that the purchaser was defrauded?—On the advice of the Clerk, the Bench declined to enter into details. But despite these facts we shall still have the publican paraded as one who scorns adulteration's artful aid, although a West-Riding of Yorkshire Inspector, Mr. H. Newbould, said, at Dewsbury a fortnight ago, that he found in that district that, in proportion, there was more adulteration of whisky than of any other article.

SOMERSET HOUSE IS RECOGNISED.

In an old play, a person supposed to be insane is accosted by a fussy fool, who asks, "Do you know me?" "Yes," was the reply, "you are an ass." "Ah, he has recovered his senses," was the fervent ejaculation, "for at last I am recognised." Like the butt in the play, Somerset House may congratulate itself upon the fact that at last it is recognised; and we may take some credit for the fact that we have so caused it to be recognised through the length and breadth of the kingdom. During the past ten days there have been some hundreds of articles published in the general press on the adulteration question, and the bulk of them have been plain spoken in their condemnation of the methods of Somerset House, making it clear that the connection of that incompetent department with the Adulteration Acts must cease. Want of space prevents our quoting these multitudinous evidences that Somerset House has been at last recognised, so we must confine ourselves to one or two of the most plain-spoken. The *Sunday Chronicle*, a journal of enormous influence and circulation throughout Lancashire and Yorkshire, in its last issue says:—

"But even where the authorities are honestly endeavouring to enforce the law, and the analyst is abroad, the inexplicable obstructive conduct of Somerset House, and the leniency with which magistrates all over the country treat the offenders that are brought before them, combine to render the Act of no effect. Somerset House, indeed, seems to have set itself to create a new record among the public departments of "how not to do it." Some time ago a set of rules for the guidance of analysts was issued, at its instance, by the Local Government Board, and a glance at the code shows that if those who are responsible for it had designed to render the Act nugatory they could not have better effected their purpose. Thus, they say that samples of butter submitted for analysis should not be less than ½ lb., and should be placed in wide-stoppered bottles!—conditions

that, as Mr. Stokes, the public analyst of Hampstead, Paddington, St. Luke's, and Bethnal Green shows, would cost the parish 3s. 9d. for every sample taken, besides which he should sample butter by the ounce, or when it is spread on bread in the coffee shops, if he is to protect the consumer who is most preyed upon by the fraudulent trader, and who is least able to help himself. Another rule is that samples of milk must be taken in quantities of not less than a pint; so that here again the small consumer, who, in such a neighbourhood as Bethnal Green, buys his milk by the halfpenny and even the farthing, is left to the conscience of the milkman.

"But the most mischievous form which the ineptitude of Somerset House takes is that the officials obstinately refuse to declare a standard or definition of adulteration, although the matter has been repeatedly pressed upon them, and the Committee of the Society of Analysts has fixed upon one which would obtain general acceptance. Failing the publication of such a standard the public analyst has no guarantee that any action he may take in the cases where the adulteration is in small proportions will be backed by Somerset House, and thus has to choose between passing over such cases or exposing himself to the mortification of a magisterial rebuff on the strength of a finding which is regarded by the Bench as of unquestionable authority because it comes from a Government Department, but which is in all probability obtained by antiquated and imperfect methods.

"We need hardly wait for the report of a fresh committee to make up our minds where the law and its administration are defective. In the first place the Customs authorities must be compelled to do their duty, and to rigorously sample all imported articles at the port of entry, while nothing but the genuine article shall be allowed to pass as 'butter' or 'cheese,' by which means the import of bogus butter and counterfeit cheese will be effectually checked. Then, in regard to the retail trade, it is imperative that the Act shall be put in force by all local authorities, while the leniency of the magisterial bench must be counteracted by so strengthening the law that imprisonment without the option of a fine shall be the penalty of second and subsequent offences; and finally we must have, wherever possible, a fixed standard of adulteration, just as we have of weights and measures, and the obstructionists of Somerset House must be taught that the country will not permit the laws which so deeply concern the welfare of the whole community to be rendered of no effect by the antic impertinence of any jack-in-office."

London, on September 12th, had an article on "The Sins of Somerset House," in which it said:—

"The analysts and the public authorities are not really to blame, as Somerset House, which is the chief power in such matters, and the Customs authorities seem to act rather in favour of the fraudulent traders than otherwise. The conduct of the Somerset House

authorities is, undoubtedly, the most serious obstacle to effective administration of the present law.

"There is overwhelming evidence in this report that the law is openly defied, and that the local authorities are not vigilant or determined in their efforts to enforce it. In 48 towns containing an average population of over 30,000 each, no samples were taken for analysis last year. In London an effort is made to put the Act in operation, but the conduct of Somerset House and the slight penalties inflicted for offences make the action of the analysts difficult. Mr. A. W. Stokes, who is public analyst to Hampstead, Paddington, St. Luke's, and Bethnal Green, gave evidence before the Committee on the difficulties which beset him. At the instance of Somerset House the Local Government Board issued rules to the vestries for the guidance of the analysts, which that Board thought so important that it printed them twice in its annual report. These rules were evidently designed to assist fraudulent dealers. For instance, samples of milk must be taken in quantities of not less than a pint; but in Bethnal Green, said Mr. Stokes, the poor usually purchase a farthing's-worth of milk. The milkmen would supply a different quality when asked for a pint, so that milk adulteration has been practically put beyond the reach of the analyst in Bethnal Green. A similar absurd rule has been made with regard to butter. Somerset House authorities say that samples of butter should not be less than three-quarters of a pound and should be placed in wide-stoppered bottles. Mr. Stokes says that under these conditions it would cost the parish 3s. 9d. for every sample taken. He prefers to sample butter by the ounce or when it is spread on bread in coffee-shops. The greatest hindrance of all in the way of administering the Act is that Somerset House declines to let the analysts know what its standard or definition of adulteration is.

"Mr. Stokes told the Committee that the Society of Public Analysts had fixed upon a standard, with which most of them agreed to:—

"'But the Court of Appeal is Somerset House, and we do not know what their standards are; they have never published them.'

"'But, I suppose,' asked Sir Charles Cameron, 'that, nevertheless, the Somerset House standards are pretty well known throughout the body of public analysts?'

"'They only get known by those cases in which disputes arise; they never get known otherwise. The Somerset House people do not advise on methods of analysis. At the present moment I could not tell you how they analyse butter, nor do I know what their standard for milk is.'

"It seems that the Somerset House authorities use antiquated methods of analysis, and keep their standard, which is supreme, a secret; the only object of which is to deter analysts from raising prosecutions, and to encourage offenders."

A department that has contrived to earn encomiums so glowing as these excerpts show, is, of a surety, so

publicly useful and creditable to the country owning it that its existence in such a position ought not to be a matter of years but of hours. We have, however, the consolation of knowing that our three years' exposures of its glaring incapacity have, at last, caused it to be fairly written down throughout the kingdom as Dogberry wished to be.

DEALER ATTEMPTS TO BRIBE AN INSPECTOR.

THE past week has seen scores of newspapers commenting on the recently-issued report of the Food Products Committee, and hinting at the bribery, etc., alleged to prevail, but of which no proof was brought before the committee, as our readers who remember Mr. James Hudson's impudent shuffe when pressed for proof of his allegations, well know. We denied Mr. Hudson's statements the moment they were made, and our columns have again and again recorded the refusals of inspectors to accept bribes, and their zeal in the public service.

The following fact may be instructive to those who talk so glibly about the bribery question. At Brierley, on Sept. 16, John Nicholls, of Tipton, was charged with having seventy-one pieces of ham and bacon on sale in Brierley Hill Market on August 27, which were unfit for human food. Mr. Waldron prosecuted on behalf of the Brierley Hill Urban Council, and said the case was of the utmost gravity—first, on account of the abominable condition of the ham on August 27 at defendant's stall, and, secondly, because the defendant on the Saturday after the offence saw the inspector to the Urban Council, and endeavoured to bribe him with a half-sovereign. The inspector seized seventy-one pieces of ham, and for each of these proved to be unwholesome defendant was liable to a fine of £20. Defendant had been the occupier of a stall in the market for about eighteen months, but at the time of the seizure the inspector found the stall in charge of a man named Cooper, who seemed to be selling the ham for what he could get. Besides the pieces of ham on the stall there were other pieces under it, and some were in a putrid condition. After they had been condemned in the usual way, they were burnt. It was on the Saturday after this that defendant offered the inspector the bribe of a half-sovereign he had before mentioned. Mr. Waldron asked the Bench to take a serious view of the case, remarking that Brierley Hill market seemed to be a place where some people thought they could come and offer meat of this bad kind. He should show that one person who bought some ham found it stunk so badly when she cooked a piece that she threw it away, and took the rest to the inspector. Mr. John Alden (sanitary inspector) then deposed to the seizure of the meat at a stall of which Harry Cooper had charge for defendant on August 27. Afterwards Nicholls (the defendant) came to him, and asked him whom he could see to arrange the matter. Witness said he could not advise him, but the best thing he

could do would be to see the clerk to the Board. On the following Saturday defendant came to him again. He said to witness that he had no business to take the bacon under the stall, and that if he (defendant) had been there it would have been him and witness for it. Afterwards he wanted to force a half-sovereign on him. He received some ham from a Mrs. Walkley on the Tuesday. This, and the other ham, was all bad. Mrs. Walkley said she purchased this ham from defendant's assistant, paying him 9d. for a pound and a half. It stank badly when she cooked a piece, and she took the rest to Mr. Alden. She had always had good ham before from defendant's stall. Dr. Ellis said he saw the ham seized, and some of it was rotten and putrid. None of it was fit for human food, and it was positively dangerous. Defendant said that the ham referred to was not intended for sale, but to be thrown into the grease tub. Cooper took it through being inexperienced, witness being away at the time. He hoped the Bench would be as lenient as they could. The Bench said it was a very bad case, as the defendant not only sent this bad meat to the market, but tried to bribe the inspector, and had threatened him. They should fine him £25, including costs, and in default of payment or distress, three months' imprisonment. Defendant asked for time to pay, and he paid £10 down, and was allowed a fortnight's time to pay the remainder.—Harry Cooper was charged with a similar offence, he being the person in whose possession the ham was when seized. Mr. Waldron said he believed this man was really the servant of the other defendant, and he asked for the case to be withdrawn on payment of costs. This the Bench assented to.

We have given many instances of like refusals to accept bribes. If Mr. James Hudson has yet discovered any cases to support his defamatory allegations, our columns are open to him to make them public and prove his case. If he refuses to do so, the retraction of his assertion ought to be made as widely public as was his unsupported allegation.

THE DIFFICULTIES OF PURE MILK.

WHEN an Inspector is able to not only comply with all the requirements of the Adulteration Acts, but to successfully correct a defending solicitor upon the law governing his case, and the public analyst certifies that the fat has been abstracted from milk, it might naturally be expected that a conviction would follow, but a case tried last week shows how exceedingly difficult it is to prove adulteration or the abstraction of fat from milk before many magistrates.

Jabez Hampton, wholesale dairy farmer, of Whetstone, was summoned to answer a charge of selling milk from which fat had been abstracted. Mr. A. L. Bridge, County of Middlesex inspector under the Adulteration of Food and Drugs Act, said that, at the invitation of one of the directors, he went to the North Finchley branch of the Manor Dairy Company on June 19th,

about six o'clock in the morning. A churn of milk from the defendant's farm was deposited in the company's yard. He stirred the milk and took a sample, which he took an hour afterwards to the county analyst. At this point a question arose as to whether the defendant was entitled to a portion of the sample taken by the inspector.—Mr. Bridge said these proceedings were taken under the third section of the Amending Act of 1879, whereby it was not necessary for him to give defendant a portion of the sample intended for analysis.—Mr. Forbes, solicitor for the defence, said it was necessary that the article should be divided, and quoted the case of *Rouch v. Hall* in support of his contention.—Mr. Bridge said the case quoted was very ancient, and did not apply to the section at all. The case of *Hiett v. Ward* (Queen's Bench Division) completely cut away Mr. Forbes' contention.—Mr. Bodkin: We are against you, Mr. Forbes, on this point.—Mr. Bridge, proceeding with his evidence, said the certificate of the analyst showed that fat had been abstracted from the milk. During July he saw the defendant's cows milked, and took samples on the spot. As he did not see the cans, he could not say what might have been done to them before they were put under the cows.—Mr. Forbes: Why did you not look into the cans?—Mr. Bridge: It was not my business to do so. The defendant ought to have shown me everything without asking.—Mr. Forbes: Can you suggest any method by which the fat could have been abstracted in so short a time?—Mr. Bridge: Yes, it could be done with a separator.—Mr. Edward Bevan, the county analyst, said that had there been three per cent. of fat (his minimum of analysis) in the original sample he would have passed it. The succeeding samples he did pass.—Mr. Bodkin: Your view is that fair milk ought to have a certain percentage of fat?—Mr. Bevan: Certainly. It was poor milk, but I should not call it adulterated.—Mr. Bodkin: Do you adhere to the word "abstracted?"—Mr. Bevan: The fat must have been abstracted in some way.—The defendant deposed that the milk left his premises exactly as it was taken from the cows. He did not make butter, nor did he keep a separator.—Robert Hampton (son of the defendant), who took the milk to the company's premises on the morning of June 19, gave similar evidence.—Mr. Bodkin said the Bench were satisfied that there had not been any criminal abstraction, and the summons would therefore be dismissed.

But, in spite of cases like this, the ordinary writer of newspaper leaders or leaderettes continues to scribble anent Food and Drugs Act Inspectors, and suggests that they are bribed, lazy, or indifferent, and make no serious effort to suppress adulteration. Truly, a little knowledge is a dangerous thing, and the daily press leader-writers have a monopoly of that little.

THE HYGIENE OF PARCEL WRAPPING.

"MONTPELLIER is the first town in France—or, as far as we are aware," says *The British Medical Journal*,

"in any other country—which has dealt with the wrapping-up of parcels from the sanitary point of view. By a decree of the Municipal Council, passed some time ago, the use of coloured paper for parcels containing food stuffs of any kind is absolutely forbidden. Printed papers or manuscripts may, if unsoiled, be used to wrap up vegetables, but every other kind of eatable must be done up in new white or straw-coloured parcel paper. Under this enlightened ordinance Montpellier offers one special advantage as a place of residence to minor poets: the offspring of the Muse cannot be degraded to the vile uses of the butterman, but at worst can only be made to serve as coverings for the pastoral potato and the harmless necessary cabbage." But is it not rather rough on the potato and cabbage that they should be subjected to the indignity of being encircled with paper spoilt by the outpourings of the Le Galliennes, Langs and the rest, who tire the public with their pretentious posing. Because a potato is a potato, and a cabbage a cabbage, is it fair to assume that those edibles have no self-respect?

WATER FILTERS.

THEIR NEED IN LONDON.

THE important subject of water filtration and domestic filters, with some reference to the London water supply, was discussed in a lecture given by Dr. S. Rideal, F.I.C., at the Chemists' and Druggists' Exhibition, at the Royal Agricultural Hall, Islington. Dr. Rideal pointed out that at the present time the filter trade was in a transition from what might be called the mechanical to the bacteriological state. Chemists had done wisely in the past in refraining from advising their customers into purchasing filters of the old carbon type, which had been fruitful in spreading disease instead of alleviating it, and in fact nearly all the old patterns of filters had failed in their essential duty of supplying pure and wholesome water. The bacteriological test for the efficiency of a filter had been brought about by the general acceptance of the germ theory of disease, and our increased knowledge of the important part which impure waters played in carrying these pathogenic organisms from place to place. Dr. Drown, the well-known chemist to the Massachusetts Board of Health, in his last report, pointed out that the chief object of water filtration was not the removal of visible suspended matter, and so ensuring a bright filtration, but the removal of the disease-producing germs. Drs. Sims Woodhead and Cartwright Wood had recently showed that out of upwards of thirty filters selected as those most generally used in this country, only two or three of the newer forms of filters failed to allow the passage of bacteria. In America, during the last few years, similar experiments have been carried on by Dr. Drown and his colleagues on a large scale, and town filters had been constructed of sand, which would yield 2,000,000 gallons of water per acre daily, whilst removing 99.5 per cent. of the bacteria in the applied

water. The filtration works of a water company could only be regarded as the first line of defence taken by the community to ensure better water supplies. Contamination might be caused by leakage from drains, or by infection of cisterns, and this rendered domestic filtration important, even in towns where the public authority had done its best to supply a pure water. In London, where the present supply is far from perfect, both in quality and quantity, it was still more urgent that householders should be in possession of reliable filters. The survival of the fittest obtained in filters as in everything else, and they had, in the so-called candle filters, made of unglazed earthenware, filters which to some extent might be relied on for effecting the removal of the germs of infectious disease.

ANTISEPTIC LAMPS.

THE following brief account of some newly-invented antiseptic lamps is translated by *Lit. Digest* from a review of recent inventions in *La Natur*: "It is well known that formic aldehyd or formol is a powerful antiseptic. The commercial product is obtained by oxidising methylic alcohol or wood-spirit. The idea has been put into practice of constructing lamps to burn wood-spirit, and thus give off vapours of formol, which would disinfect apartments, hospitals, hotels, workshops, schools, etc. The process is simple, very convenient and quite cheap. The formogen lamp of M. Trillat is composed of an alcohol lamp surmounted by a cylinder having at top and bottom two series of orifices that may be regulated in size. A metallic screen made of platinum is placed across this cylinder. The lamp is filled with methylic alcohol, lighted and covered with the cylinder. The metallic screen becomes incandescent and then the flame must be extinguished. The alcohol vapour maintains the platinum in incandescence, forming the 'flameless lamp' well known to chemists. Collens indicates a simpler device. An alcohol lamp is filled with wood-spirit and its wick is so regulated that it reaches scarcely above the bobèche. It is then covered with a little basket of platinum gauze 1-12 inch high and $\frac{1}{2}$ inch in diameter. The lamp is lighted. It burns with flame, without formation of formol. The flame is extinguished and immediately antiseptic vapours are produced. Muller's smoke-consuming, hygienic lamp can serve the same purpose by filling it with wood-spirit instead of ordinary alcohol. It appears from recent tests that two quarts of methylic alcohol must be burned to sterilise an extent of 2,700 cubic feet. The vapours of formol have no injurious effect on furniture, etc."

ARTIFICIAL CHEESE.

MR. BRIDGE, inspector to the Middlesex County Council, has shed a little light on the reason why English cheese-makers have lately been bemoaning the ruin that has overtaken their industry. At Edmonton Petty Sessions he summoned Isaac Humphreys, of 138, Angel-road, Edmonton, for having sold to him cheese which was certified by the County Analyst to be adulterated with 18 per cent. of foreign fat, and to contain no milk fat. The inspector purchased a half-pound of the material for fourpence.—The defendant's wife said that when she served Mr. Bridge she told him that the cheese was very strong and, perhaps, would not suit him. (Laughter.)—The Bench told her that the defendant could proceed against the person who supplied the material to him. They ordered the defendant to pay a fine of £1 and the costs, the

analyst's fee (altogether £1 19s. 6d.), or go to prison for 14 days. Mr. Bridge mentioned that this was the first prosecution for selling adulterated cheese that had taken place in the county.

Truly this is a wonderful age, for beer made without malt and hops, whisky that is innocent of malt, wine that never knew a grape, and even imitation coffee beans may, amongst other imitations, be had.

OZONE NOT A MICROBICIDE.

PROFESSOR D'ARSONVAL, of the College of France, speaking at the Society of Biology, said that the prevalent idea of ozone being comparatively easy to produce in quantity is erroneous. On the contrary, an enormous electro-motive power is essential to make even a small quantity, and it was estimated that a force represented by 21 tons was expended in order to prepare about 360 grains. Ozone can be prepared by M. Berthelot's method of flashing the spark of an electric coil between two receptacles containing water acidulated with sulphuric acid, but the results are very meagre. M. d'Arsonval, using his special apparatus, by means of which he was enabled to call into action rapidly alternating currents of high potentiality, succeeded in preparing notable quantities of ozone. In order to test the presumed microbicide power of this gas, he caused pyocyanic cultures of diphtheria and typhoid to be thoroughly exposed to the influence of an atmosphere composed of 43 per cent. of ozone during half an hour; at the lapse of this time the germs were still living. Hence he concludes that the microbicide power of ozone is a myth.

LINSEED MEAL ADULTERATION.

AT Ballybot Petty Sessions on Sept. 9, Henry Gilbert, of Bessbrook, was summoned under the Food and Drugs Act for selling linseed meal containing 15 per cent. of farinaceous matters. The chairman, Mr. H. Turner, R.M., in fining defendant in 5s. and costs, said that if the canister in which the meal was kept had been labelled "feeding meal" or something like that, and its contents sold only for that purpose, a prosecution could not be sustained. But when it was sold for poulticing also, the case was different. After this warning, heavy fines would be imposed in similar prosecutions in the future.

FLINTSHIRE COUNTY COUNCIL AND THE ADULTERATION OF FOOD AND DRINK.

IT was reported by the county analyst that 38 samples of food and drink had been examined during the quarter. It was found that one was adulterated. The samples of milk from the Rhyl district were of very poor quality, being only just up to the Somerset House limit, which usually means a small amount of adulteration. The samples of milk from Holywell and Mold were good. All samples of butter were genuine, and the bread was of good quality. The samples of beer were free from excessive salts and had been bittered with hops.

CHEDDAR CHEESE-MAKING.

THE Board of Agriculture has issued a report on the distribution of grants in Great Britain, appended to which are a number of accounts of experiments and operations aided by the Board. In his report to the Bath and West of England and Southern Counties Society, of certain experiments in Cheddar cheese-making, Mr. J. Lloyd, F.C.S., says:—For three consecutive years the Society's cheese school had been located in a district where it was said that good cheese could not be made, and the farm selected for the school in 1894 was no exception to this rule. The fault as regards the cheese-making capabilities of the different districts had always been laid on the nature of the land; yet on every occasion the soils had been analysed by Dr. Voelcker, and in no single instance had he been able to detect the presence of any chemical constituent which would be injurious to the milk or to the cheese made therefrom,

or which would in any way prevent good cheese being made of such land. The pastures, too, had always been carefully examined by the Society's botanist, and in all cases did he report that he was unable to find any weed or plant which would cause the slightest taint in the milk, or which could in any way be considered as even remotely likely to injure the milk, or cause the pasture to be the source of any taint in the cheese. All the conditions were favourable to the production of a large yield of milk, yet it is a remarkable fact that the average daily yield of milk from 1st May to the end of October, 1894—in a season when food was abundant—was exactly the same, viz., 27lbs., at the farm where the school was placed in 1893—a season which was exceptionally unfavourable to the production of a large yield of milk. While, however, the average daily quantity of milk yielded on the two farms in the two years was the same, the composition of the milk was very different. The milk at the 1894 school was of exceptional quality, so that the proportion of cheese made in 1894 was far higher than in 1893, in fact, on the average of the seven months during which the school was open, it appears that the highest proportion of cheese to milk was obtained at this school as compared with that obtained at any of the other three schools, as the following figures, which give the average amount of cheese from one gallon of milk during seven months, show:—1891, 978lbs.; 1892, 934lbs.; 1893, 935lbs.; 1894, 988lbs. In addition to the regular work of taking daily observations, which was carried on as in former years, certain experimental cheeses were made with the view of testing various points. The Scotch system of making Cheddar was one point which engaged attention as being very different from that which obtains in the West of England. The first consideration of the Scotch maker is said to be the obtaining of sufficient ripeness, by the morning, in the milk of the previous evening, and on no account would the rennet be added until this had been obtained. When such is the case, the rennet is added in the proportion of one part to 4,320 parts of milk, being about double the quantity employed in the West of England. The curd is set for one hour and then cut with an American curd knife. Under this Scotch system certain experimental cheeses were made with a view of discovering the cause for the cheese being made in so comparatively short a time, while obtaining that amount of acidity in the curd which had been shown to be essential to a good Cheddar, whatever way it may be made. The conclusions arrived at are claimed to show that the value of the Scotch system, so far as its rapidity is concerned, depends primarily upon obtaining sufficient ripeness in the milk to start with, and that, failing this, it is as long a process as that usually employed in the Society's Schools. Next, they are said to show that it is the opening up of the curd to the atmosphere under the Scotch system which causes the rapid development of acidity, proving thereby that the development of lactic acid is promoted more by free access of air than by mere temperature. The bacteriological observations formed an important feature of the work of 1894, and as regards these, attention was paid mainly to those organisms which were present in the curd when it was fit for grinding. The first fact stated as being worthy of note is that some of the organisms found in preceding years were not once found in 1894. On the other hand, some were found in this year which had not been previously met with. Again, it was noticed that at different times of the year different organisms made their appearance and then disappeared again. The work, however, was mainly directed towards finding out the origin of those taints which are such a source of trouble to the cheese-maker. Pure cultures of the particular organisms were obtained; the milk on certain evenings was divided into two parts, one of which was treated in the usual way and later converted into cheese of very good quality, the other part was inoculated with the organism in question and then converted, also in the usual way, into cheese. The results were cheeses which were described as perfect sponges. Finally, it was noted that all the cheeses made with inoculated milk were more or less bad, and that of the cheeses made in the ordinary way, but pronounced ultimately as of inferior quality, 75 per cent. were made from milk which had been found to have a taint in it. The conclusion is, therefore, drawn that, as regards the majority of bad cheeses made in the country, the fault is due to the impurity and contamination of the milk before use, and that such contamination is for the most part, if not entirely, brought about by the presence in the milk of micro-organisms of bacteria.

AN AMERICAN LAW TO SUPPRESS FOOD ADULTERATION

THE following is the text of an Act passed by the Pennsylvania Legislature at its last session and approved by the Governor:—
AN ACT to provide against the adulteration of food and providing for the enforcement thereof.

SECTION 1. Be it enacted, etc., that no person shall within this State manufacture for sale, offer for sale, or sell any article of food which is adulterated within the meaning of this Act.

SEC. 2. The term "food" as used herein shall include all articles used for food or drink by man, whether simple, mixed, or compound.

SEC. 3. An article shall be deemed to be adulterated within the meaning of this Act

(a) In the case of food: (1) If any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength, or purity. (2) If any inferior or cheaper substance or substances have been substituted wholly or in part for it. (3) If any valuable or necessary constituent or ingredient has been wholly or in part abstracted from it. (4) If it is an imitation of or is sold under the name of another article. (5) If it consists wholly or in part

of a diseased, decomposed, infected, tainted, or rotten animal, or vegetable substance or article, whether manufactured or not—or in case of milk if it is the product of a diseased animal. (6) If it is coloured, coated, polished, or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is. (7) If it contains any added substance or ingredient which is poisonous or injurious to health. *Provided*, that the provisions of this Act shall not apply to mixtures or compounds recognised as ordinary articles or ingredients of articles of food if each and every package sold or offered for sale be distinctly labelled as mixtures or compounds, and are not injurious to health.

SEC. 4. Every person manufacturing, offering, or exposing for sale, or delivering to a purchaser any article of food included in the provisions of this Act, shall furnish to any person interested or demanding the same who shall apply to him for the purpose and shall tender him the value of the same, a sample sufficient for the analysis of any such article of food which is in his possession.

SEC. 5. Whoever refuses to comply upon demand with the requirements of Section 4 and whoever violates any of the provisions of this Act shall be guilty of a misdemeanor, and upon conviction shall be fined not exceeding one hundred nor less than fifty dollars, or imprisoned not exceeding ninety nor less than thirty days, or both; and any person found guilty of manufacturing, offering for sale, or selling any adulterated article of food under the provisions of this Act shall be adjudged to pay in addition to the penalties herein provided for all necessary costs and expenses incurred in inspecting and analysing such adulterated articles of which the said person may have been found guilty of manufacturing, selling, or offering for sale.

ADULTERATED WHISKY IN WOLVERHAMPTON.

AT the Wolverhampton Police-court on Sept. 13, before the stipendiary (Mr. N. C. A. Neville), Thomas Wilkins, licensee of the Summer House Inn, Newhampton-road, was summoned upon the information of Mr. G. F. Allwood (inspector of food and drugs), for selling adulterated whisky.—It was proved that the spirit supplied to Mr. Allwood contained 12·7 per cent. of water beyond the statutory limit of strength.—A fine of 40s. and costs was imposed. A summons against the Holt Brewery Company, Birmingham, under whom Wilkins holds the house, and for whom Mr. A. Whitehouse appeared, was dismissed, it being explained that the company had nothing to do with the sale of spirits.

ADULTERATED GIN AT ROCHESTER.

LAST week Mr. Evenden, landlord of the Royal Oak at Frindsbury, was summoned under the Drugs Act for selling spirits 3·93 below the legal limit. Mr. L. A. Goldie (Greathead and Goldie) defended. After hearing the evidence, the Magistrates gave the defendant the benefit of the doubt, and dismissed the summons.

Mr. Sanders, landlord of the Five Bells Inn, Hoo, was summoned under the Drugs Act, for selling to P.C. Andrews a half-pint of whisky and a half-pint of gin on the 5th August. Superintendent Lacy deposed that he received the spirits and had them analysed, and found that the gin was 4·19 below the legal limit, and the whisky 6·52 below the legal limit. As the landlord could not account for this, he was fined £1 9s. in each case. Allowed a week to pay.

WEDNESBURY SEWAGE DISPOSAL.

COLONEL W. LANGTON COKE, M. Inst. C.E., Local Government Board Inspector, recently held an inquiry at the Municipal Buildings into an application of the Town Council to borrow £7,500 for works of sewerage and sewage disposal. Mr. E. Pritchard, of Birmingham, engineer for the sewerage, detailed the scheme at considerable length, stating it to be on the Polderite basis, and, he believed, it was the best possible at present known. In fact, he might say it was not likely to be improved upon. The Inspector examined the plans minutely, and promised to report to the Local Government Board forthwith.

PAISLEY AND ADULTERATION.

AT the monthly meeting of the Police Commissioners, Dr. Clark, Glasgow, submitted his quarterly report of samples forwarded to him for analysis by the burgh sanitary inspector as follows:—4 sweet milks all genuine; 1 sweet milk, doubtful; 1 sweet milk, fat deficiency, 20 per cent.; 2 skim milks, both genuine; 1 butter, genuine; 1 butter, 93 per cent. of fat not derived from milk; 1 coffee, genuine; 1 ground ginger, genuine; 1 black pepper, genuine; 1 white pepper, contained 20 per cent. of rice starch.

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Food and Sanitation.

SATURDAY, SEPTEMBER 28TH, 1895.

"PENNY DREADFUL" CANT.

THE latest discovery of the Punch and Judy Press is the "penny dreadful." Of course, that good man, W. T. Stead, has his plan—he is never without a plan if there is an opening for humbug and money to be got for it. It is the "penny dreadful" that causes so much juvenile crime, and the cure is pure literature to be supplied by the author of the filthy "Maiden Tribute." The question of enquiring if W. E. Forster's Act has proved a curse or a blessing is avoided. Compulsory education turns out a horde of half-baked creatures, who look upon honest blacksmithing or carpentering as degrading occupations, who have just enough knowledge to be ignorant in its worse sense, who swell the wretched army of clerks, and use their publicly-paid-for knowledge of the "three R's" to follow the "odds" and "snips" with which our filthy press teems. But is our press ashamed of its dirty work? Not a bit. Every adver-

tisement seeking philanthropic ink slinger clamours for more of the cramming. They avoid the fact that side by side with civilising education there is an alarming increase of "wastrels," uneducated useless wrecks of whom we have so many examples in the poor creatures turned out from Oxford and Cambridge, as well as in the clerking class. The professional friend of man, casting about for a means of advertising himself, hails wreck after wreck, hoping it will turn out a vessel to get kudos out of, but finding the salvage too scant to remunerate advertisement turns his glass farther till it alights upon a couple of boys, who, in cold blood, murdered their mother. It does not strike this sponging philanthropist that it was a crime that twelve men should saddle English taxpayers with the life keep of one young villain who murdered his mother, when a piece of rope and a five feet drop were handy. If it did he would not endorse or preach it, for a lethal chamber or sterilization of the unfit would be for such philanthropists a dangerous doctrine to preach. Practical persons might ask what was the excuse for living of W. T. Stead and others of that ilk.

The "penny dreadful" at its worst never reached the depths of W. T. Stead's filth, and we doubt if it is half as pernicious as erotic rot like "Dolly's Dialogues," "The Manxman," or "The Woman who Did"—all of which pseudo-pornographic trash has its stoutest supporters in the *Daily Chronicle* writers, who wax pathetic over the evils of the "penny dreadful." One foolish person editorially asked why "Jane Eyre" was not supplied to the young in place of the "penny dreadful"! It would be hard to find even in "Deadwood Dick of Deadville" characters as scoundrelly as Charlotte Brontë's hero Rochester, or "literature" more worthy of being thrown into the fire. We have far too much literature of *The Fagin's Miscellany Review of Reviews* class. Filth like "The Manxman," "The Woman who Did," and "Dolly's Dialogues," floods the bookstalls. In the days when Shakespeare and Ben Jonson wrote, and when Raleigh, Blake, and those who made our "Augustan Era" lived, men were not Board-Schooled to pattern, with every idea the result of ignorant gearing. We had not thousands of writers wearying us, but the few that had grit came to the front, whilst the Steads, Price Hughes, and the like of that time would have been treated as the expert dog-breeder treats the "grec." All-pervading as "puffery" is, it cannot persuade the public to be gulled "all the time," and the Education-gullery is one that day by day is proving the folly of. The "penny dreadful" at its worst never did as much harm to the public as W. T. Stead's filthy concoction of lies—"The Maiden Tribute"—did, and the time has come when the taxpayer can reckon up his losses and gains. His gains he can see in a young villain whose Board School education enabled him to read Read's career of lasciviousness, tempered by a clerk's scanty wages, and to journey to Southend to see his hero. His losses he can see in the myriads who are too proud to work but eager to steal; who are to-day Nitrate Kings, African explorers, M.P.'s—anything, in fact, that is dishonest—whilst to-morrow sees them served up at Bow-street, à la the Liberator.

THE FRAUD OF ADULTERATION.

THERE is no need to be pessimistic in order to agree with Carlyle that our life, our customs, and society

generally is made up largely of shams. From Parliament, with its ceaseless talk—talking used by one set to oppose the doing of anything useful by the other—professing to improve the laws till they become all patchwork, which even law-makers do not understand, but from which law-breakers often manage to stand under. From this institution down to the local loan office, which promises to lend on no security, can be traced much promise but little performance.

There is a tendency to pin too much faith to machinery, forgetting the inspiration, the spirit. The two are equally necessary; a good man without good organisation cannot do all he would, nor can good machinery do all it is capable of if not controlled by a good organiser. How many societies are there flourishing with pompous titles, whose existence now finds its chief end in paying the salaries of its officers. Leaving these sociological shams, let us deal with more palpable ones—those in relation to food.

There is hardly an article of food which is not adulterated more or less. There is only one way to look upon the question of adulteration, and it is this. It is non-performance of contract. The seller agrees to sell a certain specific thing for a certain price. He does not, but substitutes in its place something else, thereby defrauding or robbing the buyer. Looked at properly, it is immorality. This immorality is laughed at, even when exposed. Is it to be wondered at that other immoralities are also viewed with leniency? When adulteration is looked at in the above light, it becomes imperative that we, apart from personal tastes in food, should desire the law to be more stringent, more rigidly enforced. Whether it be drugs, tobacco, tea, coffee, alcohol, bread, meat, or anything purchasable adulteration should be considered as fraud. If a law is justifiable, it is when it steps in to protect the weak and the suffering. It is the poor especially who require the strong arm of the law to save them from being poisoned and robbed, by selling them rubbish.

If a buyer at a drug store asked for a certain drug and gave a counterfeit coin, the law would step in; yet, if a counterfeit drug is sold—well, it's business. Should a foolish man drink, he has a right to the spirit he pays for, without adulteration. The point is not whether alcohol or tobacco is good, but whether he is defrauded or not.

Occasionally, one reads of meat being condemned, but the inspectors are few and the harvest is plentiful. There can be no adulteration in meat, the danger in that case is disease, which even inspectors cannot always discover.

Not long since a man was summoned for employing his apprentices beyond hours. It was revealed that this baker bought up all the stale half-rotten brown bread, well flavoured and coloured it. He was fined for infringing the Factory Acts, but no action was taken against him poisoning the poor. Coffee is one of the most adulterated of foods. The public analyst for the City of London said that the samples he tested last year contained from 58 to 80 per cent. chicory. Last year, also, a grocer was charged at one of our police-courts with mixing chicory to the tune of 90 per cent. with his pure coffee. His excuse was "they all do it." A thief can excuse himself—"all thieves thieve." Rotten eggs, rotten fruit, rotten ham and beef cuttings are all utilised by the pie-man and the itinerant vendor of highly-spiced dainties with which the poor regale themselves. The wonder is not that there is so much illness, but that there is no more.

Quackery and adulteration we may put up with in food adjuncts, but when it comes to poisoning the basis of the food supply of the poor it ought to be put down with a strong hand. A bread diet, at best, is a poor one, but for the poor it is often all they can get. They are those that depend on it the most who have no convenience to make their own; they cannot prepare many vegetarian dishes, nor, at present, can their

money run to a fruit diet; so, above all, the law should help their weakness. Is it so? Just the reverse. Their bread is too often a vile concoction, made in filthy places with unsanitary surroundings, in bake-houses reeking with fumes akin to the manure shed. If they try for brown bread they often get the offal of wheat thrown holos bolos in. One poor fellow who had eaten this stuff for years died of bowel inflammation. At the autopsy, one doctor looked up into the face of the other and said, "This case reminds me much of the prodigal son." "How?" "Because he has eaten of the husks the swine did leave."

Salt and yeast are as nothing compared to other substances mixed in bread. Then there is this to be remembered—bakers are peculiarly liable to chest diseases and consumption. In mixing up a batch, the mixer becomes sweatful, and his emanations, excretions through his skin, mix with the flour. Nor is it uncommon for them to use their feet in the trough as a change from their hands. As a sample of what places the poor may get some of their bread prepared, take this. It is reported in the papers of March 5 last. "The w.c. of the house was next to the bakehouse. Sewage was flowing inches deep, percolating through the walls; passage to bakehouse flooded with filth. They made tarts all day, bread at night: 48 lived in the house, only a single so-called lavatory. The magistrate ordered it to be closed, but neither the owner nor tenant were punished." Whatever Dr. Lacey Evans may say about bread being the staff of death—there is no doubt, made under such conditions, it is so.

To the food reformer, these things afford obstacles to his enquiries. Does he seek to find out how far meat is responsible for health or disease? He sees that he cannot properly carry out his enquiries, because of impure, tainted, and rotten meat, which he does not argue about—which all condemn. Should he try to discover how far bread tends to make a better or a worse race, he is met by the fact that, too often, the flour is not always sorted right; that sometimes the condition of baking are such as to destroy any good properties the flour may possess. If, when eating food, it could always be relied to be what it is supposed to be, the study of dietetics would be furthered.

Whilst wishing for a more stringent and active law—a law after the Chinese fashion, where the offender has to submit to have his offence painted over his shop for six or twelve months—we can best help ourselves by doing, as far as possible, without the nice-looking bun, the fragrant cup of coffee, this mixture, that compound. Rice is hardly worth adulterating, nor can anyone find profit in turning nuts inside out, and though attempts have been made to colour fruit, it does not pay, for it is easily discernible; for smell, weight, and touch are all helps in judging its quality. This adulteration should serve us as a warning, and if we are wise we shall leave alone, as much as possible, made-up prepared foods, and train our tastes to those prepared by nature, which are the healthiest and the best.—*Bakers' Record*.

IF CHRIST CAME TO CHICAGO!

THE *Medical News* says:—When a well-known journalistic mountebank wrote a book with the foregoing title he little thought how soon his imagined touchstone would be actually applied. According to many faithful believers, Christ, or, at least, his healing power, has already come to Chicago, incarnate in the person of one John Alexander Dowie. The World's Fair was his Feast of the Passover, on the occasion of which he came down to the great city, and his method of teaching is by the bill-board, the ten-foot sign, and the illustrated broad-sheet, instead of by the parable and the lilies of the field, but his spirit and results are said to be identical with those of the Nazarene. The

blind do hear, the dumb see, and the lepers have their tubercle-bacilli demonstrated unto them. Thousands of witnesses stand ready to testify that they have been healed, by the laying on of Mr. Dowie's hands, of every disease that their imagination could suggest, and some of them of several diseases. For instance, a whole congregation declare upon oath that in the healing, in their presence, of a woman who was partially blind, "with the falling of the scales there also came a visitation *which stripped the body of locomotor ataxia.*" This document can, however, hardly be considered as fully authenticated, as neither the eye-scales nor the peelings of locomotor ataxia are appended thereto as evidence, in properly certified envelopes.

One believer certifies that he was cured instantly of "rheumatism, hernia, kidney and liver disease, and the tobacco-habit;" another lost at one fell swoop "a number of internal cancers, tumours, etc.;" and yet another, "many diseases, including heart-disease, lung-disease, spinal irritation, iritis, and paralysis." It is really to be doubted whether the shock of having so many removed at once might not prove serious to delicate constitutions. More marvellous yet, three or four enthusiastic converts declare that one of their legs has been lengthened from three to four inches, but unfortunately they fail to state whether they were "pulled" or what means were used to secure the result. One of these had been "marked for the grave by all the doctors," after the well-known habit of the medical profession. Other than this, however, there is not a scrap of evidence of any scientific value as to the genuineness of either the cures or the diseases. One woman quotes Dr. Sanger Brown and "an association of physicians, some sixty in number," as authority for the fact that she had "idiopathic muscular atrophy." But Dr. Brown has no better taste than to come forward and say that she had only a "most serious attack of hysteria"—just as if anyone would take his word against that of a lady in a matter of this sort.

But this is a faithless and an unfeeling world, and, incredible as it may seem, in spite of hundreds of such pathetic testimonials as the foregoing, Mr. Dowie's neighbours on Edgerton-avenue are bringing suit for his removal as a nuisance. They advance the sordid and heartless claim that the continual procession of the halt, the maimed, and the blind destroys the comfort of their homes and depreciates the value of their real estate. 'Twas ever thus since the days when the devils were driven into the herd of swine; "the people of that country besought Him that He would depart out of their coasts. And if pork instead of real estate had been affected in Chicago, something much more drastic than a mere legal injunction might have been resorted to. It was more than suggested in Mr. Stead's book that Christ might not find Chicago an altogether desirable place of residence, but that Chicago would bring suit to have Him abated as a nuisance; reality has brought a plight beyond the power of even his flatulent imagination.

The moral of this little episode is simply that, with all their credulity, all the laity cannot be "fooled all the time." The charlatan, under whatever mask of sanctity or of science, will be surely discovered sooner or later. There is only one set of laws for this universe, and fraud will surely be detected and punished, either under the moral, the scientific, or the commercial code, and generally under all three.

WARMINSTER—A SERIOUS OUTBREAK OF TYPHOID FEVER ATTRIBUTED TO MILK.

THE Medical Officer presented his report as follows: I have to report a serious outbreak of enteric fever in the Common. The first case, that of a man aged 53, was brought to my notice on August 12. Another case

was reported to me on the 26th, but as the patient had lately returned from a week's camping out, I thought most likely he had contracted the disease in camp. On the 30th two more cases were reported, and on enquiry I found that these and the two former cases had all been supplied with milk from the same source. I immediately prohibited the sale of milk from that dairy, but on the 2nd and 4th fresh cases were reported, all of which had been supplied with milk from the same dairy, and to-day I have had notice of three fresh cases with the same milk supplied. The dairy from which this milk is supplied consists of three cows, which are kept in a meadow through which flows a very polluted stream, from which the cows drink. The parties connected with the dairy strongly repudiated my suggestion that they were in the habit of, or at some time had, used this water for cleansing utensils. A sample of this milk had been submitted to the County Analyst for analysis, and he has reported the milk to be "pure and of excellent quality." Notwithstanding this report, I think there can be no doubt that this particular milk has caused the outbreak, and from enquiries I have made I am satisfied that on a certain date during the past three weeks this milk was in a putrid and unwholesome condition, and capable of producing disease in the human subject. The ways in which this can be brought about are too numerous to mention. I should suggest that handbills be circulated in the neighbourhood advising housekeepers to boil milk before using it. A case of diphtheria and scarlet fever has also been reported by me, but the patients are now convalescent.

Mr. Moody enquired where the case of diphtheria had broken out.

The Chairman, in reply, said before that gentleman was a member of the Council the question of imparting on all occasions the name of the place where an infectious case had broken out had been looked at in all its bearings, and it was thought to be undesirable that all cases of infectious diseases should be published. Up to the present they had acted fully in accordance with that resolution, but if Mr. Moody wished them to reverse it, and could get a majority of the Council to support him, then Mr. Flower would be perfectly justified in imparting the information asked for, but not otherwise. There were two sides in which to look at the question. He was not saying Mr. Moody was not right, because if the Council was called upon to pass such a resolution he believed he should vote for it, but, unless such a resolution was proposed and carried, Mr. Flower would not be justified in imparting the information.

Mr. Moody said if any infectious disease broke out in the Common it was always mentioned, but if it broke out in other parts of the town it was hushed up.

The Chairman said Mr. Moody's assertion was absolutely untrue. It would be a disgraceful thing on the part of the Council if it made the least distinction in any part of the parish, and as long as he was chairman he would never countenance such a thing. Therefore, in making a statement of that kind, all he could say was that it was incapable of proof.

Dr. Flower stated that the name and residence of the patient in the case of diphtheria were entered in his book, and it was quite open to Mr. Moody to see it.

The book was handed over to Mr. Moody for examination.

Dr. Flower said there was not the least doubt that the milk was putrid and unwholesome on one occasion. He attributed it to something the cows ate. The mischief was not going on now.

The Chairman asked if the Council was to understand that the sale of milk was prohibited?

Dr. Flower: Yes; but the prohibition has been withdrawn since the receipt of the report of the analyst.

The Chairman said that arising out of the report was the suggestion that handbills be printed and circulated. He proposed that that be done.

Mr. Moody asked where the meadow was in which the cows referred to fed?

Dr. Flower: Henford Marsh.

Mr. Moody: Then are we not liable, because our sewage runs there? (Hear, hear.)

The resolution was agreed to, and the report approved.

UNWHOLESOME MEAT IN LEEDS.

AN interesting case to the general public was heard by Mr. C. M. Atkinson, the stipendiary magistrate, at Leeds Police-court, on Sept. 19. A butcher named Rennison Freeman, 53, Commercial-road, Kirkstall, was summoned under the Public Health Act, on two charges, one of having deposited the diseased carcase of a beast in a shed for the purpose of preparing it for sale, and the other of having deposited the organs of the animal on his premises at Kirkstall, for the purpose of sale. Mr. Jno. Harrison, Town Clerk, prosecuted, and Mr. Harland appeared for the defence.—Mr. Harrison said the case was a very serious one. A man named Arthur Heywood Lupton, employed by defendant as slaughterer and shopman, would state that about five o'clock on the morning of Aug. 20 he found one of his master's beasts in the field at Burley in a dying condition. He went for a knife, but the animal was dead when he returned. Nevertheless, he stuck it with a knife, and by means of a rope dragged it to a shed. Then he dressed the carcase as if it were intended for human consumption. Some of the organs of the animal were removed to defendant's shop in Kirkstall, and the lungs were buried in a dung heap. Defendant was away from home at the time, but he returned the same evening. He (Mr. Harrison) would prove that Lupton informed his master of what he had done, and that defendant took no steps towards removing the carcase.—Mr. Thos. Swallow, inspector of nuisances, said he visited the shed in question and found the carcase of a beast dressed in the ordinary manner. The flesh was very soft and wet, dark in colour, and quite unfit for food. Lupton told him the tongue and kidneys of the animal had been taken to the shop.—Lupton deposed that he dressed the carcase, and that the kidneys and tongue were in the shop at Kirkstall when the last witness called.—Mr. Harland here remarked that he could not dispute that the meat was unfit for human consumption.—Mr. Atkinson thereupon observed that the question appeared to be as to how far the defendant was responsible for the meat being put in such a place as would lead to the supposition that it was intended for sale.—Mr. Harland admitted not only that the meat was unsound, but that the carcase was dressed. He submitted, however, that defendant was away from home that day, and that when he left he had no idea that anything was wrong with the animal. When he returned he was surprised to find what had occurred, and was annoyed that Lupton had been so unwise as to dress the carcase. He had no idea that any portion of the animal would be taken to the shop. There was no doubt an unfortunate combination of circumstances which seemed to tell somewhat against the prudence and discretion of defendant, but he denied that there was any intention on his part to expose the meat for sale. Defendant had carried on business in Kirkstall for many years, and was not likely to willingly commit such an offence.—The Rev. N. Egerton Leigh, Vicar of Kirkstall, having spoken to defendant's good character, Mr. Atkinson said he fully appreciated that the case was a grave one so far as defendant was concerned, but it was also a grave one for the public. For the offence imprisonment could be inflicted without the option of a fine. He could not treat the case as one for a small penalty. Defendant would have to pay a fine of £15 for exposing the meat for sale, and £5 for preparing the carcase for sale.

THE CONSERVATION OF CRIMINALS.

THE following facts furnish food for reflection:—A remarkable evidence of hereditary tendency to crime is furnished by the family of a Chester local celebrity named John Ogden, who has just passed away. He made 130 appearances before the city justices, 86 being for drunkenness and 44 for assault. Ogden's father appeared 35 times, a sister 67, and another sister 29. Father and son and two sisters presented themselves altogether 347 times. The Chief Constable of Chester estimates that what with expenses of prosecution, prison, and poor-law maintenance the Ogden family cost Chester £2,000.

On September 24 the death occurred, at his house in Old Ford-road, Bow, of Joseph Wailey, at the age of eighty-three, after a short illness from pneumonia. Born at Southampton of poor parents in 1813, Wailey had to seek his own way in the world at a very early age, and unfortunately chose the wrong path with such determination that at the age of about ten he was beyond the control of his parents. At that time his father was in the Navy, and it was decided to train the lad for the same occupation, but he had become possessed of such an extraordinary habit of pocket-picking and thieving that before he was twelve he could have given a few hints to "Fagin." After repeated spells of imprisonment, during which his mother died of grief and his father was drowned at sea, he joined a notorious gang of smugglers, whose work proved so profitable that Wailey withdrew with his share, which amounted to nearly £500. He was then at Plymouth, and decided to come to London, but on the way was robbed of every penny of his money by highwaymen, one of whom he maimed for life in the struggle. He succeeded in reaching London, and then began operations at his old game with such success that in less than six months he had regained his loss, and then founded the celebrated gang of night robbers in London known as the "Thorns." He had by this time used almost every alias he could think of, and as the police arrested several members of the gang, Wailey escaped by a back window during a police raid on the premises in the Minories, and smuggled himself down the river to Gravesend in the middle of the night by holding a pistol at the bargeman's head. He next turned his hand to forgery and blackmail, and subsequently went to the States, where he became a notorious horse-thief. He continued his remarkable career until a few years ago, when he was one Sunday listening to an open-air meeting in Victoria Park, to which the well-known black preacher, Celestine Edwards, was speaking, and the preacher's words had such an effect that Wailey was converted, and ever since was a noted speaker in Victoria Park. On one occasion he stated that his conversion was brought about whilst standing in the crowd picking pockets, and had he saved in past years his ill-gotten gains he could have been worth at least £10,000. He committed bigamy seven times, but after his conversion was never able to trace any of the women he had wronged. According to his own reckoning, he had spent fully forty years in prison.

IMPORTANT WARRANTY CASE AT STALYBRIDGE.

AT the Stalybridge Police Court last week, judgment was delivered in the case of the Police v. the Grange Park Company. Mr. John Miller, Town Clerk, who prosecuted on behalf of the police, was in attendance, along with Mr. Beattie, from the offices of Messrs. Cobbett, Wheeler, and Cobbett, who defended the company.—The Mayor said the first question the bench desired to ask was could the defendants produce the warranty in regard to Wilson's milk.—Mr. Beattie: Yes. I believe they were in possession of it.—The Mayor: Can you produce it this morning?—Mr. Beattie: Yes, but the manager of the Ashton Dairy has

not come yet.—The Mayor intimated that the magistrates would wait until the conclusion of the other business.—Subsequently the warranty was produced, and Mr. Miller observed that he thought it would be better if the warranties were proved.—Mr. Beattie called Harry Morris, who said the warranties were the same as those received on the Monday night at the railway station. The milk was delivered to the public the following morning.—Mr. Miller: When did you first commence to do business with Mr. Wilson?—Witness: I cannot say off-hand, sir.—Can you say about?—Eighteen months at least.—Does Mr. Wilson ever write to you? Yes.—When did you last receive a letter from him? Ten days ago.—You have not got one of them with you? No.—Witness further said that although he had never seen Mr. Wilson write, he presumed that, as the letters were signed by him, they were written by him.—A witness named Bowsie came forward and identified the signature on the warranties as being those of Mr. Wilson. The milk on the notes was described as "pure milk."—The Mayor, in delivering judgment, said the bench had had the case under their consideration since the last hearing, and that morning they had had further evidence with regard to the warranties. He must draw Mr. Beattie's attention to the fact that inasmuch as the defence did not rely upon these warranties, they would be mulcted in the costs. The magistrates were satisfied from the evidence that the milk was sold as they received it, but they were not satisfied with the way in which these transactions were carried on—a person should not, in the opinion of the Bench, be exonerated if he supplied the milk, and the other person be proceeded against. It was possible that there might be collusion between two parties to do this and not be detected by the Inspector. His Worship thought the Home Secretary's attention should be called to such matters as these; the law was, in Alderman Tinker's opinion, indefinite on the point, and wanted amending. The magistrates had decided that defendants should pay five guineas, the solicitor's fee, and 11s. 6d. court costs.—Mr. Beattie: I take it that the summons is dismissed on payment of these costs.—Mr. Whitehead (magistrates' clerk): Yes, certified costs.—Mr. Miller, on behalf of the Chief Constable, said Mr. Chadwick was bound to institute these proceedings, because, on receipt of the certificate, he could not do any other than proceed in the interests of the public.—Mr. Beattie: I think it was a proper case for investigation.

THE WATER-AT-SPIRITS'-PRICE GAME.

At Shire Hall, Nottingham, Anthony Fitzpatrick, landlord of the Three Tuns, Greasley, was summoned for selling adulterated spirits on July 16th. Mr. W. E. Botterill appeared for the prosecution, and Mr. E. Williams for the defence. The case had been before the Court on a previous occasion, and was adjourned. Colonel Story, inspector of weights and measures under the County Council, gave evidence, and stated that the sample of gin which he bought at the house of defendant was afterwards found to have 15 parts of added water, and the sample of whisky had seven added parts of water. Corroborative evidence as to the circumstances under which the spirits were purchased was given by Henry Clark, assistant under Colonel Story. Mr. Williams contended that the section of the Act did not apply in this case, and that the prosecution had failed to show that the sale was to the prejudice of the purchaser, although there was no printed notice that the spirits were adulterated with water. He called the defendant's wife, who stated that the whisky which the inspector asked for had only been partially blended by her husband, and she told the inspector that it was not saleable, but he insisted upon having it. Samuel Walker, of

Ilkeston, brewer's traveller, who was present when the purchase was made, also gave evidence. Defendant was called, and stated that he usually left a quantity of spirits in bottles for his wife to serve customers with whilst he was blending other quantities of spirits, and he had done so on this occasion. The whisky which the inspector obtained from witness's wife was the whisky which was not intended, at that time, for sale. Mr. Francklin said the defendant appeared to bear a good character, but the Bench were of opinion that he had transgressed the law. There were, however, mitigating circumstances in the case, and defendant would only have to pay one guinea on each charge. Defendant was also ordered to pay one guinea, the costs of the adjournment.

At the South Shields Petty Sessions, on September 17th, Mary Ruddock, of Whitburn, was summoned under the Food and Drug Act, for selling whisky adulterated with 16 per cent. of added water. John W. Wilson gave evidence as to purchasing a shilling's worth of whisky, at the defendants' house, on August 8th. The spirit was supplied to witness by the defendant's son, and he told him that he had purchased it for the purpose of having it analysed.—Mr. T. D. Marshall, who defended, stated that the defendant's son had blended the whisky himself. He had made a mistake, as he had never blended whisky before. The Bench fined the defendant 10s. and costs.

DRUG ADULTERATION.

At Settle Petty Sessions J. W. Shepherd, chemist, Settle, was charged, under this Act, with selling liquorice powder not of the nature and quality demanded by the Act. Mr. T. Brayshaw appeared for the defence.—Inspector Randerson said he visited Mr. Shepherd's shop on Tuesday, July 23rd, and purchased three ounces of composition liquorice powder. He divided this in the usual way into three parts, one of which he sent for analysis, another part he left with Mr. Shepherd, and the third he kept himself. The analyst's report stated that the powder was deficient in sulphur. In answer to Mr. Brayshaw, witness said there was only half the quantity of sulphur. The quantity was one-eighth instead of one-quarter of an ounce. Out of six or seven articles bought on the day in question, this mixture only was defective. Mr. Wm. Walker was called and stated that the article in question was a mild laxative, and one-eighth of an ounce would not affect it as a medicine. Sulphur was not recognised in the "Pharmacopœia" of 1885; it was also one of the cheapest ingredients. The Bench inflicted a fine of 1s. and £1 9s. 3d. costs, the chairman remarking that the case was not serious.—John Hoare, grocer, Hellifield, was charged under the same Act with selling adulterated tincture of rhubarb. Mr. Randerson said he visited Mr. Hoare's shop on Tuesday, July 9th, and purchased three ounces of the mixture. The analyst's report stated that the mixture was deficient in alcohol, and that the same was nearly destitute of saffron. Mr. Brayshaw, who defended, said that technically an error had been admitted by his client. The goods had been bought so far back as 1893, from Messrs. Goodall, Backhouse and Co., and there was no doubt that the alcohol had evaporated since that time. Fined 1s. and costs £1 10s. 7d. In answer to a remark from the Bench, Mr. Randerson said the County Council would only be too glad to protect tradesmen if they would only get a warranty with the goods at the time of purchase.

DENMARK DISCONSOLATE.

THE rubbish about the superiority of Danish butter—thanks to us—is at last being perceived by the English purchasers, and if things go as they are going Mr. Harald Faber, chief Danish Free-advertisement Seeker, will find his occupation gone.

The Copenhagen *Smør Tidende*, of Friday, says:—

"The demand for butter upon the English markets is of a disappointing character, and, as a consequence, prices were very irregular. Sales of consigned goods generally gave heavy losses to shippers. Buyers are pursuing a hand-to-mouth policy, with the result that large lots of butter are left unsold. Irish creameries, and in fact all other kinds of butter, have declined in price, except Danish, of which prices are kept up, stimulated by the official quotations. German butters are left entirely for Continental consumption, prices in Hamburg being far too high to admit of any export taking place. Stray lots of Australian goods are arriving and selling readily in London. English importers, and in fact the whole trade, are grumbling at the stiff quotations maintained in Copenhagen, but it must be remembered that the committee have published often enough their determination to quote the actual price for strictly choicest quality of Danish butter, and the state of things at present is this, that imperfect and faulty butters are offered in abundance at all sorts of prices, but really tip-top butters are scarce and command the prices quoted. In Copenhagen the market opened quiet and orders arrived but sparingly, but at the close of the week the orders did arrive, at least most of them, and sufficiently to clear the choicest quality out. Hence the official quotations were maintained unaltered, but business is slow and dragging upon the whole, and the trade very little profitable."

We are glad to learn that Denmark's butter business is "slow," "dragging," and "unprofitable," and our hope is that it will become more so, and English and Colonial produce take the place of this foreign butter in our markets.

HOME PRODUCTS.

MR. WILSON FOX, of the Royal Commission on Agriculture, in the course of his report on the county of Cambridgeshire, says:—"In the Cambridge district, at Histon, Rampton, and Cottenham, there are many acres of fruit gardens and orchards, which have increased in recent years, and give a great deal of employment to men, women, and children at certain seasons. A ready market for fruit is provided by Messrs. Chivers' factory, at Histon, where jams, jellies, and sweets are made. This factory has been established about twenty-one years, and since its commencement has greatly increased in size, and is now well known throughout the country for the excellence of its manufactures. The firm not only grow fruit for their own use, but buy largely in the district, and the success of the factory has greatly stimulated the growth of fruit in the neighbourhood. They began business twenty-one years ago with three acres of land, and now have 500 acres. There are now about 3,000 acres of fruit within ten miles of the factory, 2,000 acres of which have been created since its establishment. With reference to the profits made at fruit-growing, it is stated that they have in the last few years been more satisfactory than those from ordinary farming, but that foreign competition in all kinds of fruit has recently become very severe, and is cutting down prices of home-grown fruit considerably. At Rampton, where the land is a rich red loam, apples, pears, plums, green-gages, currants, and strawberries are grown, and also gooseberries for champagne. A good deal of the best land had been thrown into market gardens, while a good deal of the bad had been allowed to go to rough grass. Besides sending fruit to the factory at Histon, a good deal is sent to Manchester, but the railway rates are said to be a great disadvantage in these days of severe foreign competition. Cambridgeshire is not a dairying county, it having been, and still is, a great corn-producing one. But a good deal of milk is sent to London in some parts, and farmers near towns, who have a monopoly of the milk business, probably make this branch pay more than others at the present

time. Two witnesses stated that they sent milk up to London some years ago, but when the price fell they dropped it, as they found that it did not pay them. A large farmer in the northern part of Cambridgeshire informed me that his dairy business was paying him best. He sends milk to London, but in connection with this business he sends hampers every week to private customers in London, of butter, eggs, fowls, etc. He has the advantage of having some very capable daughters, who look after this particular branch, and who make excellent butter. With reference to butter-making, Cambridgeshire, like other eastern counties, has not a high reputation, and a great deal of foreign butter is sold in towns in the county. The lack of uniformity is said to be the chief reason for this, though in a number of cases the quality is inferior, especially that made by the small farmers in the Fens. Good dairy-women are, moreover, scarce. I have in other reports alluded to the enormous imports of butter, cheese, eggs, hams, bacon, fowls, ducks, etc., which in 1894 amounted to the sum of about £36,000,000. In these days, when the agricultural industry is day by day becoming more and more depressed, the question is perhaps naturally asked, Cannot British farmers get hold of some of this huge sum? There are, as far as I have been able to ascertain, no peculiar advantages in favour of France or Denmark that have enabled them to eliminate the British farmers from their own butter markets. And the success of Danish and French farmers in English markets is encouraging nearly every other European Government to educate and train their agriculturists into the best methods of feeding stock, of making butter and packing it, in order that they too may enter into competition. And not only in Europe, but throughout Australia, America, and Canada every effort is being made to take advantage of the neglect of English agriculturists, who make no combined attempt to check the exodus of £36,000,000 which is going into the pockets of foreign farmers. Every witness I have interviewed has always stated that the reason why English butter is not bought by our merchants is not because a good sample cannot be obtained, but because a uniform quantity of good quality is not produced. No doubt in many districts the quality of butter has improved in recent years owing to technical education, provided by the County Council, but I understand that there is but little hope of successful competition with foreign butter makers until there is uniformity in quantity. As an example of this, the secretary of the Akenham Dairy Company, at Ipswich, Mr. J. A. Smith, informed me that some time ago he took up a sample of butter to a London merchant, who purchased from abroad. The sample was pronounced excellent, and Mr. Smith was asked if he could supply 700lb. daily of similar quality. Mr. Smith replied that it was out of his power to supply anything like the quantity asked for. Hence he lost the contract, and the merchant continued to get his supply from abroad. No doubt the system of creameries and butter factories in operation abroad, by which means uniformity of a large bulk has been obtained, is well known to the Royal Commission. I have ventured to allude to this subject in this, my last report, on the corn-growing counties, in the hope that, in the event of it being feasible or practical, to encourage or stimulate the dairying industries, as other governments have done, the matter may be duly considered by those who are the best qualified." This is the Assistant-Commissioner's conclusion:—"Agriculture in North Cambridgeshire is in a very critical position, but owing to the nature of the soil, which is easier to work and adaptable in certain districts to the growth of seeds, roots, vegetables, and market-garden produce, it has suffered less than the southern portion. The position of affairs in the greater part of South Cambridgeshire is most deplorable, and on the south-western side the effects of the depression upon the land are such that considerable tracts of it are, for all practical purposes, worthless."

SIR C. CAMERON AND SOMERSET HOUSE.

AT Killucan, on August 17, the charge preferred against Mr. Andrew Keefe by Mr. Peter Farrell, Inspector under the Food and Drugs Act, of offering for sale whisky which, according to the certificate of Sir Charles Cameron, county analyst, was 32 degrees under proof, came on for hearing. On that day month the case was adjourned so as to admit of the sample of whisky retained by the inspector being sent to Somerset House for the purpose of being analysed. The case attracted a good deal of interest, and the court was well filled. The offence was alleged to have been committed on the fair day in Killucan.

Mr. N. J. Downes, solicitor to the Mullingar Sanitary Authority, who have appointed Mr. Farrell as inspector, conducted the case for the prosecution.

At the opening of the case, Mr. Downes stated that the analysts at Somerset House had given a certificate that the whisky was not only pure but that it was very good. In these circumstances the case should be dismissed. He wrote to Sir Charles Cameron for an explanation as to why there was such an extraordinary difference between his analysis and that of Somerset House. The only explanation which he could give was that after making inquiries he found that he had five bottles, and that he must have mixed one with the other.

Chairman—That is a very lame explanation.

Mr. Downes agreed with the remark of the chairman.

Mr. Newburn, C.P.S., read the certificate from Somerset House, from which it appeared that on the sample of whisky, which was forwarded, being tested, it was found to be of a strength of twelve and two-tenths degrees under proof, which is considerably within the limit of strength allowed by the law.

Mr. Downes remarked that there was an extraordinary difference between the two certificates.

Mr. Keefe appealed to the court for his costs, and stated that he had to pay two guineas to Mr. Warren, of Dublin, for analysing his sample, and he had also to employ Mr. P. J. Nooney, solicitor, to defend the case.

The Bench, however, were only empowered under the Act of Parliament to grant £1 costs, and directed that the sanitary authority would refund to Mr. Newburn the sum of 10s. 6d., which he paid for having the retained sample analysed.

The case was dismissed on the merits.

FILLED CHEESE.

AT Prescot Petty Sessions, James Marshall, grocer, Eccleston-street, Prescot, was charged with selling adulterated butter and cheese. Mr. Cornett appeared for the prosecution, which was undertaken by the Lancashire County Council; and Mr. Riley, St. Helens, represented the defendant. The case for the prosecution was that on the 14th inst., Mr. Parkinson, inspector on behalf of the Royal Agricultural Society of Lancashire and the County Council, visited defendant's shop and asked for a pound of cheese at 6d. per pound. He got a piece weighing slightly over one pound, for which he paid 7½d. He also purchased three-quarters of a pound of butter at 10d. a pound, for which he paid 7½d. He told the defendant the articles were purchased for analysis. The proceedings were taken under section 6 of the Sale of Food and Drugs Act, 1875. Portions of the articles were left with the defendant, and samples were forwarded to the deputy public analyst, Mr. W. Collingwood Watson, who certified that it was his opinion that the sample of cheese contained upwards of 22 per cent. of lard, and that the butter contained 10 per cent. of water, and upwards of 60 per cent. of fats other than butter. The article thus contained only 3-10 of its substance butter. The County Council looked upon the cases as of a rather serious character. They had found that with the exception of the best class of cheese a fraudu-

lent and specious article is passed off on the public, this acting very prejudicially on the dairying industry in Lancashire and Cheshire. Mr. Parkinson, inspector, said the cheese was what was known as "filled cheese." He purchased it as pure cheese. A substance known as "Whangby" was sometimes sold as cheese, which contained no cheese at all. For the defence it was argued that the lard was not a deleterious addition, and that the butter was not labelled as such, but was ticketed "Cream of the Valley." Defendant sold the article under the belief that it was a *bonâ-fide* article, remarking that it was "Hamburg" butter. The Bench inflicted a fine of 40s. and costs in each case, amounting in all to £8 15s. 10d. A sum of 10s. 6d. was also allowed for the inspector.

WORCESTERSHIRE COUNTY COUNCIL AND THE BEER SWINDLE.

SIR DOUGLAS GALTON moved the adoption of the report, which said that:—

"The Local Government Board considered it to be necessary that an average of at least one sample of food and drugs for analysis to every 1,000 persons should be taken annually in every district; and the committee were strongly of opinion that a further number of samples should be submitted for analysis."

Mr. Chance seconded, remarking with regard to the samples of foods taken for the detection of adulteration, that hitherto samples had been taken by officers in full uniform, and there was a temptation on the part of dishonest traders to sell them samples unlike other goods they were selling. He announced that he had a number of samples taken and analysed by a distinguished analyst on his own authority; and the Council would be pleased with the gratifying results. They were purchased by a working man, and out of 72 samples 68 proved to be pure. The four impure samples were all of beer. (Laughter.) The bread, sugar, and tea samples were pure. They had relied on the police to take the samples, but it was found that the medical officer could take samples, and it would appear they had passed him over.

Mr. Bridges said he never knew what pure beer was. He understood that large brewers might use cabbage stalks or gooseberry skins or anything else they chose. (Laughter.) If Mr. Chance could tell them the beer was made of English malt and hops he would feel some satisfaction. (Laughter.) He complained that the county was being "by-law-ed" to death. (Laughter.) By-and-bye they would have everyone ordered to wear a cocked hat when he went abroad. (More laughter.)

Mr. Brinton did not think their duty ended by reporting that so many articles were found impure. He thought when a tradesman was detected two or three times they should give publicity to the offender's name. It was no use detecting adulteration if they did not punish it.

CAVAN AND UNSOUND MEAT.

THE town of Cavan is well supplied with officials under the various Acts of Parliament (sanitary and otherwise), but unless these Acts are carried into effect by the constabulary, who are under Imperial control, they almost lie a dead letter.

It is said that although there is a sanitary and sub-sanitary officer, who, of course, receive salaries, there has never yet been a prosecution brought by them for unsound food, although the people have often complained of unsound meat, fish, and fruit on sale. It is a mark of individualism, therefore, that on Sept. 9 Mary Mahony, of Ballinagh, brought some beef to sell on Cavan-street, and the police having heard something as to its condition, went to the stall and saw it, and then brought Dr. Malcomson, the sanitary officer, to see it, who declared part of it (about 20lbs.) to be unfit for use. Sergeant Denis Ring then seized it under direction of a magistrate, and brought it and the seller

before Mr. J. Fegan, who ordered the meat to be destroyed, and told defendant he would fine her 5s., but as she pleaded to be dealt with leniently as it was her first offence, he reduced the fine to 6d. and 6d. costs, making 1s. for the offence. Of course, her trade will suffer somewhat after the exposure. The prosecution was brought, and the meat seized, under 14 and 15 Vic., chap. 92, sec. 7. It is not expected that this case will have a deterrent effect on butchers in the Cavan locality, as they will naturally expect to be "let down easy."

Food purists in Cavan might do worse than follow Voltaire's advice and send some of this class of meat occasionally as a present to their magistrates. It might be killing a few *encourager les autres*.

ADULTERATION PROSECUTIONS AT STRATFORD-ON-AVON.

At the Borough Police Court, on September 23rd, Frederick Ballance, grocer, of High-street, was summoned for selling butter adulterated with water to the extent of 20·7 per cent. The prosecution was instituted by Mr. F. G. Bennett, inspector for the County Council, under the Food and Drugs Act, who purchased the butter on August 28th, and forwarded a sample to Dr. Bostock Hill, the county analyst, who certified it to contain the excess of water specified. For the defence Mr. Stubbins (barrister) contended that the Act prescribed no standard as to the maximum of water to be in butter, while it had been over and over again proved that quality of butter varied according to circumstances. The Bench eventually dismissed the case.—Joseph W. Tustin, of the Plymouth Arms, Wood-street, was charged with selling whisky adulterated with water to the extent of 7 per cent. over the degrees allowed by the Act. Mr. Bennett again prosecuted, and handed in the analysis of Dr. Bostock Hill. For the defence Mr. Stanley C. Warden urged that the defendant had acted in ignorance, having relied upon the information given in a handbook supplied for the use of the "trade." As a proof that defendant had been misled, Mr. Warden handed in a similar book by the same author and publisher, which had been sent in by the purveyors of the spirits, and in which there was a difference of one pint of water per gallon compared with the information given in the book the defendant had used. While acknowledging that the defendant had been misled, the Bench ruled that an offence had been committed, and imposed a fine of £1, with 13s. 6d. costs.

BATLEY'S INFANT SLAUGHTER.

EVERY TOWN where the mill exists, and the mother must leave her babe to "mind her two sides," or "callifudge" for a "good warp," or the like, must of necessity have a high infant mortality. Often the excessive death rate is caused by faulty nutrition, by the buying of swindling condensed milks or food in place of the genuine articles produced by Nestlé, or the Anglo-Swiss Condensed Milk Co.

It is always a horrible fact that the illegitimate death rate is very much higher than that of the legitimates, which suggests very disquieting suspicions. Beset on every side by dangers, it behoves those who do not wish us to become as the French—a decaying nation—to look to the health of our young. Batley is just now confronted with the problem of excessive infant mortality. Years ago, when we had a practical acquaintance with the district, signs of lead poisoning were evident. The water supply through lead pipes has had just about sufficient lease of life to have undermined the health of one generation, and to manifest its effects in the infant population. The Batley City Fathers have ordered an enquiry into the excessive rate of infant mortality. It would be of value, not only to Batley but to neighbouring places, to know how much is due to lead poisoning by the water supply.

LONDON RATES.

THE POOR rates of some of the London parishes are steadily rising. The Lambeth Guardians' call for the ensuing half-year amounts to £114,000, or £2,500 more than for the past half-year. In Camberwell the call on the overseers for poor-law purposes alone is £53,643, or an increase of £4,049 on the corresponding period of last year. Under the head of out relief alone there is an increase of £2,722, and it was explained to the guardians that 800 more people were receiving relief than last year. The precepts of other authorities are expected to show an increase of £2,530. The net call is £86,241, the difference being due to the receipts from outside for the maintenance of lunatics and from the Metropolitan Poor Fund. The estimate for the ensuing quarter presented by the overseers of Bow and adopted by the Bow Vestry show a rate of 2s. 1d. in the pound. £12,844, or 1s. 4d. in the pound, is required for poor rate.

THE GINGER SWINDLE AT DURHAM.

A CHARGE of selling adulterated ground ginger, preferred by Mr. B. Scott Elder, chief inspector for Durham County, against John Alfred Lumley, grocer, was heard.—Mr. Elder proved purchasing three ounces of ginger from defendant's wife. On the ginger being analysed by Mr. Stock, analyst to the Durham County Council, it was found to contain 50 per cent. of exhausted ginger.—Defendant said he sold the ginger as he bought it from the wholesale firm with whom he dealt, and paid a good price. The ginger was in a tin, and labelled "guaranteed."—The bench, in fining defendant 1s. and costs, said they believed he had been misled.

ST. SAVIOUR'S BOARD OF WORKS AND MARGARINE FINES.

THE clerk reported that a recent decision in the Court of Queen's Bench declared that when fines were paid under the Margarine Act the prosecuting sanitary authority was entitled to a portion of the fines. Acting upon this decision, he had written to the clerk of the Southwark police-court for a share of the fines which had been recovered in consequence of prosecutions by the Board during the last eight years.

The chairman explained that hitherto the whole of the money paid as fines had been kept by the Metropolitan Police Receiver. The clerk deserved great credit for discovering what was due to the Board, and so promptly endeavouring to recover it. (Hear, hear.)

BUT SIR WILLIAM V. HARCOURT SAYS THERE ARE NO BEER SWINDLES.

At Southwark Police-court, George Turney, beer-house keeper, 15, Canvey-street, Lambeth, was fined £5 for diluting two barrels of beer with water to the extent of 4½ and five gallons respectively.—Mr. Slade also fined Edward Herbert Blunt, of the Noah's Ark, Blackfriars-road, £20 for a similar offence. Two gallons of water per barrel was the extent of the addition to the beer in this case.

NASTY ON HANSON, M.P.

"ADULTERATION.

"TO THE EDITOR OF THE *Times*.

"Sir,—Were all mixed articles obliged to be described under the head of the inferior mixture and a simple mode of detection provided, adulteration would be pretty well abolished. For instance, French coffee would have to be described as French chicory improved.

"Yours truly,

"London, Sept. 17.

"A CITIZEN."

ANSWERS TO CORRESPONDENTS.

LOUIS COLLINS.—The pamphlet has been read—and its perusal produced an itching about the editorial boot-toe that would have caused you pain had the brawny disc of your dorsal rotundity been within kickable distance. You might find a sympathiser in W. T. Stead

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Food and Sanitation.

SATURDAY, OCTOBER 5TH, 1895.

SOMERSET HOUSE AND THE MILK ADULTERATION SCANDAL.

THE latest exhibition of the methods adopted by the Government chemists at Somerset House to encourage milk thievery and to aid in defrauding the public, was given on September 26, at the Harlesden Court House.

The Middlesex Public Analyst, Mr. E. J. Bevan, had condemned a sample of milk, which had the following composition: Fat, 2.70 per cent.; solids not fat, 8.26; ash, containing borax, 0.68g.

This milk was obviously both watered and skimmed, but in view of a possible reference to Somerset House, where allowance for decomposition is still rampant, although it has been shown conclusively that an allowance for decomposition is a fraud, Mr. Bevan wisely did not certify to the presence of added water, confining himself to the cream abstraction alone. He certified to the abstraction of 10 per cent. of the cream.

When the case came for hearing, the defendant acknowledged the presence of added water, by handing in a certificate of an analyst employed by him, who stated that the milk contained 8 per cent. of added water. At the same time defendant denied the abstraction of cream.

The fact that the milk was an adulterated article, therefore, was not denied, but a doubt existing as to the precise nature of the adulteration, the duplicate sample was sent to Somerset House, whose certificate was received stating that the sample contained 2.69 per cent. of fat and that "the milk does not afford conclusive evidence that fat has been abstracted." The repeated and emphatic declarations of Mr. Bannister, the same Bannister who had signed the certificate quoted above, before the late Parliamentary Committee on Food Products Adulteration, as to the limits for fat and solids not fat adopted at Somerset House being on record, the Middlesex County Council thought well to enforce the attendance of Mr. Bannister at the adjourned hearing of the case.

Let us quote, to make the matter plain to the ordinary understanding, the Bannisterian declarations at the House of Commons Committee:—He was asked in Question 805: I think you said that you adopted 2.70 per cent of fat?—Answer: 2.75 is the limit.

819 Answer: The limit of 8.5 and 2.75 is known.
 857 Answer: In 100 parts of milk there would be 8.5 per cent. of solids not fat and 2.75 per cent of fat and 88.75 of water.

1540 Answer: We make it 8.5 for solids not fat and 2.75 for fat.

1542 Answer: I am rather opposed to fixing a standard for milk, because we get some milks that are very rich in solids not fat and fat, and there is no doubt that persons who sell milk to the public, water those milks down to something that they think will pass the standard of 8.5 and 2.75.

1665 Answer: We have altered the limit for fat from 2.5 to 2.75.

1728 Answer: We have altered the limit from 2.5 to 2.75.

1730 Question: What is it now?

Answer: 2.75 per cent. of fat.

Could anything be plainer than these repeated declarations? Formerly the nominal limit for fat taken at Somerset House was 2.5 per cent. Lately it has been raised to 2.75 per cent. We will not here debate whether the limit of 2.75 is a fair and reasonable one; our conviction that it is an absurdly low one is too well known. It is an arbitrary limit in any case. The great majority of milks contain 4 per cent. of fat, but as milk varies in richness from almost no fat at all to 10 or even 15 per cent. of fat, a lowest line must be drawn somewhere, whether the analyst may like it or not. It cannot be drawn at the lowest percentage of fat ever found in milk, because with bad feeding, incomplete milking and bad selection of milch-cows, milk could be obtained with little or no fat at all, and the public, as purchasers, are obviously entitled to get milk of fair quality and richness. Mr. Bannister has, for his own purposes, drawn the line at 2.75, below which milk should not be sold as genuine.

When, after his emphatic declarations before the Parliamentary Committee, he analyses a sample of milk with fat falling below his own miserably low limit, does he condemn such sample? No; he eats his own words, retracts everything with which he bamboozled the

committee of the House of Commons, and gives renewed assurances to milk thieves that they may rob the public without risk of punishment.

To say, as he did, that the deficiency of fat, judged by the limit of 2.75 is insignificant, is ridiculous, because the proper percentage of fat in milk is not 2.75 but 4 per cent., and the 2.75 per cent. limit is taken not as the average of fat in fair milk, but as a lowest line. The amount of cream abstracted should obviously not be reckoned from 2.75 but from 4 per cent. If 2.69 per cent. of fat be passed, why not 2.65 or 2.55, or any other lower percentage whatever?

The whole position of this person is, therefore, ignorant and unscientific, and his certificate an intentionally misleading one. Granting, for a moment, that Mr. Bannister was scrupulously anxious not to injure a possibly honest dealer, and was of opinion that the difference between 2.75 and 2.69 was too fine to enable him with good conscience to condemn the sample, surely, ordinary honesty should have prompted him to state in his certificate, given, be it borne in mind, not in order to appear as an adulterator's advocate, but as an expert appearing on behalf of the Crown, that although he was not absolutely satisfied that abstraction had taken place, the immense preponderance of probability was, that the sample had been tampered with. No analysis of milk, as even Mr. Bannister may know, affords conclusive evidence of genuineness or adulteration. The collective experience of observers—we will, by courtesy, include Mr. Bannister among them—has shown that genuine milk contains, in by far the majority of cases, far upward of 3 per cent. of fat, exceptionally rarely falling below 3 per cent., and phenomenally rarely under 2.75 per cent. The inference, when a sample with below 2.75 per cent. of fat is met with, is that the sample has been skimmed. Whatever slight doubt there may be, even at that figure, might well and honestly be expressed in a certificate, and the public analyst would be the first person to endorse it. But to say that the analysis does not afford conclusive evidence that fat has been abstracted is a wretched, shuffling way of expressing the facts of the case, calculated to mislead the Bench and to injure the public. It does no good to the cowkeeper, it injures the honest portion of milk-vendors, who, after all, are the vast majority of their division of trade. It is a deliberate stab in the back of the officers charged with carrying out an important, though grossly faulty, Act of Parliament. It gives Mr. R. Bannister the cheap honour, in the eyes of persons who do not know him, of being a person of knowledge superior to the public analyst, and of transcendent fairness to the trader.

But the scandal does not end here. Asked, in the witness-box, why he did not make any reference to the other constituents of the sample of milk—the presence of added water being admitted by the defendant—he said, "I have not enquired into the presence of water in any way whatever." Yet, a few minutes afterwards, when asked for the other figures of his analysis, he showed that he had made three determinations of the percentage of solids not fat, which he found to be 8.3, 8.32 and 8.37 per cent. respectively. This is very nearly the figure found by Mr. Bevan, who made the solids not fat to be 8.26. How the percentage of solids not fat can go up, by some weeks of keeping in hot weather, from 8.26 to 8.37, is an interesting question. But after finding 8.3 per cent. of solids not fat, Mr. Bannister claps on an allowance of 0.24 per cent. for loss by keeping, which loss the analysis shows the sample had never undergone, and brings the percentage of solids not fat to 8.56, that of genuine milk. Thus, with the defendant's own admission, that the milk sold by him was watered, Mr. Bannister acquits him triumphantly of the admitted offence. How that milkman must have chuckled when he heard Mr. Bannister, how industriously he will act up to the Somerset House lesson, and how gladly dis-

honest milk-dealers—not in Harlesden only, but all over the country—will receive the message of great joy.

But the matter has a more serious aspect still. Mr. Bannister declares that, as the charge against the vendor was that of fat-abstraction, it was no business of his to look for any other form of adulteration. How does that square with the words of Section 22 of the Sale of Food and Drugs Act, which says that "the chemical officers at Somerset House shall make the analysis and give a certificate of the result of the analysis." Nothing whatever is there said of any special question which they can pick out. They shall be the guides of the Court, see that no innocent person is wrongly accused, but also that no guilty person shall escape. Fancy, if in a poisoning case, in which the presence of arsenic were alleged, the case were referred to Somerset House, where no arsenic, but strychnia were found. According to Mr. Bannister's moral position no mention should be made of the strychnia at all and the certificate should run, "We certify that the substance analysed is free from arsenic." Let us take a more probable case, still a hypothetical one, and one which we are sure could not possibly happen in reality. Suppose an analyst certified to a sample of lard as containing a quantity of cotton-seed oil, such sample being referred to Mr. Bannister, Mr. Bannister fails to find cotton-seed oil, but, on the other hand, discovers a similar oil, say sesam-oil, should he not honestly state to the court the result of his analysis, and should he not, in honesty bound, state, that though he was unable to affirm that cotton-seed oil was present, another very similar oil, namely sesam-oil, had been detected? Were he not to do so, would he not deliberately mislead the Court and aid and abet in a miscarriage of justice?

Should the Parliamentary Committee on Food Products Adulteration be again re-appointed (Mr. Bannister will doubtless do his best to prevent it), attention will surely be called to the fact that Mr. Bannister's statements as to milk-limits were designed solely for the purpose of misleading the Committee, and that Mr. Bannister has one set of limits for the Committee and an entirely different set of limits for the Courts.

It is this kind of Government chemist's testimony that has scuttled the Food and Drugs Acts, and been the strongest of all inducements to knavery, whilst it has bewildered magistrates into giving decisions encouraging fraud everywhere in the kingdom. We cite another instance at St. Augustine's Petty Sessions last week. A sample of milk analysed by Dr. Matthew A. Adams was found to contain total solids 10.67 and fat 2.09, and was certified to have been deprived of 25 per cent. of its cream. A significant fact, which came out in the evidence for the defence, was that the milk was a portion of the mixed product of three herds of 8, 14 and 4—*i.e.*, 26 cows in all. This being the case, it ought to have contained about 4 per cent. of fat.

A local analyst, called for the defence, stated that he had analysed a portion of the sample of milk, and his estimate was that 21 per cent. of fat had been abstracted, as he found 2.37 per cent. of fat; and gave the figure 3 per cent. as his minimum for pure milk. Doubtless, therefore, the local analyst must have told defendant that the milk was adulterated, but the solicitor for the defence contrived to so befog the magistrates with rubbish about Somerset House limits, etc., that it was actually dismissed. Our great daily newspapers are continually lamenting milk adulteration and the damage it does to the health of infants. We have pointed out here fairly and at length the real reason why the fraud is so general, and why swindlers can laugh at the law. The Press is all powerful, and it could not put its power to a better use than in exposing the intolerable scandal we have here laid bare, and demanding that the incompetent Government chemists, who are the cause of this state of things, should be divested of the powers they have so grossly abused. So long as Somerset House chemists act as referees under the Adulteration Acts the hands

of all concerned with suppressing adulteration are tied, and the Acts stultified. It is shameful enough that Dr. Adams, whose discoveries in milk analysis have educated analysts in every civilised country in the world, should have his opinion, as was that of Mr. Bevan regarded as of no account when compared with that of a Government chemist—albeit that Government official is not known scientifically outside the Strand—but when there is added the fact that Government incompetence causes the public to pay millions of pounds per year for separated milk and for water sold to them as pure milk, the scandal is one that vitally interests every person in the kingdom.

IS LONDON WATER UNFIT FOR DRINKING ?

At the present moment the London Water companies are the subjects of much public discussion, but their critics, strangely enough, appear to think far more of a constant and adequate supply than of the quality of the water itself. The London County Council's scheme may or may not save London ratepayers twenty or more millions of money, but if it supplied water above suspicion, it would be distinctly to the public advantage. The purity of our present water supply is taken upon trust, because there is supposed to be more or less of a Government control, corroborated by the reports of the Water Companies' analysts. If there be one sham that has been discredited more than any other, it is that of the Government analysts; and, for our part, we would hesitate to hang a dog on the unsupported testimony of any one of them, for reasons which the leader upon our front page affords conclusive proof. There is testimony of a kind, it is true, supplied by the Water Companies themselves. But the Water Companies have given the public many object lessons of late as to the value of their assurances. Ratepayers have been forced to spend heavy sums because the Water Companies pursued a deliberate policy of burking obligations as to the laying of mains at sufficient depths and the like; and looking at the past conduct of the companies in the most charitable light, it cannot be said that it would be other than dangerous to believe that London water was fit for drinking purposes because they assert it is. There is grave reason to doubt the purity of London water. *We have published from time to time reports by the most expert public analysts—not employed by Government departments or the Water Companies—who have made independent examinations of London water for London Vestries. These independent reports flatly contradict those of some of the companies as to the purity of the water supplied.* We bring this important question again forward in the hope that it will not be lost sight of. Its gravity at this juncture is amply attested by the following excerpt from a report recently made to his vestry by Mr. C. E. Cassal, public analyst for St. George's, Hanover-square, Kensington and Battersea. Mr. Cassal says:—

"I feel bound to call attention here to an extraordinary statement which has been made by the two analysts retained by the Water Companies (Messrs. W. Crookes and James Dewar). These gentlemen issue a monthly report, which is quoted in full in the Metropolis Water Examiner's Monthly Report. It would appear from the reports for July and August last that for 'some considerable time' *the samples of water presumed to have been drawn for analysis from the mains of the Chelsea Company were in reality taken from a main supplied by the New River Company*, and the results of analyses recorded as relating to the Chelsea Company in reports covering a period, as it seems, of *at least several months*, must be regarded simply as the results of duplicate analyses of the water supplied by the New River Company. The Companies' Analysts remark that 'this erroneous labelling is most unfortunate,' and from their point of view it unquestionably is so. Inasmuch as the results of analyses of the waters

supplied by these two companies generally differ very considerably, the New River water being, as a rule, much purer, it is somewhat surprising that the unfortunate mistake was not discovered before, more especially as it is stated to be owing to an "unexpected coincidence" between the results of analysis of the two waters, and the 'repetition of this (unexpected) coincidence for several months,' that the conviction that there was something wrong was ultimately 'forced upon' the Companies' Analysts. It will be seen that the matter is one of considerable interest, especially to those who, at different times, have had occasion to disagree with the conclusions of the Companies' Analysts.

"I have only to add that, as a responsible public officer, a public analyst is not concerned to magnify or to minimise anything. It is not the business of a public analyst to make out a case either for or against the water company whose water is officially submitted to him for examination. It is his duty to deal with facts, and the fact remains that the sample of water taken from the Davies-street standpipe on November 15 last was polluted and unfit for drinking purposes. No scientific chemist who impartially considers the analytical results, and is able and willing to give an opinion upon them, can arrive at any other conclusion." This is a serious statement, made by a responsible public official of recognised scientific standing and capacity. We see that the daily newspapers are devoting articles to the scheme to bring an entirely fresh supply of water to London from the Welsh mountains, as an alternative one to paying forty or more millions of money for the existing supply. The facts given by Mr. Cassal suggest grave doubts as to the wisdom of considering the present supply at all. If it has, in addition to its many existing disadvantages, also that of being impure, then, from the point of public health, the water would be dear at a gift, and this aspect of the question should certainly receive the fullest investigation.

THE WATER-AT-SPIRIT-PRICE-TRAFFIC AND RIDICULOUS FINES.

WATER, even if it be that of the London companies, is the least harmful of the many adulterations practiced in beer and spirits, and it is the most profitable. Unfortunately for the public, it is the only one for which the publican can be prosecuted, because our Government chemists have debauched beer into swipes, and spirits into maddening rubbish, by allowing brewers and distillers to use any trash they choose for their beverages in place of malt, and the law permits liquor vendors to sell as much water as they please at spirit rates, provided they display a notice that "All spirits sold here are diluted." Local officials, however, do all they can to stop the traffic, but with scant success. The past week produced another batch of cases.

At the Retford Borough Court, on September 30, Mrs. Tallents, landlady of the Newcastle Arms, was summoned by Inspector Garforth, for selling gin 4·7 per cent. below the strength permitted by the Act, namely 35 under proof.—The Bench dismissed the case upon payment of costs.

At Manchester, on September 24th, John Robert Warren, Wellington Hotel, Bury-new-road, Cheetham, was fined 20s. and costs for selling rum 35 per cent. under proof, or 10 per cent. more than is allowed by law. Mr. Rook prosecuted for the Corporation.

At Leicester, on September 25th, George Willcocks, licensed victualler, Syston, was summoned for selling adulterated gin, Superintendent Ormiston proved that it was 51 degrees under proof, or 16 degrees below the legal standard.—It was contended for the defence that Mrs. Willcocks by mistake adulterated the gin with double the quantity of water she ought to have put in.—The magistrates imposed a fine of 40s., and 11s. 6d. costs. Robert Butler, licensed victualler, Birstall, was summoned for a similar offence. Superintendent

Ormiston proved that in this case the gin was $38\frac{1}{2}$ degrees under proof, or $3\frac{1}{2}$ degrees below the legal standard.—Defendant said he had had the gin in stock for a long time, and it had evaporated more than he thought. He had held the license eleven years, and this was the first complaint which had been made against him.—The magistrates accepted the defendant's explanation, and ordered him to pay the costs.

At Ashby-de-la-Zouch, on Sept. 28, John Brotherhood, licensed victualler, Netherseal, was charged with selling a pint of gin, adulterated 40 deg. underproof, on the 4th inst.—Defendant pleaded guilty.—Supt. Holloway said he purchased the gin through an agent for 2s. He was handed the gin by a boy at the door. He divided the liquor, and Dr. Bernard Dyer, the analyst, reported as to the quantity he sent for analysis. There was no notice posted up in the house as to the dilution of spirits.—Defendant, in answer to the Chairman, said what Mr. Holloway had stated was correct. There had been nothing against the house previously.—The Chairman: Have you any explanation to give as to how the gin was so much watered?—Defendant: Well, I laid it myself to putting water in it from the pump (Loud laughter). Further, he said that he received the gin in four-gallon bottles.—Fined 10s. 6d. and 10s. 6d. costs, or seven days, the license not to be endorsed.

At Bridgnorth Petty Sessions last week, John Rossiter, landlord of the Enmore Inn, Enmore, was summoned for selling whisky 32 deg. under proof.—He pleaded guilty, and Mr. W. T. Baker, watched the case on behalf of the owners of the house.—P.C. Rowe stated that on Friday, August 23, he went to the Enmore Inn, kept by the defendant, and purchased from Mrs. Rossiter a pint of whisky, for which he paid 2s. 8d. He told her that he had obtained it for the purpose of analysis and offered to divide it, which was done, the bottle being sealed down in her presence. He then handed it over to Supt. Vowles.—Defendant said he was very sorry it was done; it was through a mistake.—The Magistrate's Clerk (Mr. E. Trevor): What, putting too much water in?—Defendant: It was done by my wife, and I was away from home.—Mr. Baker said as representing the owners of the house it was right to say that when the spirit left their premises it was as it should be. It appeared that Mrs. Rossiter had been tenant of the house for ten years and there had been no complaint before. It was an innocent mistake, and he would like the Bench to allow her to come in the box and explain how the mistake arose.—The Chairman thought they could not do that as defendant had pleaded guilty. After consulting his colleagues, he told the defendant that the full penalty was £20. The public must be protected against adulteration, and they imposed a fine of £3 and costs.

At Nottingham on Sept. 28 Henry Clarke, licensed victualler, of Kimberley, was summoned for selling adulterated whisky.—Colonel Story stated that he went to defendant's house and purchased a sample of whisky. He told him for what purpose he had obtained the spirit, and in his presence he divided the sample into three parts, one of which he left with the defendant, another he sent to the analyst, and the third part he kept himself. The report of the public analyst on the sample submitted to him was to the effect that the whisky was adulterated with thirteen parts of added water beyond the limit allowed by statute.—Captain Holden remarked that it was a bad case.—Defendant, who said he was not aware that the whisky had been tampered with, was fined £3.

At Hanley last week, Mary Booth, landlady of the Eagle and Child Inn, Hanley, was summoned under the Food and Drugs Act for selling Irish whisky 45 degrees under proof on July 22.—Mr. Ashmall prosecuted.—Mr. Sam Salt, inspector under the Food and Drugs Act, proved sending a quantity of Irish whisky,

which had been purchased at the defendant's premises, to the public analyst, and the analyst's certificate, which he handed in, showed that the spirit had been diluted from 25 to 45 degrees under proof, by the addition of 26 per cent of water.—Defendant stated that she had a notice stuck up in her bar setting forth that all spirits were diluted.—Evidence was then called to prove that the defendant did not call the attention of the purchaser to the fact that the spirit was diluted.—A fine of 40s. and costs was imposed.

At Albrighton Petty Sessions, on Sept. 5, William Henry Pryce, landlord of the Grapes Inn, Bicton Heath, was charged with selling whisky $12\frac{1}{2}$ degrees below the proper standard.—Mr. F. W. Williams appeared for the defendant, who admitted the offence.—Police-sergeant Smith deposed that on the day in question, he went to the Grapes Inn and asked for a pint of whisky. He was served by Miss Pryce, and witness told her that he wanted it to take to Mr. Blunt, the County Analyst. The whisky was found to be $12\frac{1}{2}$ degrees below the proper standard.—In cross-examination, witness admitted that Miss Pryce told him that Mr. and Mrs. Pryce were ill in bed.—Mr. Williams explained that when the officer called, Mr. Pryce was laid up with a severe cold. Mrs. Pryce was also ill in bed, and Miss Pryce took charge of the house. The whisky, which had been "broken" by Mr. Pryce, ran out, and he explained as well as he could to his sister how to fill up the jar, but in doing it the mistake was made. It was not done wilfully or with design.—Mr. Sandford, one of the magistrates, said he lived not a great way from the house occupied by defendant, and he was quite aware that since Mr. Pryce had been there, the house had been well conducted, and much better than it was previously. But the present case was a serious one, and a fine of 30s. including costs would be imposed.—In reply to Mr. Williams, Mr. Sandford said the license would not be endorsed.

The above cases are fair samples of the penalties magistrates inflict for this offence. No person having a grain of common sense, could deceive himself into the belief that such penalties deter frauds so profitable as that of selling water at spirit price. The fines and costs could be recouped in a few days in many cases, whilst the inspector's visits are perhaps less than once in a year.

SPANISH ORANGES AND LEMONS.

THE varieties are numerous, at least in the names given them, though in quality, size, shape, and flavour there is but a slight difference between most of the varieties grown. The oranges known as "China Dulce" and the "China Agria" are practically the only ones exported to foreign countries, being shipped chiefly to France, England, and Germany, none having been shipped to the United States during the past year. Both of these varieties are nearly round and of different sizes. Three sizes are exported. Of the smallest size, 720 are put in a crate; of the next size larger, 420 to 500 are packed in the export crate; and of the largest size, about 300. These varieties, when ripe, have a delicious flavour, and are very juicy—the sweet of one is of a very palatable sweetness, while the slight acidity of the other is highly appreciated. They are called "China" because, according to the historical notice given, they were brought to the Continent of Europe from China.

The introduction of the orange into Europe from China dates back to the year 1333. It was first brought to some province of France. In 1421 it was taken to Pamplona, Spain. Slips or seeds were then taken to different parts of the country, and it is now cultivated in many places along the Mediterranean coast of Spain.

Another variety, called the "Cajel," is, in size, shape, quality, and flavour similar to the "China." This

variety, however, is consumed in Spain, as it will not keep for export.

There is another variety, called "Grano de Oro," which, it is said, was brought from the island of Malta to this place forty or fifty years ago. It is now grown in some of the towns in this province, not, however, very extensively: consequently, none of this variety is exported. It is not very juicy, and, by some, is pronounced sweet to insipidity, while others declare it delicious. Americans who have tasted this fruit declare it equal to the California orange, which, they say, bears the same name and is of the same class.

Another variety is known as the "Cana Dulce." This variety had its origin in Malaga, having been obtained by grafting with other varieties of oranges, and, some say, with sugar cane. At all events, it has a slight sugar cane flavour. It is much more juicy than the "Grano de Oro," with a much more palatable flavour, the sweetness not having the insipidity which characterises the "Grano de Oro." In shape and size it is about the same as the "Grano de Oro." The production is small, and is consumed in the country.

The quantity of oranges exported in 1894, of "China Dulce" and "China Agria" varieties—the only class exported—was 5,417,352 kilogrammes (11,939,804 pounds), valued at \$139,439.05.

LEMONS.

Arabic writers speak of the lemon tree in Andalusia during the latter part of Moorish rule in this country. The method of propagating the tree at first seems to have been to graft a slip upon the citron tree. The result of this grafting, from some cause, seems to have given lemons of two different shapes, the one elliptical, the other almost round. The former are called "Reales" (real lemons) and the latter "Castellanos." It is these two classes that are exported, the former being the most highly appreciated. Of the above classes there were exported in 1894, 5,454,120 kilogrammes (12,020,880 pounds), valued at \$172,931.52. Of this quantity, the United States took 41,766 boxes, valued at \$66,256. The inferior grade is shipped to the United States, the second grade to England and Germany, and the first grade to France and Holland. The old method of propagating the lemon tree by grafting it upon the citron has been abandoned because horticulturists have found that grafting on the "Naranja Agria," or tree of the acidulous orange, gives better results and produces a healthier and more juicy fruit. This is partly accounted for from the fact that the roots of the orange tree go deeper into the earth than the roots of the citron, and consequently are not affected so much by drought, and that the tree is freer from disease than the citron tree. The sweet lemon is not cultivated to any great extent, and those grown are consumed in the country.

When the lemons have attained their maximum growth, and while yet green, they are picked from the tree. After picking, they are piled up under the tree, remaining in the pile from twenty-four to forty-eight hours, for the purpose of seasoning sufficiently so that they may not become stained or spotted while being taken from the places where grown to Malaga, to be prepared for shipment. They are transported from the orchards in large two-wheeled carts, generally drawn by oxen. On arriving at Malaga, they are taken from the cart, placed in small piles upon the ground, near the warehouse of the shipper, and girls and women begin at once to wrap them in tissue paper for shipment, after the classification for the different foreign markets is made. The inferior quality, going to the United States, is placed at once by the wrapper into the boxes in which they are exported. She wraps and packs at the same time. The first quality, however, after being wrapped with more care, is placed by the wrapper in a basket, and the packing is done by another person. Three to five days usually elapse after picking the lemons from the tree before they are

wrapped and ready to be shipped, and not unfrequently they remain a day or two on the wharf before being placed on board. They may remain before being shipped as many as twenty-five to thirty days, provided they are kept dry.

They are brought to Malaga from surrounding towns at distances varying from six to thirty miles. When wrapped and packed they are actually green and perfectly green in colour. They ripen and become yellow during the time of their transportation. There is no artificial process employed here, as some suppose, for ripening and yellowing the lemon. This is not considered necessary by the shippers here. The time elapsing from the picking of the lemon for export until it reaches its destination is sufficient to ripen and yellow the lemon. Both ripeness and yellowing might be hastened, however, by placing the lemons in a pile when picked, covering the pile with cloth and allowing them to remain under the sun, thus covered, for three or four days. But they must not be exposed to the rain.

More attention is being given to the culture of lemons than formerly, in consequence of which the quality is improving, the number of trees is increasing, and the quantity obtained from each tree is increasing also.

THE REFUSAL-TO-SELL DODGE.

It is cheaper for a milk vendor who has been fined a few times to refuse to sell for analysis, as he can save thereby several pounds, and the knowledge of this is spreading, as we have shown on many occasions of late. At West Ham, on Sept. 25, William Woods, of 18, Burke-street, Canning Town, was summoned for exposing milk for sale at Morgan-street, Canning Town, and refusing to sell a sample to an inspector under the Food and Drugs (Adulteration) Acts.—Mr. Rendall Moore appeared for the defendant.—Charles Smith, one of the West Ham inspectors, said that on Sept. 3rd he saw the defendant with a milk cart, which had milk cans in it. He told him he was an inspector, and asked him for a pint of milk for the purpose of analysis. The defendant, however, said he had no milk, and when witness opened a can, and saw about a quart, he said he would have some of that. The defendant refused to sell, saying it was milk and water, and a third time he refused.—By Mr. Moore: The defendant did not say he could not warrant it as milk, but he could have it as it was if he wished.—For the defence, Mr. Moore said the defendant stated that he was willing to sell the milk, but was anxious to have it known by the inspector that he would not guarantee the milk, as he had had to buy it from another dealer. The inspector then refused to take it.—The defendant and his brother were called, and said this was all that transpired, and that there was no absolute refusal to serve.—In answer to Mr. Baggallay, defendant admitted that he had been summoned three times before, and Mr. Baggallay ordered him to pay £5 and costs.

NEW LAMPS FOR OLD.

MINERAL oil lamp accidents have been lamentably frequent during the past few days, and sensationalists can have little cause to complain as long as their appetite is fed at the rate of nine fatalities, in London only, per week.

The attitude of the Home Secretary has apparently drawn a little additional attention to the question of lamp accidents, and now that the London County Council have ascertained how high is the percentage of deaths and fires per year, it is interesting to note how active their inspectors under the Petroleum Act are in giving evidence before coroners' juries, and in assiduously employing arguments for the denunciation of the lamp as a foil to inquiries about the character of the oil. It would be much more to the point if, instead

of wasting their breath on vain words about the lamps, they were requested to put in a certificate stating the flash point and source of the oil, and instructed to attend the inquest and answer questions concerning the oil that might be put to them.

It is not very surprising that the London County Council inspectors should be instructed to follow their present line of action, but it is rather an eye-opener when the would-be immaculate *Lancet* takes up the lamp "bogey," and delivers itself of an *ultimatum* on how lamps ought and ought not to be made. Seemingly, this highly-respectable organ has not given the average cheap lamp a very close scrutiny, otherwise it would have noticed that almost all the qualities it deems so essential are to be found. The difficulty is to get people never to do what they ought not to with the lamps when they are burning dangerous oil.

The technical world, let alone the lay members, does not seem as yet to have actually solved in its own mind the question of whether it is the lamp or the oil that forms the element of danger. Before endeavouring to enlighten their brethren they might make this little mental effort. Let us have the best and safest form of lamp, by all means, but do not talk as if by so doing the danger attending the use of such lamps with low flash oil had been laid. The manufacture of small arms has been perfected and carried to such a pitch as to be almost a fine art, but when loaded they are as dangerous as ever they were, and so will "loaded" safety lamps be.—*The Chemical Trade Journal*.

MARGARINE IN MANCHESTER.

It has long been a complaint amongst members of the grocery trade in Manchester, that a large traffic in margarine, sold as butter, is carried on in the Corporation's Market, at Manchester, and numbers of our subscribers have at many times asked us if we can explain how it happens that this business is pursued with impunity. Surely the local officials could, by causing purchases to be made by women or girls, bring the offenders to book, as it is natural to suppose that the vendors of the spurious article know the inspector, and would take care, if he purchased, that he was supplied with a genuine article. The following case gives point to the many complaints received by us from Manchester subscribers:—At the City Police Court, on Sept. 25, Alice Ann Jackson, provision dealer, Rayson-street, Blackley, was fined 10s. and costs for selling margarine which had no label attached, and which was served in a wrapper unmarked.—Elizabeth Lees, provision dealer, Chapel-lane, Blackley, was charged with selling butter not of the quality demanded. On August 21, Inspector Holland visited the shop, and bought a pound of what was stated to be Irish lump butter. He paid butter price, but on the sample being analysed it was found to contain 50 per cent. of foreign fat. Mr. Holland stated that the defendant told him that she got the articles from Mr. Patrick Doherty, wholesale butter merchant, Shudehill Market, and paid 10½d. per pound for it.—Mr. Rook, who prosecuted for the Corporation, said he had no doubt that Mrs. Lees was under the impression that she had really bought genuine butter. It was the practice for dealers in the market to supply small shopkeepers with the class of goods under notice, and to pay the penalties in the event of any prosecution. The defendant was fined 21s. and costs.

In justice to honest dealers and the public, some steps should be taken to put down this practice.

ADULTERATION IN GLAMORGAN.

MR. CLARENCE A. SEYLER, B.Sc., F.I.C., the county analyst, states that amongst the samples he received were one of honey, two of bicarbonate of soda, one of carbonate of soda, two of tartaric acid, two of tincture of rhubarb, one of Epsom salts, one of milk of sulphur,

four of sweet spirits of nitre, three of paregoric elixir, one of senna leaves, two of cream of tartar, one of seidlitz powder, one of castor oil pills, one of magnesia, one of soda water, thirteen of pepper, five of ginger, one of mustard, and three of linseed meal. Of the drugs received the samples of sweet spirits of nitre called for some remark. Under this name two articles were sold, one, the true "spirit of nitrous ether," as defined by the B.P., and the other an inferior article of the London Pharmacopœia of 1851. Two of the samples were of the strength prescribed by the B.P., though one was of poor quality. The other was evidently intended for the weaker article of the London Pharmacopœia, but was made from spirit below even the strength required by this, and was, moreover, almost devoid of nitrous ether, the characteristic ingredient of sweet nitre. It would be well that medical practitioners and the public generally should know if they ask for "sweet spirits of nitre" they are liable to get an inferior article, but that if "spirits of nitrous ether" is demanded, they should be supplied with the B.P. article. The remaining samples of drugs were genuine and of good quality.

LEAD-POISONING CAUSED BY THE USE OF SUGAR OF LEAD IN REPAIRING A MILL-STONE.

IN November and December, 1893, several persons living at Lang-Gons, near Giessen, were attacked with lead poisoning. It was assumed that the illness was caused by lead enamel in the family cooking utensils. An examination showed that the utensils were free from lead. Attention was then directed to the food; and it was found that the flour came from a grist mill to which the farmers took their grain to be ground. Out of eleven samples of flour and four of bread made from it, seven of the former and three of the latter contained lead, the amount varying from .013 to .068 per cent. of the ash. It was a matter of interest to discover whether it existed in the metallic state or as a soluble salt.

Analysis of fragments of the mill-stone of the suspected mill, and of substances used to repair the same, showed that a greyish white substance was used to fill up gaps and cavities in the top stone, which, according to the miller's statement, was "alum." But analysis proved it to be acetate of lead. The question, how the miller came to use this poisonous substance, was submitted to a court trial, but the result was not stated.—*Boston Med. and Surg. Jour.*

POISONOUS CONTAMINATIONS OF VANILLA.

A NUMBER of serious cases of vanilla poisoning having occurred in a Cologne hotel, a local newspaper investigated the subject closely and publishes the following interesting information, which we borrow from the *Pharmaceutische Zeitung*:—

"The cholera-like intoxication of several individuals, caused by eating dishes containing vanilla, is only too familiar to science, but the precise cause is not known. The poison probably gains access to the vanilla in its tropical habitat. In order to impart a brilliant black lustre to the harvested fruits, they are covered with a fatty oil. In Colombia the oil of the seed of *Anacardium occidentale*, the so-called West Indian elephant lice, is used for this purpose. The shells of these seeds contain a very corrosive substance, cardol, with which the skin can be blistered as with a Spanish-fly plaster. Very minute quantities introduced into the human intestine produce a most violent choleraic irritation. A casual admixture of cardol with the oil may cause poisoning. On the island of Reunion the vanilla is caused to twine about the trunks of *Fatoupha curcas*, and is thus brought in touch with the corrosive milk-juice of this plant. Casualties from the consumption of vanilla

cannot be guarded against, and it is amazing that they have been so rare. The only protection is to eat no vanilla dish. Artificial vanillin is said not to cause intoxications of any sort."

IRON IN FOOD.

PROFESSOR BUNGE, in the course of a paper on iron as a medicine, read before the German Congress of Internal Medicine, has been ventilating some ideas which are as much matter of general science (and therefore extremely important) as they are details connected with the physician's domain. He is strong on the point that iron should reach our blood through the medium of our food rather than through the druggist's specialities. Iron, as everybody knows, is a food element absolutely essential for the proper constitution of the body. It is as rigidly demanded by the plant as by the animal; and it is from plants that Professor Bunge shows we should chiefly receive our iron supply. Spinach, he tells us, is richer in iron than the yolk of eggs, while the yolk contains more iron than beef. Then succeed apples, lentils, strawberries, white beans, peas, potatoes, and wheat, these substances being given in the order in which they stand as regards the plentifulness of their iron constituents. Cow's milk is poor in iron, but, as balancing this deficiency in the food of the young mammal, it is found that the blood of the youthful quadruped contains much more iron than the adult. Thus, in a young rabbit or guinea pig one hour old, four times as much iron was found than occurs in these animals two and a-half months old. These are interesting facts, showing that nature probably draws on the original store of iron in the young animal for its nutrition during its milk-fed period.

THE ONSLAUGHT UPON CARBOLIC ACID.

As though the cry to schedule carbolic acid as a poison and allow it only to be vended by the pharmacist were not enough towards crippling the trade in this article, we now have the *Daily Chronicle* publishing Dr. Breslauer's attack on its virtues as an antiseptic: "His researches have all the German completeness which renders it impossible to fully abstract them. But their general trend may be gathered from a few facts. Taking a particular bacillus (the long-named 'Staphylococcus pyogenes aureus'—so prone to cause blood poisoning)—he found that it survived for three days after being immersed in oil taking 5 per cent. of acid. In vaseline it lived one day, in fat four hours, and in other substances containing the same amount of antiseptic for as short a period as a few minutes. Lanolin was the substance which least affected the properties of carbolic acid. Hence, this is the oleaginous substance with which to mix it. Zinc ointment was found to be most unfavourable to the acid's antiseptic properties, while the influence of white precipitate was quite the contrary.

CHEAPER ALCOHOL.

M. MOISSAN, the noted French electrician, expects to revolutionise the distillation of alcohol. He has discovered an inexpensive method of obtaining alcohol from acetylene, which is the new gas that came to the front so prominently a few months ago as a probable substitute for ordinary illuminating gas, owing to its cheapness. M. Moissan pursues the same method of producing the acetylene gas by subjecting a quantity of coke and quicklime to the heat of an electric furnace, in order to effect a direct union of their elements and produce calcium carbide, which decomposes when thrown in water into acetylene. Ammonia-chromous sulphate absorbs this gas, and by the aid of heat trans-

forms it into ethylene. The ethylene is passed into hot sulphuric acid, and sulphovinic acid is obtained, which, by the addition of boiling water, produces the alcohol that then only demands rectification. The cost of best quality alcohol produced by this method is stated to be from 5 to 6 cents. per quart.—*Paint, Oil and Drug Review*.

THE GOVERNMENT AND FOREIGN PRODUCE.

LAST week at a conference of the Irish Agricultural Organisation Society, Mr. W. Field, M.P., said they should ask the Government to buy Irish pork, and not support the foreign article as they did last year by purchasing £9,900 worth of Danish pork. It was a shame—(hear, hear)—and there was only a fractional difference of a few pence per hundredweight between the Danish and Irish tenders.

Mr. Field, M.P., must be rather sanguine if he expects anything so sensible or patriotic on the part of our Government. Our last Irish Viceroy showed how he encouraged Irish trade by quashing a conviction of a person who palms off American hams and bacon as Irish and English produce. The present Government can find no money for English and Irish light railways, fisheries, etc., but it can throw two and a-half millions away on greasy, stinking savages in the Uganda swindle.

FERRUGINOUS FOODS.

AN investigation by Professor Bunge, a German physiologist, show that spinach contains considerably more iron than the yolk of eggs, which is followed in this respect by beef, apples, lentils, strawberries, white beans, peas, potatoes, and wheat, in the order named, cow's milk being nearer the bottom of the list of ordinary food substances. The small proportion in milk, the chief food of infant life, led to experiments to determine the quantity of iron in animals of different ages. It was found that young animals contain more than older ones—the body of a rabbit or guinea pig an hour old, for instance, having more than four times as much as a similar animal two-and-a-half years old. Professor Bunge believes it to be unwise to continue an excessive milk diet for infants for a long time. He also concludes that a great amount of iron is prescribed in tonics unnecessarily, and that in many cases it may only serve to cause digestive derangement.—*The Morning*.

CAMBERWELL AND ADULTERATION.

DR. TEED (public analyst) presented his report, showing that during the quarter there had been submitted to him for analysis 111 samples.

Mr. Dobson commented upon the large percentage of prosecutions for milk adulteration, and asked to be allowed to move a resolution calling attention to the inadequate fines imposed for adulteration by the magistrates, but the chairman pointed out that this was properly a subject to be treated by notice of motion.

In reply to Mr. Pexton, the analyst (Dr. Teed) stated that the samples were in every case taken from retailers. Samples could not be taken from wholesale dealers.

CREAM OF TARTAR ADULTERATED WITH STUCCO.

IN his quarterly report to the Sanitary Committee of Dundee Town Council, Mr. G. D. Macdougald, the city analyst, states that 11 samples were examined by him during the past three months, with the result that all were found to be genuine with a single exception—namely, a sample of cream of tartar, which was discovered to be adulterated with 25 per cent. stucco (sulphate of lime).

But how comes it that in so important a place as Dundee the miserable number of only eleven samples are analysed? It is no real protection of food purity whatever.

MUSTARD PLUS WHEAT FLOUR, TURMERIC, AND CAPSICUM.

ROBERT FREEMAN, grocer, Bow-road, appears to have fallen a victim to the "Ehrenfest game" we exposed some months ago; for on Thursday, at Thames police-court, he was summoned for selling adulterated mustard. An inspector for Poplar District Board said he purchased a ½ lb. of mustard from defendant for 2d. The analyst's certificate showed the mustard contained 25 per cent. of wheat flour, coloured with turmeric and flavoured with capsicum. Defendant said he bought the mustard believing it to be genuine. Mr. Mead told him he should have a warranty, and fined him 20s. but without costs.

THE FALSE WEIGHTS SWINDLE.

ALBERT RAYNER, coster, was, at Marylebone, fined £10 (alternative six weeks) for selling false weights. A County Council official, disguised as a coster, purchased two from prisoner. The process employed was to drill out the insides of correct weights and fill the spaces with a wooden plug.

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The Pasteur Filter prevents the passage of microbes of any kind, is difficult to break and easy to clear, and is effectual in preventing epidemics of cholera, typhoid fever, diarrhoea, and similar diseases.

THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

M. DE FREYNET (Report of Minister of War to President of the French Republic, *Journal Officiel*, February 14th, 1892), says:—"Wherever the Pasteur Filter has been applied to water previously bad typhoid fever has disappeared." At this date over 200,000 quarters of the French Army were fitted with Pasteur Filters.

Sir HENRY ROSCOE, M.P., Ph.D., F.R.S. (*Westminster Gazette*, September 8th, 1893), says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

After eight months' investigation in the Public Health Laboratory of the University of Edinburgh to estimate the value in prevention of disease, of the best known Carbon and Asbestos Filters, of the Pasteur Filter, and of a copy of it in another material, Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., states:—"The Pasteur-Chamberland Filter is undoubtedly the best, and the only one in which reliance can be placed for permanently sterilizing drinking water."

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Food and Sanitation.

SATURDAY, OCTOBER 12TH, 1895.

THE DANISH BUTTER HUMBAG.—ASTOUNDING EXPOSURE OF WHOLESALE ADULTERATION.

WE have many times had occasion to blame the blindness of English newspaper editors, who are continually puffing the supposed superiority and purity of Danish butter. We have never believed in either the superiority or purity, and although persistent and impertinent efforts have been made on behalf of Denmark to lead us to join in the insensate and unpatriotic folly of befouling English and Irish butter for the benefit of the Dane, we have held steadfast to the opinion that the puffing was not only unmerited, but, judged from the point of view of its effect upon the well-being of our own dairy farming industry, the editors who wrote the trash deserved to be put in a pillory for exhibition, as Anti-English Asses. They have swallowed the lie that, although there have been enormous increases in the margarine imported into Denmark, the Danes have been too honest to use that margarine for adulteration purposes; the *gobemouches* have written of the self-

denying Dane who—honest, thrifty soul—prefers to eat the margarine himself that he may send more pure Danish butter to England. If there were as much brains amongst the wordy rubbish rakers who fill our dailies with their useless verbiage as a fly could carry away without injuring his wing, they would know that any amount of margarine up to 20 per cent. can be mixed with butter without risk, as our incompetent chemists at Somerset House are not only incapable of detecting the adulteration, but would, if any capable analyst detected it, assuredly disagree with him, and pronounce the fraudulent article pure. But when to this we have to add the deliberate suppressing by English newspapers of a prosecution that proves Danish butter a swindle, we think we are entitled to ask: Is it not time that a little common honesty was inoculated in some of our mighty editors instead of the gold swindles and turf rot that they now wallow in?

Had the following case been one of adulterated Cork butter, it would have found a place in nearly every newspaper, whilst Irish and English butter producers would have had the privilege of reading, *ad nauseam*, laudatory paragraphs *re* Danish produce. It is therefore an important question that we ask: How did it happen that the case was not only suppressed in the Durham newspapers, but that this exposure of wholesale Danish adulteration was kept out of the entire English press? Such, however, is the fact, and we publish the case in the hope that occurrences throwing so sinister a light on some aspects of English journalism may become less common, and that our exposures may do something to secure justice for English and Irish produce and cause less ignorant praise to be made of Danish butter. At the Houghton Petty Sessions, Joseph H. Harvey, St. Nicholas-buildings, Newcastle-on-Tyne, was summoned at the instance of Mr. B. Scott Elder, chief inspector for Durham County, for giving a false warranty in respect of an article of food, to wit, butter, sold to the Hetton Downs Co-operative Society. Mr. Iliff (of Simey, Son and Iliff) prosecuted, and characterised the case as the worst which had come within his knowledge, and asked the magistrates to inflict a substantial penalty.

Mr. B. Scott Elder was called, and stated that on September 6 he visited the Hetton Downs Co-operative Society and purchased $\frac{3}{4}$ lb. of butter, for which paid at the rate of 1s. 3d. per lb. He then notified to the assistant who served him that it was his intention to have the butter analysed by the public analyst, and divided it in the usual way. The next day he received from the secretary notice of a written warranty, from the defendant, upon which they intended to rely. On September 14 he received the certificate from Mr. Stock, county analyst, stating that the butter contained not less than 75 per cent. of fat other than butter fat. He then went to the Co-operative Society to inspect the warranty and other papers, and, finding them satisfactory, he laid the information in the present proceedings.

George Wilson said he was assistant to Mr. Elder, and on September 7 conveyed a portion of the butter to the public analyst at Darlington.

Wm. A. Lowery, Secretary of the Hetton Downs Co-operative Society, said that on the 24th of August he gave an order to the defendant for 36 casks of Danish butter. These had duly been received, together with the invoices for the same. He also received from

the defendant the warranty which he now produced. They had no butter on the premises from any other merchant—in fact, it was the only butter they had.

The defendant pleaded not guilty at first, but afterwards withdrew that plea and pleaded guilty. He said he had a warranty from the foreign merchants which he knew was no use in the English courts. He said the error was not wilful on his part, as he had no means of knowing whether the butter was pure or not, but he had got a sample analysed recently, and found that the County Analyst was quite right. He was very sorry that the case had arisen. The Bench, in giving their decision, said that the case was a very serious one, as the Store was a very large one, in the midst of a populous district. They would, therefore, inflict a penalty of £5 and £3 19s. 6d. costs.

Mr. Scott Elder is to be congratulated on having dragged to light the fact that adulteration of Danish butter on such a large scale exists, and for affording an object-lesson to those grocers who advocate that the invoice should be a warranty. Were the invoice made a warranty, Denmark, France, Germany, and other countries could flood England with adulterated produce, and neither wholesale nor retail dealer vending such produce in this country could be punished, as was the dealer in the above case, for the production of such invoice would effectually bar a conviction.

THE SEALING OF SAMPLES.

A QUESTION raised by Professor Tichborne, at Dublin, on Sept. 24, in a case wherein he appeared as a witness, is a very important one for all concerned with the working of the Food and Drugs Act. Wm. Hall, 69, Meath-street, was charged with selling buttermilk, which Sir Charles Cameron certified to contain 80 per cent. of added water. Mr. Hanmore, who appeared for the defence, called Dr. Tichborne, who stated that a portion of the sample of the buttermilk which Kane sealed and left with the defendant Hall had been sent to him by Hall for analysis. He had declined to make the analysis because the sample was not properly sealed—the cork could be withdrawn without breaking the seal. This matter was of such importance that he, as a public analyst, after consultation with District Inspectors throughout the country, had issued directions to Inspectors to specially attend to sealing. Mr. MacSheehy, who appeared for the Corporation to prosecute, said the sample was sealed, and it was not because it did not please Professor Tichborne that there could not be a conviction. For curiosity and as a piece of sleight of hand, he would like to see if Professor Tichborne could draw the cork without breaking the seal (laughter). Professor Tichborne said he would try, and, drawing his knife, was apparently succeeding in removing the cork without breaking the seal when an explosion was heard, and the cork blew up to the ceiling and was lost to view.

Mr. MacSheehy argued that the sample returned to the vendor, not being properly sealed, could not injure the vendor, for, if anything, it would permit the vendor to substitute the pure for the adulterated article.

Mr. Byrne said, as at present advised, he was inclined to think that the sealing here satisfied the language of the Act.

The case was adjourned until September 25th for the attendance of Sir Charles Cameron.

At the resumed hearing, Sir Charles Cameron stated he always examined samples sent to him, but when he found that they were imperfectly sealed, he mentioned the circumstance in giving his analysis. He would not have sealed a sample in the manner in which the sample left with the defendant in this case had been sealed. He would put the wax all over the glass. He knew that Professor Tichborne had acted in the present case with the best object, because both of them had

been made the victims of parties tampering with samples. The summons was dismissed, and Mr. Byrne refused to accede to the application of Mr. Hanmore to allow costs.

Now that such prominent attention has been given to the question, it is to be hoped that there will be less slipshod methods of taking samples. Food and Drugs Act inspectors, who take pains to have everything they do in strict compliance with the spirit, as well as the letter, of the Acts, make the work easier for the courts, the analysts and themselves. It must, of course, be admitted in extenuation of much of the erroneous procedure that there has, up to the present, been no practical manual on the subject, the various works on the Adulteration Acts being brainless compilations of recorded cases. For the benefit of our readers we think it well to inform them that a really excellent work has just been issued, entitled, *The Law and Chemistry of Food and Drugs*. The authors are H. Mansfield Robinson, who, as clerk to the Shoreditch Vestry, has had a large practical experience of the procedure under the Acts, and Cecil H. Cribb, public analyst, Strand Board of Works. It is published by F. J. Rebman, 11, Adam-street, Strand, London, price eight shillings. It is so clearly written, admirably arranged and well printed that we can heartily recommend everyone concerned with the Acts—be they analysts, inspectors, medical officers, or traders—to procure a copy.

THE LAW OF NATURE.

IF there be one piece of rubbish more rubbishy than any other piece it is that favourite enunciation of pompous platitudinarians, "The Law of Nature." Sir Benjamin W. Richardson has been regaling a conference of teetotalers with a choice collection of ponderous oratorical sonorosities, amongst which "The Law of Nature," of course came in for buffetings and strainings enough to cause that unfortunate phrase, if it had retaliatory powers, to curse its maker. "The Law of Nature," quoth the "great" Sir B. W. Richardson, as he once in a famous baking powder case admitted himself to be, "is that man should drink no fluid but cold water, because the lower animals drink only cold water." The law of nature might have told Sir B. W. Richardson that such an argument was of the silliest. Man was not born garbed in breeches, vest, swallowtail, and a broad expanse of shirt front, solicitous of advertisement as chairman of this or that humanitarian, sanitarian, or other arian function, where much food at no expense and press kudos is to be had, and to be consistent with his law of nature our only sanitarian should have appeared as a naked apostle of his law, addressing a naked army of teetotalers. If we were to follow Sir Benjamin and his law of nature, we must not eat a grilled steak or a boiled potato, or use a knife, fork, or plate, or napkin, or do, in fact, anything that civilised, sensible beings find conducive to pleasant life and comfort. All such are abominations and contrary to the "Law of Nature." "We should base our conduct upon that of the lower animals, who only drink cold water," *i.e.*, we should patiently sit as a cat does before a hole to wait for a tiny mouse to emerge, pounce upon it, torture it by giving it vain hopes of escape, until our appetite for cruelty was satiated, and we should then devour the weaker animal, skin, hair, bones and all, or we may imitate the goose and finish off the stubble, or the dog that turns and swallows his vomit. No thank you, Sir Benjamin; the development of man has been a constant strife against the law of nature, and if civilisation is worth a row of pins the strife must continue. The law of nature was summed up in—

"The good old rule, the simple plan,
That they should take who have the power
And they should keep who can."

Happily for such there exists the cat or the gallows.

It is the law of nature that leads the gang of thieves whose African and Australian gold mine swindles will shortly be a *replica* of the South Sea bubble, to prey upon the thrifty and foolish investing public. It is that law which causes editors who know the gang to be ignorant, unprincipled liars and rogues, to laud the scoundrels as public benefactors. For the good of England and of all who wish to live without cant or knavery, the less rubbish we have about the law of nature the better. But we will be charitable, and suppose that Sir Benjamin was borne away by a flood of water gasology, and did not know what he was talking about.

THE WATER-AT-SPIRIT-PRICE SWINDLE.

At the Houghton Petty Sessions, James Rudd, inn-keeper, Hetton-le-Hole, was charged with selling whisky which was not of the nature, substance, and quality demanded. Mr. B. Scott Elder, Chief Inspector, prosecuted, and Mr. A. T. Crow defended. Mr. Elder stated that on September 6 he purchased a pint of whisky from the defendant, which on analysis was found to be 47·36 degrees under proof. Mr. Crow, for the defence, said that the spirit was supplied to his client by the wholesale people already diluted, but in the defendant's absence his barman had added the water in mistake. However, as his client had dismissed the barman, he asked the Bench not to inflict a heavy penalty. The Bench inflicted a penalty of £1 10s. and costs.

USURY.

ALMOST every day sees some harassed person making his complaint of the extortion done by the harpies who contribute so largely to the revenue of our leading newspapers by their advertisements of loans at easy rates, without enquiry fees, etc. Is it not time to tell our impeccable press that the receiver is as bad as the thief, and that the public are fleeced because our newspapers spread broadcast the swindler's lies? But is there no way, in spite of the corruption of our newspapers, by which money-lending swindlers could be squelched?

We believe there is. A Usury Act, making illegal the recovery of any interest over ten per cent. per annum on lent money, would go far to prevent such cases as the following:—At Shoreditch County Court on October 8, before Judge French, Q.C., Robert Kenneth, trading as R. Kenneth and Co., describing themselves as merchants, sued George Archer, a clerk in the service of Messrs. H. S. King and Co., bankers, Cornhill, on a judgment summons. Mr. Blackwell, barrister, said he was instructed by defendant's employers, the well-known bankers, to represent the latter in this case. They considered it one of the most shameful cases that had ever come under their notice. Defendant was a clerk in their service, and although plaintiff described himself as a merchant, he was in reality a usurer of the very worst type. Defendant some years ago got into pecuniary difficulties through ill-health in his family, and in a weak moment applied to plaintiff for a loan of £5. The agreement was that he was to pay interest at the rate of £2 10s. per quarter. The unfortunate defendant had already paid over £30 in interest, and then plaintiff obtained judgment against him. Judge French: Did the case come before me in the first instance? Mr. Blackwell: Unfortunately it did not. Judge French: I wish it had! (Laughter.) Mr. Blackwell added that plaintiff's conduct had been much aggravated by his subsequent action. Evidently with the intention of intimidating the defendant, either he or one of his clerks had gone to Messrs. H. S. King's premises demanding payment from defendant, and behaved in so intolerable a fashion that he had to be ejected from the premises. Judge French: Now,

plaintiff, what is your evidence of defendant's means? Plaintiff: I believe he has a salary of £120 a year. Mr. Blackwell: Will you swear that, sir? Judge French: Never mind, Mr. Blackwell. There is no evidence of means to satisfy me. The case is dismissed, and plaintiff must pay defendant 10s. for his attendance here today. (Laughter.) Messrs. H. S. King and Co. did a manly act in standing by their clerk—too many bankers and business firms would have done the very opposite—and the public have cause for thankfulness that there can be found dispensing justice men who adorn the Bench as Judge French does.

GERMAN TRIALS OF WATER FILTERS.

THE *British Medical Journal* publishes the following interesting report:—

"The Prussian War Office has recently published an interesting report, by Dr. Plagge, on investigations on which he has been engaged during the last ten years in respect to the capacity of water filters to prevent disease. So far back as 1885, Dr. Plagge tested all the then available filters. He found, as all other observers have found, that the German carbon, natural stone, gravel, sand, cloth, sponge, paper, and asbestos filters were entirely useless. In the case where he examined filters from England, as with spongy iron, and the Maignen carbon filter, he obtained the same result. During the last four years he has undertaken a renewed investigation of modern forms of filters, and it is to the results of this investigation that the present report owes its chief interest.

"Beginning with the carbon filters of Bühring and other German makers, he remarks not only the same incapacity to prevent the passage of organisms as he had found previously, and as has been repeatedly indicated in the columns of the *British Medical Journal*, but also the same tendency on the part of the makers to make false claims for their apparatus as unfortunately exists at present in this country. The Maignen Filtre Rapide, composed of a carbon preparation and asbestos, had been tested by Dr. Plagge's predecessor, and found entirely useless in the prevention of disease. The paper, cellulose, and asbestos filters, including the well-known Austrian filters of Breyer and numerous other makers, were equally found permeable to disease organisms.

"The Pasteur filter was only examined incidentally. The author, while describing it as in the fullest degree satisfying all sanitary requirements, and as necessarily the standard for all later constructions, was attracted to the exceptionally large output yielded by some of its later imitations. The imitations of the Pasteur filter in porcelain in Germany have been numerous, but, according to Dr. Plagge's results, hitherto unsuccessful—a circumstance which is interesting to us in this country, where the advent of such imitations may be expected to follow on the increasing use of the Pasteur filter.

"The chief body of the report is devoted to the experiments with the Berkefeld filter. Dr. Plagge was attracted by the enormous output of this filter; and, apart from a preliminary investigation, of which he thinks the results cannot be at present fairly considered as final in the light of the improvements which were subsequently made in the filter, he has had them at work and under bacteriological observation for three years. The preliminary observations were sufficiently hopeful to warrant the experimental use of specimens of them in an African expedition. They were found to be unsuitable for this service; and in the present year, being again tried in the portable form, were still found to altogether fail. We must say that we think the circumstances under which these filters were used while necessarily conclusive as to the unsuitability of the filters for army purposes, were considerably more trying than many in which the use

of a filter is indicated. It is in the tables of the experiments made by Dr. Plagge in his laboratory, where the conditions of manipulation by competent persons and treatment of water less difficult to filter than that which was used on the field trials, were at least as favourable to the filter as those which would occur in ordinary domestic use, that we find the materials for pronouncing a definite judgment on the practical value of this filter.

"The tables extend over sixty pages, and relate to the examination of 38 specimens of Berkefeld filter tubes. Of these, 37 were put into actual use, and examined after periods varying from five days up to six or seven months. The output was in almost all cases found not only to be initially very high, but also with periodical cleaning at short intervals to remain so for long periods. In respect, however, of capacity to arrest microbes, and of mechanical strength, the results obtained may be thus summarised. Of the 37 filters successfully set to work, four passed microbes directly, and were consequently not further examined; five did so before the end of the trials, varying from five days up to three or four months; 1 during the trials passed microbes within eight to ten hours from the time of sterilisation: 3 did so from the outset within twenty-four hours. Of the remainder, 16 passed microbes within twenty-four hours from sterilisation at some time previous to the termination of the trials, varying from five days up to seven or eight months. In two such cases the filters were examined hourly, and it was found that the organisms passed within the fourteenth and eighteenth hours respectively.

"From these circumstances Dr. Plagge concludes that it is indispensable for the Berkefeld filter to be cleaned and thoroughly sterilised by boiling either once or twice in twenty-four hours, according to the extent to which it is used. During his own examinations the cleaning and boiling were at irregular intervals, but amounted approximately to the same extent of treatment. The net result was that of the thirty-seven filter tubes used, no less than twenty-seven got broken during their respective trials, varying from nine days to seven to eight months from their commencement. These results, obtained in the case of tubes submitted by the makers for experiment, and handled by persons accustomed to the manipulation of sensitive apparatus, are probably at least as favourable to the filter as those which would be obtained by persons to whom the care of filters would ordinarily be entrusted in practice. While these experiments were going on, six Pasteur tubes were under similar examination for eight months, but none were broken.

"It therefore appears that, out of the 37 filters 29 first or last passed microbes within twenty-four hours of sterilisation or less, 9 of them directly, while 27 were in a more or less short time broken. Apart from the expense of renewals of filter tubes which such breakage would cause, it is impossible to entertain the adoption of a filter which in many cases is incapable of giving any protection at all against the passage of microbes, and is liable after use to lose its initial capacity to arrest such passage within a few hours of sterilisation.

"The results obtained by Dr. Plagge confirm and extend those of Dr. Johnson's research on the same subject, and appear to show definitely that the larger output of the Berkefeld filter is obtained at the expense both of mechanical strength and of capacity to resist the passage of microbes. There is the less reason at the present time to seek for these exaggerated outputs, as the installation of Messrs. Debenham and Freebody, visited by members of the Public Health Section of the British Medical Association at their last meeting, showed in a practical way that any desired daily output can be very simply obtained from the Pasteur filter itself. Dr. Plagge's report shows clearly the risks which may be incurred in dallying with alternatives of less efficiency than that of the rigidly adequate standard which Pasteur has supplied."

ENFORCING SANITATION IN PORTSMOUTH.

JULIAN S. HAWKINS, of 25, Waverley-grove, Southsea, was summoned, on October 2nd, for permitting a nuisance upon Nos. 18, 20, 22, 24, and 26, Durham-street, Landport, on the 28th of May last.

Mr. G. H. King appeared for the prosecution.

Mr. Bell, Chief Sanitary Inspector, said that the yards attached to the houses were very small and defectively paved, and were in such a condition as to be injurious to the public health.

Dr. Mumby, the Medical Officer of Health, having corroborated the foregoing evidence, defendant denied that the property belonged to him, stating that he sold it to the railway company three months ago. However, he admitted still receiving the rents.

As Mr. King pressed for an order and a fine in the case of No. 18, which was taken first, defendant was ordered to abate the nuisance in seven days and pay a fine of 15s. To save time, defendant then proposed to plead guilty in the remaining cases. But as he refused to admit the ownership of the property the cases had to be proved. Whilst this was being done, defendant's interruptions and irrelevant statements drew from Mr. A. W. White (the chairman) the remark, "We won't have the time of the Court wasted in this manner. You are a perfect nuisance."

In three other cases defendant was fined 15s., instead of merely having to pay costs, and in the remaining case an order to abate the nuisance was made.

Defendant: "I don't intend to pay; the property is not mine."

The Chairman: "Very well, there will be a distress warrant or seven days in default."

Defendant: "If I am not allowed to prove my case, it is a fallacy to come here." Fines were paid.

JOHN BARRETT was also fined 15s., including costs, and ordered to abate the nuisance existing upon a house in Marlborough-row, Portsea. Defendant stoutly maintained that he would not pay a penny. "I can live in the country," he said, "upon what I pay for rates and taxes in town. I won't pay a penny. You may put me in gaol."

The Clerk: "Will you pay the 15s.?"

Defendant: "No, I will not. You can put me below. That is straight. I shall be better off in the Union than in this house, and you can put me there. That is telling you straight." And with these words defendant walked out of the Court.

LEONARD CROSS was fined 20s. and costs for not repairing a defective roof in Twyford-avenue, Stamshaw. He was further ordered to complete the necessary repairs.

MRS. MARSHALL, of Chichester, the owner of 64, Queen's-road, Buckland, for allowing a drain to remain choked, was fined 17s. 6d., and ordered to abate the nuisance within seven days.

JOSEPH PHARAOH, of Waterlooville, was fined 17s. 6d., including costs, for failing to comply with a notice to repair the drains at 5, Hyde Park Corner, Southsea.

CHAS. HOPGOOD, 13, Boulton-road, was summoned for non-compliance with a notice to cleanse his house, which was described as being in a most filthy condition. He had previously been fined for similar offences, and was now fined 15s., and ordered to do the work in fourteen days.

CHEMICAL FOOD EXPERIMENTS.

THE "scientific food" theory has had a set-back. According to the *New York Tribune* it has been weighed in the balances of experience and found wanting. A detachment of the United States Army was detailed to try it. Fifty men were sent out for a three days' march with "scientific rations" in their haversacks. They had little tablets of highly concentrated essences of coffee and bread which, it was imagined, would be as serviceable as the bulkier drink and food in their

nsual form. But at the end of the first day three-quarters of them were doubled up with cramps. Their digestive organs could not assimilate the concentrated food, or were not satisfied with it, and the experiment was a failure. It is stated that the men were ordered to keep on to the end of the three days' trial, which seems a needless hardship. Their stomachs and intestines are not likely to take to a diet of chemical tablets any more kindly on the second or third day than on the first.

There is something attractive in the notion of scientific food. In many respects it would be a great gain if men could live on a few pills or powders or tablets, instead of bulky masses of bread and meat. It would greatly simplify our domestic economy, and give each household its longed-for independence from the tyranny of the cook. But it is impossible. A million or so years hence it may be effected, when man has become physically as different from what he is to-day as he is to-day from the mollusc, but not before. The man of to-day not merely requires a certain amount of absolute nutriment, but he requires it to be commingled with a certain bulk of other matter which is not nutriment at all. He has not only organs of assimilation, but equally elaborate and important organs of excretion, which demand to be supplied with material for their work.

The argument against scientific food—or, more properly, chemically concentrated food—is therefore resolved into a parallel to Pope's lines:—

Why has not man a microscopic eye?
For this plain reason, man is not a fly.

Man cannot exist upon a chemical diet, for the plain reason that he is a man. He has physical requirements and functions which demand food in other form than chemical extracts. Much may, of course, be done by science to improve our food supply, to render it more wholesome, more efficient, perhaps more convenient and portable. Beyond such limits it can scarcely go. Bread is the "staff of life," and, with meat and fruit and vegetables and other adjuncts, is apparently destined to remain so to the end of time.

HARD LINES!! EIGHTY-FIVE PER CENT. CHICORY.

THE coffee-in-chicory question may be considered, as far as the coffee is concerned, to approach the vanishing point when there is the intolerable amount of 85 parts of chicory to 15 of coffee. But, at Spalding Petty Sessions, Robert Edward Sharpe pleaded hard lines when prosecuted for selling such an article for coffee!

Robert Edward Sharpe, grocer, of Crowland, was summoned for selling adulterated coffee.—The charge was denied.—Supt. Osborn spoke to purchasing a sample of coffee for analysis at the defendant's. He purchased a quarter of a pound, for which he paid threepence. He handed in the analyst's (Mr. C. H. Southwell) certificate, which was to the effect that it was adulterated with chicory to the extent of 85 per cent. He acknowledged under cross-examination that he was told that they kept two sorts—one at 1s. a pound, and one at 1s. 8d. a pound, and he elected to take the coffee at 1s. a pound.—The defendant stated that he purchased a seven-pound tin in 1892, and paid 9½d. a pound for it. He had not adulterated it himself. He produced the invoice of the wholesale firm.—Mr. Winfrey: I suppose you know that, at the market price of coffee, it is impossible to sell pure coffee at 1s. per pound. The Clerk said they could not prevent the defendant selling chicory, but it must be stated that it was such.—The Bench put on a fine of 10s. and costs.—Defendant asked whether he could have protection?—The Chairman: You must consult a solicitor.—The Clerk said he must give notice that the coffee was sold as a mixture, but he could have a guarantee

from the house who supplied him that the coffee was pure.—The Chairman: If the house in London has brought you into this trouble they ought to see you out of it.—The defendant said he did not know that it was mixed with chicory. He thought it very hard lines.—The Chairman said the police could only proceed against the defendant, who was the seller.

UNCTUOUS DENMARK.

IN the face of the disclosures in another column re Danish butter, the following from our contemporary *The National Provisioner*, is entertaining reading:—

"Oleophobia in Denmark.—We referred a few weeks ago in these columns to the fact that the dairy papers in Denmark were printing lying reports to the effect that American oleo oil was being adulterated with horse oil. We said at the time that such statements were too absurd almost to be contradicted or commented upon, excepting to show the degree of animus which foreign competitors are displaying just now against American products.

"Writing on this subject, Secretary of Agriculture Morton says:—

"The charge made by certain Danish butter papers to the effect that the fat of horses is used in the manufacture of oleo oil in the United States is too absurd to require consideration so far as it relates to the product of our reputable establishments in this country. The large beef slaughtering concerns do not handle horses, and it is not reasonable to suppose that they would purchase the fat of these animals to adulterate a product the reputation of which has only been established with much labour. If any oleo oil is adulterated in the manner alleged, it can only be the product of small houses which have no reputation to lose."

"In this connection we might say that the poorer the oleo oil the less would be the advantage of adulterating it with horse oil, for the very simple reason that the latter is infinitely more expensive and has a higher commercial value used in its proper channels. Independent of this, we will stake our reputation on the positive statement that no oleo presser, large or small, would resort to such methods."

WHAT IS ARROWROOT?

AN important question was raised at Cranbrook on October 3, when James Fillery, grocer, the Moor, Hawkhurst, was charged with selling *tous les mois* starch for arrowroot. Mr. Bracher, of Maidstone, prosecuted, and Mr. Fredk. W. Beck (of the firm of Neve and Beck, London), appeared for the defendant. Mr. Bracher, in opening the case for the prosecution, stated that on July 27th, the defendant, when asked for arrowroot, sold a substance which Dr. Adams, the county analyst, certified to consist entirely of *tous les mois* starch. The case had been adjourned for a sample to be sent to Somerset House, and the authorities there had given a certificate which confirmed that of Dr. Adams. For the defence Mr. Beck contended that the article had not been sold to the prejudice of the purchaser, as a better article was sold than he had a right to expect. The defendant said he purchased the substance from a firm at St. Leonards, and he believed it to be arrowroot. Mr. Otto Hohner, the West Sussex analyst, said the sample was *tous les mois* arrowroot. It was an uncommon kind, but he had never known it to be doubted that it was arrowroot. The authorities classed it as such. Other evidence having been given, the Bench retired, and on their return the chairman said they felt bound to convict, but under the circumstances only a small fine of 5s. would be inflicted, with the costs, which amounted to £2 14s. 2d. The Bench felt that Mr. Fillery had been fair in his dealings, and

there was no intention to defraud. An application by the defendant's solicitor for a case to be stated was granted.

Wynter Blythe, Parkes, and other authorities class *tous les mois* as true arrowroot, and it would be a relief to dealers to know if they are legally justified in selling it as such.

MENE, MENE, TEKEL.

To the work we have done in bringing about the enormously increased activity in the working of the Adulteration Acts, in the appointment of the late Select Committee on Adulteration, and in putting the true character of the Government chemical department at Somerset House before the public, we may now add the gratifying fact that we have opened the eyes of some of the important personages who honour England by taking enormous salaries to keep it from going to the "demonstration bow-wows" to the knowledge of what the brewers' and distillers' swindles of using any rubbish for the manufacture of their liquids means to the public and England's prosperity. The principal brewer's organ in its last issue says:—"We have reason to believe that Somerset House is already at work compiling statistics, and gleaning information . . . and, having regard to the previous experience in matters fiscal, we cannot but think that trouble is brewing." This is not exactly what is wanted, but it is a straw showing the way the wind blows. Having gone so far, why does not the Chancellor of the Exchequer enlist the services of one or two eminent scientific men of real capacity and get an independent report on the questions? Somerset House will, of course, burke the truth to shield its own incompetence, but the denatured snuff frauds, along with the ignorant rubbish the Government department offered as "expert" evidence to the last committee on spirits ought surely to be enough to convince any person of intelligence that the last body of persons to make a report of a true and useful character are the Somerset House Inland Revenue chemists.

LARD FROM COTTONSEED-FED HOGS.

FROM recent investigations carried on by the Texas Agricultural Experiment Station, it appears that hogs and bees fed on cottonseed products will yield a fat presenting all the chemical properties of cottonseed oil. The lard of hogs fed on cottonseed meal instantly reduced nitrate of silver, which, in Bachi's modification, is considered a distinctive test for cottonseed oil. Our own chemist has found the same result in butter obtained from cottonseed-fed cows. Such lard as suet, even if avowedly perfectly free from adulteration, is likely to be condemned by the average analyst. While this goes to prove that cottonseed oil cannot be considered as an inferior fat-product, and while its formation in the system of the animal justifies its use in compounding legitimate fat-products, it, on the other hand, shows the risk of perfunctory chemical investigation. Strange to say, the iodine-absorption and the saponification equivalent in the case of lard and mutton-suet was decidedly lowered against all expectations and but slightly heightened in butter, while the Reichl figure was out of all proportion, amounting to only 12 in volatile acids, instead of 26 as in normal butter. We hope that the chemical laboratory of the Agricultural Department will further study this important question, which proves once more that no reliance can be placed on a conclusion reached by but one so-called distinctive test. Only by scientifically combining the results of all tests of all the chemical properties of the fat in question is it possible to arrive at the true nature of the product under examination.—*National Provisioner*.

THE AMATEUR INSPECTOR AGAIN.

AT Liverpool, on October 7, Hugh Cauley, Crosby-road, Seaforth, was charged with selling as butter an article not of the nature, character, and substance demanded. Mr. Cornett, solicitor, said the prosecution was instituted by William J. Parkinson, an inspector of the Royal Agricultural Society, appointed in conjunction with the County Council. These prosecutions, he added, were undertaken on behalf of the agriculturists of the county, whose trade was seriously interfered with by these spurious articles being passed off on the public. The inspector visited defendant's shop on September 4, and asked for a pound of butter, with which he was served by defendant's son on the payment of 10d. He divided it into three parts, and the one submitted for analysis was found to contain 12 per cent. of water, and upwards of 55 per cent. of fat other than butter. For the defence Mr. Rudd submitted that in order to substantiate the prosecution it must be proved that intimation had been given to the shopkeeper before the purchase that the article was intended for analysis by the public analyst. He contended that no such intimation had been given. Mr. Cornett replied that the seller had been notified that the article was for analysis, and that no particular form of words need be employed in conveying this information. The bench dismissed the case.

We do not know which to pity most—the solicitor, the amateur inspector, or the society that can afford to waste money in such half-baked cases.

CURIOUS MILK CASE AT SOUTH SHIELDS.

AT South Shields, on October 4th, James Colwell, farmer, was summoned for selling milk adulterated with water. The Town Clerk prosecuted, and Mr. R. W. C. Newlands defended. Mr. Pollock, inspector under the Food and Drugs Act, deposed to purchasing a quantity of milk from a boy employed by the defendant, and who was delivering it to customers. He had it analysed, and the analysis showed seventeen per cent. of added water. By Mr. Newlands: The defendant had delivered milk in the town for many years, and there had never been any complaint against him before.—Mr. Newlands said that the defendant had sent milk into the town for nearly 28 years, and in that time very many samples had been taken from his milk supply and analysed, the results of which had always proved satisfactory. The defendant was at a perfect loss to account for the water found in the milk on this occasion. It was sent away from the farm just as it was got from the cows, and he knew nothing more about it until this summons was served.—A fine of 20s. and costs was imposed.

POISONOUS EFFECTS OF BORAX.

THE extensive use of compounds containing borax, which under various names are sold for preserving foods, lends a special interest to some observations of Dr. Ch. Féré, of Paris, who has used borax in the treatment of intractable cases of epilepsy, and with success in certain cases. It is true that for this purpose it was necessary to give large doses for long periods, but in the course of the trial he met with a considerable number of persons who were peculiarly susceptible to borax. In them, loss of appetite was succeeded by burning pain in the pit of the stomach, dryness of the mouth, and eventually by nausea and vomiting. Borax produces also a remarkable dryness of the skin, which is found to favour, if not to cause, various skin diseases, especially eczema. The hair also becomes dry and may fall out, causing complete baldness. The most dangerous result of the use of borax, however, is its power of producing kidney disease, or of converting a slight disorder of the kidneys into a fatal malady.—*British Medical Journal*.

SELL'S TELEGRAPHIC ADDRESSES.

THIS valuable business compilation has just been supplemented by the issue of the third and final register for the year, correcting the information supplied by the Postmaster-General during the past three months.

Mr Sell announces that all the additions and alterations contained in the three supplements of the year, and all further corrections and information received from the Post Office during the current three months will be incorporated in the new volume for 1896—ready early in January next.

The new volume will also contain all the trades and professions, as well as the telegraphic addresses and telephone numbers of the 50,000 largest concerns in the country.

TOUGH MEAT.

At an hotel dinner one day a fierce argument broke out among a company of Presbyterians concerning such matters as Presbyterians love to argue about. To allay the heat an American interjected an anecdote. "I've just come by way of the Pacific from the Cannibal Islands," he remarked, "and while there I dined with the royal family. The king said, 'This yer meat's very tough, my dear.' 'Well,' said his wife, 'there's so many sorts of Presbyterians in the meat-market now that I didn't know which sort to ask for when I went shoppin', and I suppose they have sent me an inferior sample.'"—*Meat Trades Journal*.

DELUDING TEETOTALERS.

INTOXICATING GINGER BEER.

At the York Police-court, on September 30, Ann Gibson, of Bond-street, Groves, and Thomas Bradley, of Laurence-street, were summoned for selling beer without a license.—Mr. J. O'Donoghue, supervisor of Excise, prosecuted, and stated that according to the Act any liquid containing above 2 per cent. of proof spirit came under the head of beer. The defendants were both selling ginger beer, a sample of which was obtained and sent to Somerset House, where, upon analysis, the samples were each found to contain 4·4 per cent. of proof spirit.—The defendants were each fined 1s. and 30s. costs.

THE SCIENCE OF MILK ADULTERATION.

MR. F. SUTTON, the Norfolk County Analyst, says that during the quarter he analysed 40 samples, out of which 34 have been declared genuine. In the case of two samples of milk found adulterated prosecutions had been ordered. Mr. Sutton remarked: "There is evidently some careful manipulation among some of the milk dealers, by judicious skimming, watering, and adding separated milk, which succeeds in manufacturing a milk which will just comply with the requirements of the law and no more."

And this is what Somerset House has done for dairy farmers and the public!

THE LIEBIG NOSTRUM IN CHINA.

THE British Consul at Canton states that in China the extracts of beef and other meat juices are coming into favour. The Chinese like to imagine that they have run down, and are fond of nursing themselves. They possess many invigorating nostrums for restoring exhausted nature, and, probably on account of its high price, extract of meat seems to afford them great satisfaction.

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

By ALEX. J. WEDDERBURN.

THE discussion of food adulteration in this country and the consequent agitation of the subject have drawn the attention of foreigners to the fact that adulteration exists among us to a greater or less degree, and the result is that the foreign competitors of our manufactures of food products have used the fact to their own advantage, and America to-day occupies the unenviable position of being one of the very few countries of Christendom that fail to require by law the proper branding of their manufactured food and drugs. Whether such requirements would accomplish the desired result is beyond the power of anyone to say, but the evil would no doubt be mitigated by wholesome legislation, and this belief is sustained by the results of the food laws of England and other foreign countries, as well as of the various States. The concurrent testimony of State officials charged with the enforcement of State and local laws is that a national law is necessary to secure the proper enforcement of State laws. No well-informed constitutional lawyer will dispute the fact that so long as the "original-package" decision stands as law, it will be impossible for any State, no matter how stringent its laws, or how efficient its officers, to fully execute them. If this be true, and the fact be established that adulterations exist to any considerable extent, or that they are harmful to health, morals, or industry, and the writer believes the facts sustain the assertion, then the need for a Federal law is imperative. There can be no doubt that the effort to purge the country of this crime is doing good and aids in keeping down the adulteration of the products we consume, but each year brings to light new articles in which some intelligent "artist" has discerned a method to improve the profit if not the quality of the article sold.

That almost every article of food and drug used in our country is adulterated to a greater or less extent is proved most conclusively by a vast amount of information gathered upon the subject by the Division of Chemistry of the Department of Agriculture, and referred to the writer for compilation and report. The extent of these sophistications can be truthfully said to be as broad as the continent.

Their character, however, is such as to injure the pocket rather than the health. The general character of food adulterations is principally commercial fraud, and the extent of criminal or poisonous adulterations in food is so limited as to amount to but a bagatelle in the immense sum of the products consumed. I am convinced that a large proportion of poisonous adulterations arises from carelessness and ignorance, rather than from any desire to injure the customer to whom sale is made. But ignorance is no excuse for the wholesale destruction of life by the addition of poisonous pigments to many articles of food, especially confectionery, cream, and like articles. It would occupy too much space to show the numerous cases of poisoning from eating cream, cakes, candies, cheese, pickles, canned goods, etc., and would add little value to this report; but the fact that such occurrences are not only common but frequent shows the existence of an evil that demands the strictest remedial legislation possible.

The existence of adulterations is conclusively proved in the pages of Bulletins Nos. 13 (parts 1 to 8), 25, and 32, issued by the Division of Chemistry of the Department of Agriculture; by every report of State officials, where such exist; by testimony from every State where investigations have been set on foot by pharmaceutical or pure food associations; by the testimony herewith submitted from every quarter of this country, and by the admissions of the adulterators themselves.

That adulteration is general and increasing is proved

in the following pages, as is also the fact that no kind of food, drugs, or liquors is free from the finishing touches of the manipulators. It may be, therefore, concluded that the practice is general and the character principally fraudulent, with but occasional criminal additions, the latter, however, too frequently causing loss of life and health. Ignorance and vice go hand in hand in their destructive game, yet, whether the intent be criminal and vicious, or simply fraudulent, the result is the same, and the people suffer and will continue to suffer until the strong hand of Federal law steps in to supplement and support the action of the States.

As to the harmfulness of these practices, one has but to read the results of coroners' inquests, in all sections of the Union, to determine for himself that question. When illness and death occur from eating or drinking some attractive and beautifully prepared article of food, the fact that harm exists is proved. In a previous report I have shown that death resulted from the use of chrome yellow not only to the customer, but also to the vendor and members of his family. This did not of necessity prove the man who used and sold the article a knave, but it proved him a fool. Now, to prevent a repetition of such occurrences, the law should compel the man who manufactured the colouring matter to brand it so that even the most ignorant could distinguish its harmful qualities, and thereby at least restrict the use of such articles.

In such cases ignorance should be no excuse for crimes perpetrated for the purpose of gain. The murder of one innocent, like the child in Brooklyn who was killed by eating a "greened" pickle, was more of a crime against human rights than all the restrictive laws that could be put upon the Federal statutes. It is generally conceded by my correspondents that a Federal law will secure prompt action on the part of those States which have failed to take action in this matter, and thus lessen the chances for like occurrences.

In the case of drugs, the extraction of their strength, their manufacture in a careless manner, or the substitution of an inferior article, are other matters entirely, and are not only crimes against the pocket, but against health and life. Nearly all of the States recognising the necessity for the prevention of crimes of this character, have stringent pharmacy laws, the enforcement of which is not only beneficial to the public, but also of untold value to the reputable druggist, who is as anxious to prevent fraud as anyone.

The reports of the various pharmaceutical associations of the country show that the members are earnest advocates of pure drugs, and yet the reports of their various committees on deterioration and adulteration all show the existence, to a greater or less extent, of adulterations. Letters from leading men in the business say that until the Federal Government enacts a law which will prevent the shipment of articles from one State to another unless properly branded, State laws to prevent the sale of such articles must of necessity prove ineffective.

Adulterations in our food, our drugs, and drinks exist to a very great extent in every State. In previous bulletins—Nos. 25 and 32—the writer has claimed, from data at hand, that the extent of adulteration is not less than fifteen per cent., and he is still convinced that this is rather below than above the mark. Of this amount probably only 2 per cent. is of an injurious character to health, but when we remember that to furnish 65,000,000 people with food, drink, and drugs costs not less than 6,760,000,000 dols. (allowing the average cost per capita to be only 2 dols. per week), we find by calculation that the amount of adulteration reaches the immense sum of 1,014,000,000 dols. annually, and as the population increases each year so will increase this constant drain upon the resources of the people. It may be said that a large proportion of this is simply a deterioration, and that the

purchaser gets value for his money and is benefited by the reduced price. Were this true, the loss still falls upon the producer of the genuine article, and it must be recollected that at least 2 per cent. of the whole is of a character deleterious to health, which amounts to the sum of 135,200,000 dols. as the annual amount paid by the American people for having their lives taken or their health injured.

No one attempts to controvert the assertion that when a purchaser tries to buy an article, and is ready to pay for it the price asked, he should be given that article and not a substitute, even if the substitute be better, unless its true character be explained. It is claimed by the vendor of adulterated goods that the demand for cheap goods causes the supply; that the desire to get something for nothing ends in compelling sophistications. Admitting the justice of such a line of argument, it only goes to show the utter disregard people have for their own comfort and pockets, and their absolute ignorance upon matters relating to their health. People who take it for granted that what they eat is all right will take very great care about selecting their shoes and clothes. Under such circumstances, and believing that there exists no more serious or exhaustive drain upon the resources of the people than the adulteration of their food and drug products, I take it that the Federal Government should enact a law of such a character as to prevent the transportation of misbranded, poisonous, or deleterious food and drug products from one State or Territory into another, not interfering with the police powers of the States. This being done, the various State laws would become effective, and by systematic effort on the part of officials or honest dealers and manufacturers, adulterations would be reduced to a minimum, and millions of dollars saved annually to the country.

Fortunately, most of these adulterations are commercial frauds only, but these in themselves produce others, and degrade the tone of morality. They would be rejected by the majority of dealers and manufacturers if the law enabled them to compete with dishonesty, but so long as no restriction is placed upon the evil-doer so long will he attempt to make money by swindling his fellows, and naturally the more honest man, finding his business ruined by the pirate, without chance for redress or relief, drifts into the same channel and becomes a party to the crime by adopting the methods and practices of the rogue.

The law should not be made to discriminate against one class of manufacturers or producers at the expense of another, equality before the law being the fundamental principle of our Government; but as the necessity for law exists only to insure the life, liberty, and happiness of our people, its providence is undoubtedly to protect the weak and restrain the strong, especially when, by misrepresentation frauds are put upon the people in the essentials of life and health, and the products of honest manufacture and agriculture are debased, as is done when a food or drug product is sold under a misleading brand, or for something which it is not, thereby reducing the value of the real product.

(To be continued)

LINES TO A DELINQUENT SUBSCRIBER.

If I should die to-night—
And you should come to my cold corpse and say,
Weeping and heart-sick, o'er my lifeless clay,
If I should die to-night—
And you should come, in deepest grief and woe,
And say, "here's that six-and-sixpence I owe,"
I might rise up in my great white cravat,
And say, "What's that!"

If I should die to-night—
And you should come to my cold corpse and kneel,
Clasping my bier to show the grief you feel—
I say if I should die to-night—
And you should hear, and there and then should come,
And even *hint* about paying me that sum,
I might rise, galvanised—and then drop dead and dumb.

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Guaranteed BREWED and free from ANY ADDED ACIDS.

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Food and Sanitation.

SATURDAY, OCTOBER 19TH, 1895.

THE ADULTERATION ACTS AND CONDENSED MILK.

GLASGOW citizens are, as far as the Acts to suppress adulteration allow, admirably served by Mr. Peter Fyfe and his assistants. Meat extracts, essences and juices, infants' foods, and condensed milks have, amongst other articles, been carefully examined by Mr. Fyfe's instructions, and the results made public for the protection of consumers. The policy of causing analyses of proprietary articles to be made and warning Glasgow citizens as to the questionable or adulterated articles appears, whilst Sheriff Strachan makes law a farce in Glasgow, to be one to which no well-grounded objection can be taken, inasmuch as it is abundantly clear that the courts somehow always side with adulteration. Coleridge and Condensed Milk, and Hawkins and Baking Powder are cases in point. It has now been held in the Glasgow Sheriff Court that to sell as condensed milk an article certified deficient in 44 per cent. of its

natural fat is not an offence under the Act, although the tin purchased bore the lettering across the label, "This milk is guaranteed to contain all its original cream." We shall not alter one jot of the language used by Sheriff Strachan in giving his decision upon this case, but shall let him explain his folly and incapacity in his own way. It is only a few weeks since there was a great outcry against this crime of spurious condensed milks and the injury that was done to children fed on the adulterated articles. Newspaper editors angrily asked what the Food and Drugs Act Inspectors were doing to allow so scandalous a state of things to exist. It is not the first time that earnest and capable public officials have striven to suppress the practice. Perhaps the Press may now angrily ask how Sheriff Strachan came to give so stupid and ignorant a decision, directly encouraging the sale of substances for use as infants' food, the labelling of which is entirely false and deceptive to the purchaser. It is not a small question, for it is the helpless infant who suffers from these practices, and who grows up rickety and unhealthy through the semi-starvation gone through in infancy by being fed on substances like the condensed milk in question. It is this that makes Sheriff Strachan's decision a very dangerous one. The facts of the case are as follows:—

In the Glasgow Sheriff Court, on October 10, Sheriff Strachan gave his decision in the case in which evidence was led on Tuesday, when Mrs. Mary Scott, grocer, 147, Gloucester-street, was charged at the instance of the sanitary authorities with having, on 20th August, sold a tin of condensed milk, which Mr. Tatlock certified to be deficient in 44 per cent. of natural fat. The tin, which is marked "Cornet Brand," bore in red lithographic printing across the label, "This milk is guaranteed to contain all its original cream," also the words "with sugar."

The Sheriff said that besides the evidence of Inspector Hamilton, who purchased the tin, and of his assistant, who was present with him, the only evidence submitted by the prosecutor was a certificate by the city analyst to the effect that the sample of condensed milk submitted to him was not of the nature, substance and quality of condensed milk inasmuch as it was deficient in its natural fat to the extent of 44 per cent. or thereby. The prosecutor's contention was that under the 21st section of the Food and Drugs Act that certificate was sufficient evidence of the facts therein stated, unless the defendant required that the analyst should be called as a witness, and the respondent did not ask that that should be done. The Act undoubtedly provided that the certificate should be sufficient evidence of the facts stated therein. The facts to be certified were, first, that the substance analysed was a sample of some genuine article; or, second, the parts or ingredients of which the substance was composed; or, third, the percentage of foreign ingredients. In the present case the certificate contained a detailed statement of the ingredients composing the article analysed. The statement that the article analysed was not of the nature, substance and quality of condensed milk because it was deficient in natural fat was clearly not one of the facts requiring to be stated under the statute, and on which the production of the certificate was held to be sufficient evidence. It was a mere matter of opinion on the part of the analyst, but was of no statutory effect or authority. The difference between the article analysed and some other substance not before the analyst was a

matter not falling within the province of the analyst, but required to be determined by the judge before whom the case was tried. He must be satisfied, from a consideration of the whole evidence, that the article sold and delivered to the purchaser was essentially different from that demanded. That was clearly a matter which could not be determined simply by the production of the certificate of the analysis of the article delivered. The analysis of the article was no doubt an important element in the case, and must be held to be conclusive as to the ingredients of which it was composed, but it was nothing more. The difference, therefore, between the two articles not being a matter which the analyst had to deal with in a certificate, could not be held to be established by the mere production of his certificate. It must be proved by evidence in the ordinary way; but, apart from the certificate, there was absolutely no evidence whatever on the subject. He had, therefore, no alternative but to hold that the prosecutor had failed to prove his case. No doubt the certificate bore that the article analysed was deficient in 44 per cent. of what was termed the natural fat of condensed milk, but before he could hold that the article was, on account of that deficiency, essentially different from condensed milk he would require to know by what standard the matter had to be regulated and what was the percentage of fat necessary to the constitution of condensed milk. There were an infinite variety of brands of condensed milk coming here from almost every country in Europe, and almost all differing in constitution. Some of these were made from what was termed full cream milk from which no cream had been extracted, others from milk from which the cream had been partially removed, and a great number of others from mere skim milk. So far as regarded fats, the proportion of the different brands varied from 10 to 2 per cent. All these were in the markets of this country, and were recognised and dealt with under the general name of condensed milk. Assuming that the article demanded by the purchaser in this case was condensed milk, and that, according to the analysis, the percentage of fat in the article delivered was 4.78, how could he possibly hold, in the entire absence of any evidence on the subject, that this article was not condensed milk in the ordinary and mercantile sense of the term, and that in receiving that article the purchaser did not get what he might reasonably have expected to have received under the designation of condensed milk? Before he could do that he would require to have evidence that in order to constitute the substance known as condensed milk there must be a certain percentage of natural fat, and that when 44 per cent of that was absent the substance was not in any reasonable sense, commercial or otherwise, entitled to be called condensed milk. Such evidence was entirely absent in this case. The analyst seemed to have assumed that the purchaser simply demanded condensed milk, and that in answer to that demand the seller was bound to have furnished him with an ideal article made exclusively from the purest cream. But it was clearly established by the evidence that what was demanded was not condensed milk generally, but a well-known and recognised brand of that article, namely, the "Cornet Brand." The purchaser was not an ordinary member of the public, knowing nothing about condensed milk, and relying on the seller to give the highest and best quality of that article. On asking for condensed milk, he was shown a Swiss brand, but he declined that on the ground that it had been already analysed. Then he pointed to or was shown another brand, which he knew to be the "Cornet Brand," and was aware that it was sold at a comparatively low price. That, he said, was what he wanted, and with it he was supplied. Hamilton got the identical article he wanted and deliberately purchased. A very important legal question had been raised—namely, whether the litho-

graphic writing on the label guaranteeing the genuineness of the article protected the respondent from prosecution under the statute; but from the view he had taken of the evidence that question did not require to be determined. He assoiled the respondent.

Mr. John Lindsay, assistant clerk of police, who prosecuted, said that he was instructed by Mr. Fyfe to ask his lordship to state a case for the opinion of the High Court of Justiciary.

The Sheriff said it was a mere matter of fact, but he would consider the application.

Mr. F. B. Richardson, agent for the respondent, asked for expenses, but the Sheriff said it was not customary to allow them in these cases.

As it takes three pounds of ordinary milk to make one pound of condensed milk, and the fat in ordinary milk is nearly 4 per cent., it ought really not to have been too much to expect of Sheriff Strachan's cultured ignorance that he should be mentally capable of reckoning that three fours equal twelve, and that condensed milk should contain nearly that percentage of fat, instead of less than 5 per cent. of fat. Substances containing less than the percentage stated should be labelled "condensed roguery" rather than condensed milk.

THE MILK SWINDLE SPREADS.

A FORTNIGHT ago we showed how Somerset House gave *carte blanche* to milk adulteration. Their unscientific and inaccurate analyses, however, impress magistrates, and the result must be that local authorities, finding themselves and their officials shamefully treated by the *ignorami* at Somerset House, will be compelled to let milk adulteration go on as the milk vendor pleases. It is very bad for the public, and for honest dealers, that such should be the case, but when the evidence of experts of world-wide reputation is brushed aside and held as unworthy of credence when contrasted with that of a couple of persons undistinguished in any branch of science, who happen to be called Government chemists, it is plain that we have got milk adulteration to a point where fraud has a free hand, assisted as it is by Government chemists' ignorance. The following is the latest case in which Somerset House distinguished itself:—

On the 14th inst., at Highgate Petty Sessions, came on for hearing the case of *Bridge v. Lane*, being a case adjourned from the 23rd of September in order to obtain a report of the analysis of the referees at Somerset House. The summons was that Frederick Turner, in the employ of the Manor Farm Dairy Co., Ltd., Highgate, unlawfully sold to the said Arthur Liddell Bridge a certain article of food which was not of the nature, substance and quality of the article demanded, but consisted of new milk adulterated with 8 per cent. of added water. Mr. A. H. Bodkin, barrister, appeared on behalf of the County Council, and Mr. Ricketts defended. In opening Mr. Bodkin said that he appeared to prosecute in the case on behalf of the County Council, who were determined to stop the adulteration of milk in the county if possible. He had a copy of the Somerset House certificate, and he must call the attention of the Bench to the meagre details given therein—they gave simply the solids, fat, and solids not fat, no mention being made of either specific gravity or ash, both of which were of the utmost importance in the analysis of milk for added water. He was given to understand that they could not estimate the specific gravity of milk after it had undergone change in keeping, yet here were analysts, appointed as referees, stating that after making allowance for loss by keeping they were of opinion that the sample submitted to them afforded no evidence of added water. He had before

him evidence given by one of the gentlemen who had signed the certificate that 2.75 was the standard of fat fixed by the referees at Somerset House, and as a fact they returned the sample as a sample with added water, whereas the fat was low, considerably lower than the limit mentioned—a most unfair thing. Again, here we have as a fact that they send a certificate worded so vaguely that it is impossible to follow it in a reasoning calculation. They do not say the sample is not adulterated, they simply say it affords no evidence of added water; further, it is accepted that the Somerset House certificate is not in any sense a final matter; it is a fact, or series of facts, that the magistrates have to give judgment upon, and they have to give due weight to external evidence offered, either on behalf of complainant or defendant. Hence this morning I shall call before you gentlemen of the first eminence to give evidence—they have, in fact, examined the milk in question, Mr. Bevan having taken the precaution to add a preservative. It may be asked by the defendant, why are not the referees here? Well, we gave them notice to attend. Mr. Ricketts here asked for an adjournment for this purpose, but the Bench said the case must go on. Mr. Bodkin: I may point out to your worships the section under which the analysis of Somerset House is made, Section 22, and they are required to give (mark the words) a certificate of the analysis. In exact words it reads:—

“The Justices before whom any complaint is made, or the Courts before whom any appeal may be heard under this Act, may, upon the request of either party, in their discretion, cause any article of food or drug to be sent to the Commissioners of Inland Revenue, who shall thereupon direct the Chemical Officers of their department at Somerset House to make the analysis, and give a certificate of the result of the analysis; and the expense of such analysis shall be paid by the complainant or the defendant, as the Justices may by order direct.”

Now, let me ask, Have we got a certificate of the result of the analysis? I say we have not got what the Act directs we shall have—that is, the result of the analysis of this sample of milk. They say in the certificate they have made an addition—what addition? They give us absolutely no figures. They have added something, but what? Is that a result of the analysis, that they add something on to the analysis that they cannot find? Surely not. It is the result of the analysis of the milk that we require; not a hypothetical addition of something that is not there. The certificate is bad also from the fact that they give more than they are directed by the Act of Parliament to give. They offer observations, which are entirely out of place. They are only to give the result of the analysis. I shall now proceed to call my witnesses.

Mr. Bridge deposed that he was Inspector of Weights and Measures for the Eastern District of the Middlesex County Council, and that he met the defendant in Southwood lane, Hornsey, on the 2nd of September. He asked him for one pint of new milk, for which he paid twopence, and then said, “The milk is for analysis by the Public Analyst. You may have it divided into three parts, if you like.” He replied, “Yes, please.” The milk was dealt with in the manner prescribed by the Acts. He, on the 23rd of September, handed the third part into the hands of the Court, and, at the request of the Clerk, took it to the referees at Somerset House. I was accompanied by my assistants.

Mr. Ricketts: I have no questions to ask.

Mr. Bevan, the Analyst to the County Council, gave evidence, and said, “The figures of my analysis are as follows:—

Fat	-	-	-	-	3.55	per cent.
Solids, not fat	-	-	-	-	7.86	”
Ash	-	-	-	-	.663	”

And I am of opinion that the sample contains 8 per cent. of added water. The ash of milk rarely falls below .7 per cent., and it is a suspicious point when it does. I do not think the referees can ascertain the ash after a sample of milk has undergone change. I also found boric acid and colouring matter.”

Dr. Stevenson, of Guy's Hospital, next gave evidence, and said he was of opinion that the milk was adulterated, and that it did contain 8 per cent. of added water. He had examined the milk in question, and found boric acid and colouring matter.

Dr. Hehner, analyst for the Isle of Wight, etc., said he, too, was of opinion that the milk was adulterated. He had examined the sample, and was of opinion that it contained 8 per cent. of added water, and found boric acid and colouring matter.

Mr. Ricketts called no evidence, only producing the certificate of Thos. W. Freeman, a chemist and druggist, of East Finchley, that the results of his analysis were as follows:—

Fat	-	-	-	-	-	3.6
Solids, not fat	-	-	-	-	-	8.44
						12.04

I am of opinion that the sample is not adulterated; and I must say I did not know that I should have to face such an array of experts, or Mr. Freeman would have been here. As Mr. Bridge said, and it is true, he is only a local man, and in addition he is F.C.S., which is something; and I ask you to give credence to the certificate.

The Bench, after consideration, decided to dismiss the case.

Susie Sulston, in the employ of the Manor Farm Dairy Co., was charged that she unlawfully sold to Arthur Liddall Bridge, the purchaser, a certain article of food which was not of the nature, substance and quality of the article demanded, but consisted of milk adulterated with 10 per cent. of added water.

Mr. Ricketts said he would shorten the case and admit the offence, the fact being that the cowman had stolen the milk and then added the water. He said the case need not be proved, as he admitted the matter was as stated in the summons.

Mr. Bridge: The case is important, as the milk in the last case and the milk in the present was purchased from the servants of the same Company, only half-an-hour being the interval between the two purchases. He purchased the sample in question from the defendant, who was in charge of a shop of the Company's at 26, High-street, Highgate. She said she was only there temporarily. He paid twopence for the milk, and gave notice of his intention to submit it for analysis. He divided it into three parts by request: he produced the third part in Court.

Mr. Ricketts: I have no questions to ask.

Mr. Ricketts, in reply, said they were the victims of circumstance in this case, and they were bound to accept the charge, Mr. Lane, the proprietor, having caught the cowman in the act of adulterating the milk, but only discharged him six days after.

Cross-examined by Mr. Bridge, the last case and the present were not the same milks, this being County milk.

Mr. Bridge: Now be careful. Have you on your premises such a thing as a separator—that is, a machine for taking off the fat from milk by mechanical means.

Mr. Lane (after some hesitation): Yes, we have.

Mr. Bridge: I have no further questions after that admission.

Mr. Ricketts here asked for a small fine, it being the servant who was summoned; and he called their worships attention to the summons. He said that the

summons was only a side slap at the Company, and really stopped their producing a warranty.

Mr. Bridge here interposed, and said he had done it for that very purpose, and disclaimed nothing. If the Company had helped in time past it would not have been done; but were the records at his office produced they would find time after time this very Company had produced a warranty, and thus got off—they usually applying for an adjournment, which had always been granted, notwithstanding the protests of himself, thus the time allowed by the Act expired, that is 28 days, and they could not even prosecute the warranty given, hence the present mode of procedure.

The Bench: We inflict a fine of £5 and the costs.

ADULTERATION IN DERBYSHIRE.

MR. JOHN WHITE, F.I.C., in his quarterly report says:—

I have the honour to report that during the quarter ending September 16th, 241 samples of food and drugs have been submitted to me for analysis, as follows:—60 by Captain Sandys, 60 by Colonel Shortt, 60 by Mr. F. A. Shortt, and 61 by Inspector Hewitt.

The samples consisted of the following articles:—milk, 45; skim milk, 1; condensed milk, 1; butter, 47; lard, 9; coffee, 22; mixed coffee, 2; bread, 2; flour, 7; oatmeal, 14; arrowroot, 6; mustard, 6; pepper, 3; Demerara sugar, 2; ground rice, 2; caper tea, 2; ground ginger, 8; vinegar, 4; whisky, 18; brandy, 2; rum, 6; gin, 3; tincture of rhubarb, 12; paregoric, 2; tincture of quinine, 1; precipitated sulphur, 5; cream of tartar, 3; bicarbonate of soda, 2; olive oil, 1; glycerine of carbolic acid, 1; proof spirit, 1; physician's prescription, 1. Eight of the forty-five samples of milk proved to be adulterated; two by the addition of water, the respective percentages added being 12 and 15, both bad cases; while six were deficient in cream, the amounts of such deficiency varying from 12 to 33 per cent. Besides these, no less than ten other samples were of distinctly low quality. The sample of skim milk had been adulterated with at least 7 per cent. of water. As was the case in the preceding quarter, the milk samples have again given unsatisfactory results. The high proportion of 20 per cent. of the samples submitted during the past six months have proved to be adulterated, while a number of other samples, equal to a further 20 per cent. of the whole, were of low quality.

One sample of butter contained too high an amount of water, the quantity present being 18.5 per cent. I may repeat that the percentage of water in butter should under no circumstances exceed 16 per cent., while if the butter be properly and carefully prepared, it will not contain much more than 12 per cent.

Two samples of coffee were adulterated with chicory, the quantity added being 15 per cent. to the one and 45 per cent. to the other. Two other samples were submitted as "mixed coffee," the object being to ascertain the percentage of chicory present, and if excessive, to proceed against the vendor for fraudulently increasing the bulk of the article. The amounts of chicory present proved, however, to be comparatively small, viz., 15 and 20 per cent., and no proceedings followed.

I reported the whole of the fourteen samples of oatmeal to be genuine, though eight contained slight traces of barley meal. It is very probable that this was due to accident, for, from obvious causes, such slight contamination as this might easily occur.

One sample of mustard contained 5 per cent. of wheat starch, and was consequently certified to be adulterated.

Four samples of whisky and two of rum had been adulterated with water over and above the amount required to reduce them to the minimum strength laid

down by the Act. Three of these contained 5 per cent., and the other three 7 per cent. of such extra water. In addition to these, eleven other samples of spirits were slightly below the standard, though I passed them as genuine.

Three of the twelve samples of tincture of rhubarb proved to be adulterated. One was deficient of 25 per cent. of proof spirit, another of 20 per cent. of its solid ingredients, and a third of 20 per cent. of proof spirit and 50 per cent. of its solid ingredients. They were each also devoid of saffron, which is far the most expensive ingredient of the tincture. It is a satisfactory fact that, with the exception of these three, all the samples of drugs submitted during the quarter were genuine, and a prescription which was sent to a druggist was accurately dispensed.

The whole of the other articles were genuine. The total number of adulterated samples was twenty-two, which gives a percentage of adulteration of 9.1, as compared with 8.2, which was the figure for the previous quarter.

During the quarter, one sample has been submitted to me under the Fertilisers and Feeding Stuffs Act. This was a sample of artificial manure, which, however, proved to have practically no manurial value.

ADULTERATION IN BRADFORD.

At Bradford, on October 10, Thomas Baxter, farmer, of Langar, near Nottingham, was summoned at the instance of Inspector Rhodes for having sold milk to which water had been added.—The Town Clerk (Mr. W. T. McGowen) prosecuted, and the defendant, for whom his son appeared, was not represented by solicitor.—Mr. James Freeman appeared to watch the case on behalf of the Callow Park Milk Company, to whom the milk had been supplied by the defendant.—The Town Clerk said the company, who had acted with great fairness towards the public of Bradford, and had done their best to supply a good and pure article to their customers, had had a contract for the supply of milk to them from the defendant's farm. Although for a time they had good reason to be satisfied with the defendant's milk, they recently began to have misgivings as to its quality, and, having an analyst of their own, they had samples of it analysed. They then found that it was being adulterated, and thereupon they came to the Corporation to set in motion the provisions of the Acts relating to adulteration. An officer was then despatched to Barnstone, a station near Nottingham, where the defendant's milk was delivered for transmission to Bradford, and he took precautions so that the milk should arrive in Bradford in precisely the same condition as it left Barnstone. This officer then travelled to Bradford by the train which brought the milk, and when it got here he took samples at the railway station at the moment of delivery. These samples were taken on September 25 and 26, and were afterwards analysed by the Borough Analyst, with such results that he felt justified in appealing to the Bench to inflict in this case the maximum penalty of £20. The Corporation took all the precautions that they could possibly take, and it rested with the Bench to say whether nefarious practices of this sort should be left to be carried out with impunity.—Inspector Rhodes described the process by which he had sealed the cans containing the milk from which the samples in question had been taken, and had prevented any possibility of interference on the way from Barnstone to Bradford. He produced the labels which described the milk as "pure new milk with all the cream," and the certificate of analysis from Mr. F. M. Rimmington, the borough analyst, showing that in the three samples of milk water was added to the extent of 27.8, 17.5, and 12.3 respectively.—The

defendant's son stated that his father was 73 years of age, and was too infirm to travel. He had commenced to send out milk ten months ago, and had not had the slightest complaint until the present occasion. On September 25 he (the son) went away to a fair, and left in charge of the place a younger brother, who, through having had scarlet fever, was now of rather weak intellect. He had trusted to this brother, and had never seen the milk from which the samples had been taken.—Mr. Skidmore: Do you mean to say that your brother having a weak intellect supplied weak milk, because if that is so a more lame excuse I never heard of?—The Town Clerk: The company had previously had the milk analysed.—Baxter: I mean that he did not understand the serious nature of what he was doing. If he had had a better intellect he would not have done it. He said it had not been tampered with at all, but I am very sorry.—Mr. Freeman said his clients contracted for pure new milk with all the cream on, and paid a good price for it on that understanding.—The magistrates inflicted a penalty of £5 and £1 9s. 8d. costs in each of the three cases, with the alternative of 15 days' imprisonment in each instance.—Baxter: It is a great deal more than we can afford to pay; it will almost ruin my father.—Mr. Skidmore: It is a very light penalty.

THE COFFEE ADULTERATION QUESTION.

AT Much Hadham petty sessions, Joseph Houghton, of Little Hadham, grocer, was charged with selling to the prejudice of the purchaser coffee, not of the nature, quality, and substance demanded, but adulterated with 50 per cent. of chicory, on August 23rd. Defendant said he believed the charge was true. It was through the negligence of his assistant; it was not his wish. Mr. Thomas Johnson, of Hertford, inspector for Herts under the Food and Drugs Act, said the proceedings were taken under section 6 of the Food and Drugs Act, 1875. As to any negligence of defendant's servant he cited *Brown v. Foot* to show that a master was liable, and, therefore, Mr. Houghton was liable for the act of his servant. Henry Row, of Hertford, assistant to Mr. Johnson, said: On August 23 I went into Mr. Houghton's shop for 6 ozs. coffee and paid 4½d. I was prepared to pay any price that was demanded, and did not ask for coffee at any particular price; the assistant served me: that (produced—a piece of plain paper) is the paper it was wrapped in. The assistant did not say anything at all to me when he handed it about its being a mixture. I brought it out to you (Mr. Johnson); we went back together into the shop, and Mr. Johnson said "I have bought this coffee for the purpose of having it analysed by the public analyst" (to Mr. Houghton), and offered to divide it into three portions, and he divided it: one portion he gave to Mr. Houghton, and two he brought away. When he offered to divide the coffee Mr. Houghton said, "You have got me this time." Mr. Houghton was in the shop when I bought it, and could hear what I asked for. To Mr. Shoobridge: The assistant took it from a tin on the counter; there was "Coffee" on the tin, nothing else. I did not see a tin marked "Chicory." Mr. Johnson: Was there anything at all on the tin to indicate it was a mixture of chicory and coffee?—Witness: Not to my knowledge; if there had been I should have seen it. Mr. Shoobridge: Was anything said about the chicory?—Witness: No, sir: (by Mr. Norman): I did not know when I asked for coffee what I should have to pay for it. Witness (cross-examined by Mr. Houghton): Your assistant did not say "Will the shilling do?"—(meaning coffee at 1s. the lb.)—Mr. Norman: You are sure of that?—Witness: Yes, sir, I am sure. Thomas Johnson said: On August 23rd I instructed the last witness to go to Mr. Houghton's shop for 6 ozs.

of coffee; he brought out a package to me and we immediately returned into the shop. I told Mr. Houghton I had bought the coffee for the purpose of having it analysed by the public analyst; he at once said "That's a mixture." I divided the sample into three portions, left one with him, one I produce, and one I took to the public analyst on August 29th. In the time I was dividing the sample Mr. Houghton said, "You've got me this time." This is the certificate I have had from Mr. Ekins, the public analyst—the county analyst—showing there was in the sample 50 per cent. of chicory and 50 per cent. of coffee; the package the witness brought to me was in this plain piece of paper—nothing to indicate it was a mixture. Mr. Shoobridge asked what was a fair price for coffee? Mr. Johnson said from 1s. 4d. a pound, upwards, but, although he only paid what he did in this case, yet he was prepared to pay anything that was demanded. (To Mr. Norman): The price was a fair price, but the article was not what was asked for.—Mr. Johnson also explained that Mr. Houghton's words "You've got me this time" referred to former purchases by him at Mr. Houghton's when he had not found anything wrong. Row, in answer to the Bench, said he did not know what Mr. Houghton was doing whilst witness was in the shop. Mr. Houghton said that his assistant ought to have wrapped the coffee up in a paper like that produced (yellow, on which was printed that the contents were sold as a mixture of chicory and coffee). Those papers were hanging up close to hand, and his assistant should have used one. The coffee and chicory cost him at the rate of 10d. a pound, and he sold it at 1s. Mr. Shoobridge (the Bench having returned from consulting) said: You have offended against the Act, Mr. Houghton. It is not a very bad case, but we must fine you. You will be fined £1—it might be £20—and 9s. 6d. costs. Mr. Johnson said he had been instructed to apply for the analyst's fee, 10s. 6d. Mr. Shoobridge: The county will pay the analyst. (To defendant): Had you not better have your tin marked "Mixture?" Mr. Norman said if the coffee had been in such a paper as defendant produced (marked chicory and coffee) that would not have excused him, according to a report they had before them. A man was entitled to have what he asked for. The report referred to by Mr. Norman is *Liddiard v. Reece* (Queen's Bench), given in the *Justice of the Peace*, April 10th, 1880, page 233. Reece asked for "coffee"; defendant charged the price of pure coffee; when Reece said it was bought for analysis, defendant pointed out a "chicory and coffee" label. There proved to be only 60 per cent. of coffee. The Justices convicted; defendant appealed, but Mr. Justice Lush and Mr. Justice Manisty held that the label did not protect the defendant, and confirmed the conviction.

THE ALUM ANOMALY.

AT the Pontypridd Police-court on October 9, before Mr. James Roberts (presiding), a grocer from Ferndale, named John Ford, was summoned, under the Food and Drugs Act, with offering for sale biscuits containing ingredients which were injurious to health, on the 7th ult. Mr. W. E. R. Allen, the county solicitor, prosecuted, and in opening said that although it might be counted hard to the bench that a grocer in a small way should be summoned for selling biscuits he did not manufacture himself, yet the public were bound to be protected against the sale of inferior and unwholesome goods.—Deputy Chief Constable Jones deposed that on the 7th, he visited the defendant's shop and purchased a pound and a-half of brown biscuits. He divided them in three parts, and gave one to the defendant, saying, "I am going to send one part to the Public Analyst to be analysed." He had since received a copy of the analyst's (Dr. Clarence Seylor) report,

which showed that the biscuits contained alumina compound derived from the addition of alum and equivalent to 80 grains of alum per pound, which admixture was injurious to health.—Mr. Allen said that he would like to have the defendant in the box, so that they might trace the origin of the biscuits.—The Bench readily agreed, and on being sworn, Mr. Ford said that he purchased the biscuits from Messrs. Dunmore and Sons, Leicester, through their traveller, Mr. Clarke. The biscuits were forwarded to him, and he thought they were quite wholesome. After the Deputy Chief visited his premises, he sent a letter to the firm acquainting them of the fact, and in reply he received a letter stating that he had nothing to be afraid of, as their goods were all warranted, and that they would protect him. The traveller told him that the biscuits were pure.—Mr. Roberts: But it has been shown by the Public Analyst that they were not pure.—Mr. Allen said he did not press the charge against Mr. Ford. The Press would make known their worships' decision, and shopkeepers would be warned. The county had been put to a good deal of expense in this case, and the costs amounted to £3 5s. He wanted to warn people that they could not sell any article of food to the public.—Mr. Roberts, in addressing the defendant, said the bench felt they would not be justified unless they protected the public against the sale of impure food. He (Mr. Roberts) hoped he would be able to bring the case home to the people he had been dealing with. The letter they sent him was not to the credit of any firm, as they treated the matter so lightly. They could not do anything else than fine him £5 including costs. He hoped that the firm would think of the matter, and that it would be a warning also to traders like himself. They should either deal with firms of long standing, or take care to see that the goods they got were wholesome. The magistrates sympathised very much with him, but they could not impose a smaller penalty.

THE VALUE OF A "SCIENCE SIFTINGS" CERTIFICATE.

SOME weeks ago *Science Siftings* published what purported to be analyses of mustard, and bestowed upon Colman's one of those imitations of the late W. G. Baxter's clever drawing, "Ally Sloper's Award of Merit," which our snippet contemporary bombastically calls a "Certificate of Merit." As there was much eulogy of Colman's mustard preceding the conferring of the certificate *à la Ally*, it must be rather awkward for *Science Siftings* and its certificates that on October 4th, Rupert H. Marshall, chemist, of Long Eaton, was summoned at Derby by Captain Sandys, inspector under the Food and Drugs Act, for selling mustard which contained at least five per cent. of wheat starch. The inspector sent a man named Hewitt to buy the mustard, and afterwards defendant was informed that the sample had been taken for analytical purposes. The sample was divided in the usual way, and a portion was sent to the county analyst, Mr. John White, F.I.C., who certified that it contained at least five per cent. of wheat starch. Mr. John White, county analyst, gave a report of his analysis.—In cross-examination he admitted that it was said by some that the addition of wheat starch to pure mustard rendered it more palatable and more likely to keep. These were statements made by interested persons, and he entirely disagreed with them.—Mr. Stone, who defended, said the mustard was measured by the defendant out of one of Colman's mustard tins, and on the label it was stated that the mustard was slightly mixed with wheaten starch by the manufacturers, so that it would be better in colour and keep its good condition longer. The starch was of the same value as the mustard. Mr. Marshall was called and stated that he sold the

sample in the same condition that it came to him. The Bench, after considering the case in private, decided to convict, and imposed a fine of 1s. and costs 25s. They acquitted the defendant of any intention to defraud.

Our readers are too intelligent to need telling that it is a lie to say that starch is of the same value as mustard. Twopence per pound is the outside value of starch, whilst mustard costs six or seven times as much. As to the lie about wheat starch being necessary to make mustard better in colour, and to keep it in good condition, we need only mention that there are firms who do not add colouring or wheaten starch, and who sell pure mustard. We notice that Van Houten's Cocoa was refused one of these *Science Siftings* humbugging certificates. As Van Houten's Cocoa is one of the very purest articles offered to the public, the above facts may explain why it escaped the very questionable honour of a *Science Siftings* impertinent award *à la Ally Sloper*.

Possibly, in the light of these facts, the few reputable firms who have been induced to accept the certificates will consider if it would not be more dignified to bundle them incontinently back to the *Science Siftings* office.

SPURIOUS VINEGAR.

AT Trowbridge, on October 8th, Joseph Pike, Mortimer-street, was summoned for having sold adulterated vinegar. Defendant said the vinegar was sold by his wife. He did not know there were two sorts of vinegar, and he would have sold it in the same way. They had never been asked for malt vinegar before, although he had sold vinegar for a good many years—in fact, ever since he had kept a shop. Mr. F. Beardsley said the meaning of the word vinegar appeared to have been somewhat stretched, and was applied to anything sour. There was a distinction in vinegar. Pure vinegar was prepared from an infusion of malt, the acid being legally obtained from a moisture of malt, whilst artificial vinegar was prepared from wood and other ingredients. He always requested persons who purchased vinegar to ask for malt vinegar. In that case, malt vinegar was asked for, but wood vinegar was sold. Ernest Thomas said he purchased a pint of vinegar from Mrs. Pike on the day mentioned, and he handed it to Mr. Beardsley at the door. Mr. Beardsley deposed that he forwarded a sample of the vinegar to the county analyst, who had certified that it was not pure vinegar. In reply to a question by the magistrate (Mr. Walker), witness admitted that there was no standard of purity for beer, and there was no law to say that beer should be made from malt and hops—in fact, there was no definition at all. They only took proceedings in cases where the adulteration was injurious to health. Defendant again contended that he had never sold any other vinegar, and that he did not know there was any difference until informed to that effect by the inspector. He had always bought it from one place, and he had a very good name for it. In future if asked for malt vinegar, he would say he did not keep such a thing. The Chairman of the Bench (Mr. J. P. Stancourt) said they believed defendant did not know he was doing wrong, and they dismissed the case.

PAUPERS AND TINNED MEAT.

At the weekly meeting of the York Board of Guardians, on October 10, a motion was brought forward by Mr. Petch, a country guardian, to the effect that the use of tinned meat in the workhouse be discontinued. He remarked that the present practice was not just or fair to the ratepayers and the guardians. A great proportion of the guardians were manufacturers of beef—

(loud laughter)—for they had butchers on the Board who dealt in it. He went on to question the wholesomeness of tinned meat, and amidst some signs of impatience referred to a case in which about a dozen persons were taken seriously ill after eating it. They paid 4½d. per lb. for tinned meat and 5½d. for fresh, and he ventured to say that in the case of the former the tins were always weighed in. (Laughter, and a voice: "No bone.") It appeared they preferred tins to bone. (Renewed laughter.) The motion was seconded by Mr. Carter, and supported by Mr. C. Harrison.—Alderman Agar opposed the motion from an economic point of view. Other members having spoken, the motion was put, and lost.

The decision may be a commendable one from the point of view of corpsing the unwanted, if that be what the York Board of Guardians desire; but if it be a question of value for money, it is a very foolish policy to buy tinned meat even for paupers. Apart from its insipidity, the meat being fibrous, loose, and not easily masticated, it is permeated with gelatine the nutrient value of which is very doubtful. Such overcooked substitutes for luscious fresh meat may be put up with by Arctic explorers and the like, who cannot procure the fresh article, but it is stupidity to pay 4½d. per lb. for tinned meat when fresh meat can be had at 5½d. per lb., for the latter is worth more than the difference in price by reason of its increased nutritive and health values. But, as we have said, it may be that the guardians regard the paupers as "rubbidge" to be corpsed as rapidly as possible. If such be the case, tinned meat plus chance ptomaines may be a good investment.

ADULTERATED TINCTURE OF RHUBARB.

At Wirksworth on Oct. 8, Samuel Swan Fearn, of Brassington, grocer, was summoned for selling to Capt. Sandys, the inspector under the Food and Drugs Act, three ounces of tincture of rhubarb, which was not of the quality demanded, in that it was deficient of at least 20 per cent. of its solid ingredients, and was practically devoid of saffron.—Complainant stated that on the 9th of August last, he called in defendant's shop at Brassington, and purchased three ounces of tincture of rhubarb, for which he gave sixpence. He gave notice that the drug would be analysed, and then divided the sample into three parts. One he returned to Mrs. Fearn, who waited upon him, another he retained himself, and the third was sent to the public analyst, Mr. John White, F.I.C., on the 14th August. Complainant now produced the certificate from the public analyst, from which it appeared that the tincture of rhubarb was devoid of saffron. Defendant made a statement to the effect that his wife, who served the article, was not used to waiting in the shop. The bottle in which the drug was kept had been purchased eight years previously, and the only quantity sold was the sample in question. He produced a letter from the druggists from whom it was purchased, stating that they had no doubt that during the eight years' time the tincture of rhubarb had depreciated.—Fined 1s. and £1 4s. 3d. costs.

THE AMATEUR INSPECTOR IMPROVES.

At Liverpool, on Oct. 14, Walter Weston, grocer and provision dealer, West Derby, was summoned for selling as butter an article not of the nature, character, and substance demanded. Mr. Cornett appeared for the prosecution which was instanced by an inspector of the Royal Lancashire Agricultural Society, appointed in conjunction with the County Council. On Sept. 23 the inspector visited defendant's shop and saw five butter dishes, one labelled "Prize Dairy," another "Full of cream," and a third "Finest quality im-

ported," whilst the two others were described as margarine. He obtained samples and submitted them to the public analyst, who reported that the first contained 11½ per cent. of water and upwards of 65 per cent. of foreign fats; the second 11½ per cent. of water and 70 per cent. of foreign fats; and the third 9 per cent. of water and upwards of 70 per cent. of foreign fats. A fine of 40s. and costs was imposed.

ADULTERATION IN LEEDS.

MR. THOMAS FAIRLEY, the city public analyst, has to lament the fact that Somerset House shields and encourages milk swindling. In his report just issued of analyses made during the past quarter, Mr. Fairley says:—"There were analysed: milk 64, pepper 2, tincture of rhubarb 4, cocoa 2, olive oil 1, chewing gum 1, total 74. One sample of milk was adulterated with eighteen and a-half per cent. of water as compared with the lowest quality of genuine milk, and no less than twenty-two were reported as of low quality. There is no doubt that many, if not all these samples were adulterated with water to the extent of ten to fifteen per cent. as compared with milk of average quality. Owing to the low standard adopted at Somerset House, these samples have to be passed, to the serious loss of the public and the honest milk dealer. When samples of the same milk can be taken by the inspector direct from the cows, analysis can prove the addition of even one per cent. of water, and I suggest that the vendor of poor milk should escape a fine only by giving every facility to the inspector to take direct samples, so as to discover the cause of the pooriness of the milk, and that local authorities should have power to follow the milk to its origin for this purpose. As regards price, such poor milk should be sold at about twenty-five per cent. under the price charged for genuine average milk. Three of the samples of tincture of rhubarb were reported to be deficient in alcohol to the extent of about one-third of the proper amount. This deficiency was no doubt due to evaporation and not to the addition of water. The other samples were reported genuine.

MR. STEVENS AGAIN.

MR. STEVENS has succeeded Mr. Wm. Brown in the rôle of claiming the penalty of the highest consideration on each occasion when he is presented at court. His last escapade was at Southwark, on October 9, when he was described as Thomas Stevens, milk seller, of Swan-place, Old Kent-road. Mr. Thomas, chief sanitary inspector of the Bermondsey Vestry, summoned him for selling skimmed milk containing eight per cent. of added water.—The case had been adjourned for a second analysis, which did not relieve the defendant of his difficulty.—The defendant pleaded that the milk was scalded, and the condensed steam got into it; also that it was the same as he received it from a dairyman at Semley, Dorset, with whom he had dealt for five years.—There were several previous convictions against the defendant, and the magistrate now fined him £20.—The defendant asked for time to pay the penalty, but the prosecutor objected, and stated that the defendant was selling milk all over London.—The magistrates ordered the defendant to pay the money, or to go to gaol for a month.

MARRIAGE OF MILK AND WATER.

At the Pontypridd Police-court on October 9th, before Mr. James Roberts (presiding) and other magistrates, James Williams, milk vendor, Cwmparc, was summoned for selling adulterated milk.—Deputy Chief Constable Jones said that on the 30th of August he purchased from the defendant's wife a glass of milk. He divided

it into three parts, and on offering her one part she refused to take it. He sent one part to the Public Analyst at Swansea (Dr. C. Seylor), and received a report showing that the milk contained 92 parts of genuine milk, and eight parts of skim milk. It was deficient in strength to the extent of eight parts. He also purchased a pennyworth of milk from another can belonging to the defendant. The analyst's report on that showed that it contained 18 per cent. of extraneous or added water.—In reply to the chairman, the defendant's wife said that she did not purchase any milk, but always kept her own cows.—The Chairman said that the Bench were inclined to deal lightly with the first case. But the second case made it very serious. It showed that she was adulterating milk, which was now an article of diet, and used so largely in feeding children. It was really a crime pretty well, that people could not obtain pure milk. The county had been put to a considerable expense in bringing the case forward, and the Bench did not consider that they could do less than impose a fine of 10s. and costs, which amounted to £3.—Defendant's wife: I have been selling milk for 28 years, and never been charged before.

PROTECTING THE POOR AT WEST HAM. DILUTED MILK.

JAMES PHILIP CHILD, of 8, Ingal-road, Plaistow, was summoned at the instance of Dr. Charles Sanders, medical officer of health for West Ham, for selling adulterated milk on September 3.—Edward Carey, assistant in the sanitary department, went to the defendant in Barking-road, and bought a pint of milk, for which he paid 2d. He handed it to Inspector Smith, who, at the defendant's request, divided it into three parts. One was sent to the public analyst, who certified that it contained 6 per cent. of added water.—Defendant pleaded that he sold the milk as he received it, confidently believing it was pure. He admitted a previous conviction, and he was fined £4 and £1 7s. costs, or a month.—John Hyde, 56, Ordnance-road, Canning Town, was summoned for a similar offence, the certificate showing that the milk contained 9 per cent. of added water.—He pleaded guilty, and was fined £3 and 17s. 6d. costs, or a month.—Kate Morris, of 85, Croydon-road, Plaistow, who was summoned for a similar offence, pleaded that the milk was sold as "separated" milk, but the certificate showed that about one-third of the cream had been left with the milk, and water to the extent of 12 per cent. had been added.—Defendant, who said she never put a "drain of water" in the milk, was fined £1 and £1 6s. costs, or 14 days.—George Henry Willis, of 2, Warmington-street, Plaistow, pleaded guilty to a similar offence, the certificate showing 15 per cent. of added water.—He was fined £3 and 17s. 6d. costs.

CIMEX LECTULARIUS AND PHTHISIS.

PARISIAN scientific circles are exercised over the discovery that bedbugs are active agents in the transmission of the bacillus of tuberculosis from one person to another. This should at once dispose of the use of the old clumsy wooden structure and favour the introduction of the iron bedstead. This discovery need not, however, prevent our millionaire heiresses from consummating marriages with French counts and others of the old nobility, as the ample means that our American women carry over with them will enable them to send the escutcheoned four-posted old ancestral bedbuggy bedstead formerly employed by the count to the second-hand store around the corner, while its place will be filled either by the polished brass or a white japanned iron bed-frame.—*National Medical Review*.

Next will come the bacillus bedbugosis!—*North American Review*.

[Or the Bacillus Bombastes Smithiensis.—ED. FOOD AND SANITATION.]

THE BREWERS SAY THERE IS NO BEER ADULTERATION!

AT Stratford Police-court last week Richard Clark, of the Hare and Hounds Inn, Lea Bridge-road, Leyton, summoned by the Excise authorities for diluting beer with water on July 30th, was fined £50 and costs, in default of distress a month's imprisonment.—Mary Ann P. James, of the King William the Fourth, High-road, Leyton, for a similar offence was fined £40, in default of distress a month's imprisonment.

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

BY ALEX. J. WEDDERBURN.

(Continued from page 315.)

IN many cases the masquerader usurps the market and destroys the genuine article. Honest business is thus demoralised, and when our products seek a foreign market they are met by the foreign inspector, who at once discovers the fraud and advertises to the world our people as a set of swindlers, and our Government as the abetter and aider in the crime, because it fails to do as all other civilised and Christian lands do, viz., see that the products sold to the people are branded true to name. Repeated instances of exposure of fraud in American food products have been made in Europe and South America. The result has been to greatly restrict trade with our neighbours—trade essential to the material prosperity of our agricultural interests. Proof of this interference with American exports is ample, and data could be secured to fill a volume, but I deem such matter unnecessary. I quote, however, from the *Baltimore Sun* the following extract, contained in an article written for that paper by Professor William P. Tonry, one of the most eminent analytical chemists of the country, which goes to show what effect adulteration has in shutting out our commerce from the nations of the world in even so comparatively insignificant an article as candy:—

"As to the commercial results of the adulteration of candies, a confectioner whose reputation for absolutely pure confectionery is unquestioned, told me that his sales per annum did amount to 96,000 dols., of which about 40,000 dols. were export trade to South America, West Indian and Mexican ports. Philadelphia, New York, and Boston houses entered the same field, and, placing their goods at a lower figure, did for a short time supply a good article, but soon replaced it by the adulterated. The result was that the customer refused to have the American article at any price, and the local Spanish dealers now send to Barcelona, Spain, for a pure candy. The less discriminating consumers here give preference to adulterated articles, which can be purchased cheaper, and thus 40,000 dols. export trade and 50,000 dols. home trade are the penalty one house alone has had to pay for adherence to unadulterated goods, while the commercial reputation of the United States has been very much depreciated, if not entirely blasted."

It is claimed that the Federal Government has no right to interfere with what a man buys or sells, no right to interfere with what he eats or drinks, or to bother as to whether he deceive his customer or not—that all such questions are to be decided by the several States and the individuals themselves. It may be true that the Government has no right to interfere in these matters, but when, from the very nature of the Constitution, Congress alone can enable the States to enforce their own laws, such legislation should be enacted as will permit them to make effective laws enacted by their legislatures. Congress alone has power to regulate commerce between the States, and until it enacts laws providing for the prevention of the transportation from one State into another of the adulterated food and drug products no State law can be enforced.

(To be continued.)

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Food and Sanitation.

SATURDAY, OCTOBER 26TH, 1895.

THE FUTILITY OF FINES FOR MILK ADULTERATION.

AFTER all the public money that has been spent in procuring samples, having them analysed, and bringing offenders before the magistrates, it might reasonably be expected that this very cruel fraud would have received a serious check, but it must be admitted that up to the present the results are disappointing from whatever point of view we may regard them. The professional milk adulterator seems to have studied, like the professional gambler, the doctrine of chances. Calculating his chance of a visit from a Food and Drugs Act Inspector it would run in some districts, judged by the samples taken, to once in a thousand years; in others, it would be once in fifty years; and, even in those districts most energetic in protecting the purity of the public food supply, it is doubtful if, calculated upon the number of samples taken for analysis, each milk vendor would not be safe in reckoning that two visits per year would be the most he might expect. This unsatisfactory state of things is due—

First—To the Acts not being compulsory; and that

the Acts do not require that not less than one sample of milk per 250 population should be taken per year.

Second—To the fact that the public analysts are intimidated from pronouncing a large number of the samples they receive to be adulterated, owing to the obsolete, unscientific and incompetent methods of the Somerset House chemists, who are the referees under the Acts, and to whom disputed cases are referred.

Third—To the absurdly low standard adopted by the Somerset House referees, who, although pure milk contains nearly four per cent. of fat, will proclaim as genuine any sample having as little as two-and-three-quarters per cent of fat.

Fourth—The curious fact that even when flagrant cases of milk adulteration are brought before magistrates the fines inflicted are an encouragement to the professional adulterator.

The use of a "separator" enables any unscrupulous dealer to make thirty gallons out of every twenty gallons of pure milk he buys, the extra ten gallons being separated milk from which the cream has been taken, and a gallon or so of water to bring the mixture to the point which the incompetent Government chemists always pass as pure milk. This adulterated milk is sold in every town and city in the kingdom, and no Food and Drugs Act Inspector can prevent its sale under the existing conditions.

It must be admitted that this is a very unsatisfactory state of things, inasmuch as the purchaser is not only defrauded, but countless children are seriously injured in health. It is a common practice for mothers to add water to the milk they buy, under the belief that the milk in its pure state is too strong for the infant's stomach. When this water is added to milk already deprived of a great part of its cream by the farmer or dealer, and to which separated milk and a further quantity of water are added before it reaches the consumer, the result is that mothers who further dilute the supposed pure cow's milk are unknowingly starving their infants. The professional milk-adulterator, however, reaps a rich harvest of extra profit, so great that, although some small dealers have been fined from £100 to £300 each in the aggregate within a year, they still continue the game, clearly showing that fining is no deterrent. The truth appears to be that the fine is a mere flea-bite even to a small dealer, as the following instance proves:—

At Southwark, on October 9, Thomas Stevens, milk seller, of Swan-place, Old Kent-road, was summoned by Mr. Thomas, chief sanitary inspector of the Bermondsey Vestry, for selling skim milk containing eight per cent. of added water.—The case had been adjourned for a second analysis, which did not relieve the defendant of his difficulty.—The defendant pleaded that the milk was scalded, and the condensed steam got into it: also that it was the same as he received it from a dairyman at Semley, Dorset, with whom he had dealt for five years.—There were several previous convictions against the defendant, and the magistrate now fined him £20.—The defendant asked for time to pay the penalty, but the prosecutor objected, and stated that the defendant was selling milk all over London.—The magistrates ordered the defendant to pay the money, or to go to gaol for a month.

It is obvious that fines are useless as a deterrent in the case of this offender, as despite the infliction of £20—the highest penalty under the Acts—he appears again and again before magistrates in various parts of

London charged with the same class of offence, pays the fine and costs, and continues the business of professional milk adulteration.

It is, therefore, very evident that the law requires amendment, for at present the suppression of adulteration is in about as chaotic a state as it could possibly be. Thus one magistrate fines a dealer £20 for eight per cent. of added water whilst another, as in the following cases, considers £5 enough penalty for 35 per cent. of added water, *i.e.*, for an offence nearly four and a-half times worse.

Mr. Denman, at Westminster Police-court on the 16th, heard a summons against Owen Evans, 6, St. George's-row, Pimlico, who was charged at the instance of Mr. H. Herriott, Food and Drugs Act Inspector, St. George's Vestry, Hanover-square, with selling milk adulterated with 35 per cent. of extraneous water. The defendant pleaded guilty, and was fined £5 with 12s. costs.

Clerkenwell, if it does not almost tell the inspector enforcing the Adulteration Acts that he is a nuisance and detaining a wearied magistrate from dinner, follows the *facilis est descensus avernii* by imposing ridiculous penalties, of which the following is a type.

At the Clerkenwell Police-court on October 15, Evans Jones, dairyman, of 116, Goswell-road, was charged with selling milk to which had been added 27 per cent. of water. The accused, who pleaded guilty, said in mitigation of his offence, that "on that there day he could not get milk nohow—not for love nor money!" Mr. Smith fined him 40s. and costs.

Liverpool is, as regards magisterial assistance in suppressing adulteration, amongst the very worst served places in the kingdom, the fines being direct incentives to fraud. From a batch of cases we take the following at Liverpool Police-court, on October 16. T. H. Harrison, farmer, Cinder-hill, Ellel, near Lancaster, was summoned for consigning to Liverpool a can of milk which on analysis was found to contain upwards of seven parts of water to every 100 parts of the poorest milk. A fine of 20s. and costs was imposed. Inspector Baker went to the trouble of taking a sample of the milk at Lime-street station on a Sunday. The Lee Board of Works appears to be somewhat doubtful whether, up to a point, the fraud is not a holy and wholesome one, for on its last meeting it decided that a vendor whose milk was adulterated to the extent of 8 per cent. should be warned!!

But if there be anything in the nature of a cake to be taken in this lamentable race as to who shall most encourage public robbery Mr. Bros, at North London, might out-distance all competitors in his claims. On October 18, Henry Cheek, milk-dealer, of Baring-street, New North-road, was accused of selling milk in Benyon-street, Hackney, which contained 8 per cent. of added water. Mr. C. V. Young defended, and elicited that the defendant, when the inspector's assistant asked to be served, said he had just sold all his milk, and that he had only milk and water left. The inspector demanded to be served, and an analysis showed the sample to contain 8 per cent. of water. Mr. Young admitted that the defendant sold two classes of milk—pure at 4d., and milk and water at 3d. per quart. He submitted that as the defendant had the candour to admit that he was selling milk and water no one was prejudiced by the purchase. Mr. Punter said that the defendant was fined £5 in September for a similar offence, and that fine was still outstanding. Mr. Bros dismissed the present summons, and advised the officer to recover penalties in future before he brought another case before the Court. Cheek subsequently paid the outstanding fine. Mr. Bros is evidently of opinion that Mr. Cheek's cheek in treating the payment of a fine for one offence with contempt is so meritorious an act that he should have *carte blanche* for further offences. But Mr. Bros on fines is equally astonishing.—On the same occasion

Thomas Verlander, of Oriel-road, Homerton, was summoned for selling milk adulterated with 17 per cent. of water, and was fined 10s. 6d. and 2s. costs.—Robert Osborne, of Hertford-road, was summoned for selling milk adulterated with 10 per cent. of added water, and was fined 10s. 6d. and 2s. costs.—Mary Ann Taylor, of Wick-road, Homerton, was also summoned for selling milk adulterated with 27 per cent. of added water. A fine of 5s. and costs was imposed.

In every one of these cases the prosecuting Vestry must have actually lost money over the prosecution. We have given enough of these curious decisions—although if necessary we could fill our columns each week with such encouragements to roguery—to prove the real need of an amendment in the existing Acts, making imprisonment, for at least a third offence, compulsory. Under the existing system of ridiculous decisions, inadequate fines, and Somerset House incompetence to accurately analyse food stuffs, the Adulteration Acts are so stultified as to be little better than a farce.

THE FISHMONGERS' COMPLAINT.

THE monopolists who have Londoners so completely in their toils that they step between the catcher of fish and the consumer, giving the fishermen a fraction for what the purchaser in London is charged sixpence or a shilling, are alarmed. From the *City Press* it appears the Fishmongers' Company is in despair. They seek to prevent the sale of what they describe as Canadian salmon trout, but what the importers declare to be salmon, pure and simple. The fish, which were caught, it is said, in the far-famed Fraser River, in British Columbia, arrived in London a few days ago, per steamer from Sydney, and were, of course, frozen. The Act of Parliament, under which the company's officers act, says that it is illegal to sell trout between October 1 and February 1, which is the close season. The importers deny that the refrigerated fish in question are anything but salmon. The Fishmongers' Company have given the importers a week's grace, during which time they must prove that the fish are not salmon trout. There is, as most people know, no small difficulty in detecting the difference between salmon and salmon trout, especially in the case of Canadian fish. Should the importers be able to prove their case, there is no doubt that Canadian salmon will figure very largely in the London markets in the future, and the public will have ample opportunity of discovering to their own satisfaction how far the quality of the fish is deteriorated by long continuance in ice.

It is worth while to devote a little space to these impudent persons who would, if they could, step between the public and supplies of cheap, wholesome foreign food. The Fishmongers' Company have a charter granting them power to hold land for the sustentation of the poor men and women of the said commonality.

Relying on this charter, but without any statutory authority, the company appoint fish meters at Billings-gate, impose dues and take steps to prevent the fish with which the seas round our coast teem being sold to the public at a cheap price. To keep up the extortion upon the London consumer tons upon tons of useful food are wasted or rot from time to time. The company share out in various ways—not to benefit our fisheries by devising improved methods by which the fishermen could dispose of their catches direct to the consumer—but to line their own pockets and stomachs over £50,000 per year of money originally donated for the benefit of fishermen and the fishing industry. It is true they allege that a proportion of this amount is devoted to charitable objects, but these, scholastic and otherwise, are the benefit of the non-fishermen and non-

fishmongers who have contrived to possess themselves of this enormous sum of money. The orphan of the Yarmouth or Grimsby fisherman has as much chance of being educated, or getting a start in life out of the school imposture as the poor have of getting the education the Charterhouse designed for them, but which is now collared by mean spongers who ride in their broughams to visit their charity-fed, clothed, and educated offspring, who usurp the places of the poor for whom the free education and sustenance were intended by generous founders.

Against such a class of mean misusers of public moneys our kin across the sea are entitled to the support of every right-thinking man in their efforts to place wholesome food before the public at honest prices, and it must gratify every one—save the four or five hundred persons composing this precious company—that their rubbishy objection is an untenable one.

THE GLASGOW CONDENSED MILK CASE.

THE following able review of Sheriff Strachan's decision has been laid before the Health Committee by Mr. Fyfe:—

A case under the Sale of Food and Drugs Act was taken before Sheriff Strachan, Glasgow, on Thursday, the 10th inst. The respondent was a shopkeeper who sold to the Food Inspectors a tin of condensed milk. The Sheriff-Substitute has discharged the respondent in the prosecution upon grounds which are somewhat extraordinary, and it is well that it should be understood by the public. Without going into the whole statement which was given by the Sheriff, it may be sufficient to indicate the new points which he has brought up.

The first is that the Public Analyst's certificate is not of any legal value whatsoever except in so far as it contains statements of fact determined by analysis. His (the Public Analyst's) opinion as to whether, upon these facts, the article is an adulterated article or not is legally of no consequence, that being a matter which has to be decided by the Sheriff after proof has been duly led.

To begin with, this decision is one quite contradictory to an English decision—*Bakewell versus Davis*, given on page 64 of the sale of Food and Drugs Acts, second edition—(Bell and Scrivener). This was a milk case where deficiency in fat had been certified by the analyst to the extent of 22 per cent. The analyst had added to his certificate, "The abstraction of fat is a fraud." It was held, however, that this observation, though matter of opinion, did not invalidate the certificate, and further, *that the certificate need not set out the constituent parts of the sample except in cases of adulteration*. Further, the Sheriff-Substitute appears to think it legally necessary not only to prove by the presence of the analyst in court, and by the presence of another expert, that from certain facts and figures stated in the certificate the sample submitted must have been adulterated, but he must have expert evidence in each case as to what the particular material should be in its genuine condition.

The Sheriff states: "I would require to know by what standard the matter is to be regulated, and what is the percentage of fat which is necessary to the constitution of condensed milk." Now it must be recollected that these words were penned in the knowledge that, across the particular tin of condensed milk in question (which tin was duly placed in the hands of the Court), the words were legibly lithographed: "This milk is guaranteed to contain all its original cream." It will be seen, therefore, that the tin proclaimed its own standard—that is to say, that the condensed milk within it contained all the original cream which is to be found in whole sweet milk, and this standard has

been recognised for many years in this country, and is the one adopted by the public analyst in drawing up his certificate. Although the printing on the tin, therefore, clearly proclaimed a standard which the milk within the tin did not even approximate (if the analyst's figures are to be believed), the Sheriff-Substitute assumed that, from want of extraneous evidence as to what condensed milk was, the case must fall. It appears that, if the public or any one else purchases an article of food round about which there is a printed guarantee that the said article of food is genuine, he is distinctly prejudiced and injured if, afterwards, he finds that what is printed is untruthful, and that the article has been adulterated or otherwise despoiled of some of its valuable ingredients, as in this case.

The second part of the Sheriff-Substitute's decision seems not less extraordinary. His words are: "The analyst seems to have assumed that the purchaser simply demanded condensed milk, and that, in answer to that demand, the seller was bound to have furnished him with an ideal article, made exclusively from the *purest cream*," but it is clearly established by the evidence that what was demanded was not condensed milk generally, but a well-known and recognised brand of that article, viz., the "Cornet Brand." He then goes on to indicate that because the Inspector asked and received the "Cornet Brand" it would matter little what the composition of the food material in that tin might be, as by asking for the "Cornet Brand" he got exactly what he demanded and deliberately purchased, and that therefore he could not in any way have been prejudiced. Section 2 of the Sale of Food and Drugs (Amendment) Act, 1879, was specially drafted and passed into an Act of Parliament in order to prevent respondents in such cases from defending themselves under the pretext that a Public Inspector could not be prejudiced. However, it appears clear that anyone who purchases by special name anything which is guaranteed to him by print on the label and which has been certified by the Public Analyst to be non-genuine, is distinctly prejudiced and damaged. If a mere name given to a commodity is to protect a seller from the consequences of selling it in an adulterated state, the door is at once opened wide for wholesale fraud. The Sheriff-Substitute said at the end of his interlocutor, "I desire to base my judgment on the simple fact that the prosecutor has failed to prove that the article furnished to Hamilton was in substance, nature and quality, different from that demanded by him." Hamilton demanded a tin of "Cornet Brand" Condensed Milk which *in clear letters* guaranteed its contents to him to contain all its original cream. The Public Analyst certified the contents of that tin to be "deficient in its natural fat to the extent of 44 per cent. or thereby."

THE PRESERVED PROVISION TRADE.

A BAILLIE CALLS THE PRACTICES "WORSE THAN MURDER."

AT Aberdeen, on October 16, Caroline Louisa Panizza or Edwards, Prince Regent-street, a partner in the firm of Charles Edwards and Co., preserved provision manufacturers, was charged with having, on October 7, in premises in Waterloo Quay, occupied by that firm, owned ten pieces of beef, weighing 623lbs., intended by her for human food, but which was unfit for such food, and were, therefore, ordered to be destroyed. Mr. A. J. Brander, solicitor, appeared on behalf of accused. In the course of a statement, Mr. Brander said the beef was only about a minute and a-half or two minutes in the place before it was seized by the inspector. He had evidently anticipated the arrival of some bad beef on the premises, and was consequently ready to pounce upon it. He allowed it,

however, to be placed in the cart, and brought along to Messrs. Edwards and Co.'s premises, without seizing it. No doubt it was in the custody of the firm, and, in the sense of the Act, they were responsible; but, at the same time, they did not have such time as would have allowed them to properly examine the meat. Mr. Lamb said that, although the lady was not at the works, her husband was there in charge, and at the time of the seizure the meat was being prepared to be boiled, and being taken from the bones.—Mr. Brander said he merely wished to indicate that, while the seizure had been delayed during all the time the meat was in the cart, it had only been two or three minutes in the premises before the inspector was upon it.—Mr. Lamb said there was no reason why the inspector should not adopt this procedure if he chose.—Mr. Brander: Two minutes is a very short time for inspection.—Mr. Lamb: Sufficient time to take it into their possession and prepare to boil it.—Mr. Brander: Of course, that would be the ultimate process. (Laughter.) Mr. Brander also stated that in regard to the preserved provision works, not only carried on by Edwards and Company but all others, there was practically a standing order amongst butchers to send on tails that might not have been sent on to London without the price being definitely arranged about.—Mr. Lamb: Surely, my friend does not mean to say that meat is sent on to be preserved without a price being fixed.—Mr. Brander said there were circulars to such an effect.—Mr. Lamb: So that your client can get anything he likes at any price.—Mr. Brander: I would not go so far as that. Baillie Gray said the fact that no price was paid on this occasion would rather show that the sellers were willing to take what they could get for beef. In passing sentence, the Baillie emphasised the serious nature of the charge. He thought it showed an extraordinary state of matters that firms were prepared to deal in diseased meat and so to allow to be scattered throughout the community disease and death. He looked upon a crime like this, knowingly and wilfully done, as worse even than murder itself. He thought any penalty they were entitled to impose on the offender as mere trifling. He had no hesitation in imposing the full penalty of £10, with expenses amounting to 26s. 6d., with the option of fifteen days in prison.—The second case was that of George Wood, fletcher, Belmont-place, who was charged with having, on 7th October, in Hanover-street, had in his custody fourteen pieces of beef weighing 889lbs., then being conveyed by two carters in his employment along Hanover-street, the meat being intended by Wood for human food, although it was unsound and unfit to be so used, and had to be destroyed. Accused pleaded guilty.—Mr. Lamb explained the circumstances of the case. There were two carcasses along with two hind legs of animals, which latter exactly fitted in with two carcasses included in the previous seizure, which wanted hind legs.—Mr. Brander, on behalf of Wood, pleaded that the meat had not been seized while actually in his possession.—Baillie Gray thought this made the case worse.—Mr. Lamb pointed out that the prosecution was not brought under the Public Health Act, but under the Police Act, the highest penalty being £5.—Baillie Gray said he was extremely sorry to see a man of Wood's appearance indicted on this charge. He thought it was one of the grossest crimes that one could commit against society. The fine would be £5, with 26s. 6d. of expenses or fifteen days in prison.—The last charge was read against George Wood, Belmont-place, and Colin M'Kenzie, Powis-place, the charge being that in premises in Wales-street, occupied by Wood, they had in their custody a carcase of beef intended for human food, but unsound and unfit to be so used. M'Kenzie pleaded guilty, and the charge against Wood was withdrawn. A fine of £10, with 26s. 6d. of expenses, and the alternative of thirty days in prison, was imposed.—Mr. John Watt, jun., asked if he might be allowed

to make a statement on behalf of the Fleisher Incorporation, but the Baillie held such to be irrelevant and did not accede to the request.

APPEALS.

WOOTTEN v. BEARDSLEY.

At the Wilts Michaelmas Sessions, before Lord Bath, Lord Chief Justice Lopes, and other magistrates, there was heard an appeal case, in which Mr. E. Wootten, grocer, of Silver-street, Trowbridge, appealed against a conviction by the justices in petty session under the Food and Drugs Act. Mr. F. R. Y. Radcliffe appeared for the appellant, and Mr. H. Lopes for the respondents. On the 13th of January last, Mr. Beardsley called at Mr. Wootten's shop, and asked for half a pound of shilling coffee. Beardsley said he was given the coffee in a tin enclosed in paper. He told the assistant that he was buying it for analysis. Smith then said it was a mixture of chicory and coffee, and that he had better see Mr. Wootten, who said it was all right, and that Peek Brothers would defend him. The coffee was analysed by Mr. Gatehouse, public analyst, who said there was 10 per cent. of chicory in it. Proceedings were instituted, and the case before the bench at Trowbridge on April 3rd. The point was as to what took place in Mr. Wootten's shop, and several witnesses were called as to this, who traversed Mr. Beardsley's evidence in its details. The result of the proceedings before the magistrates was that Mr. Wootten was fined 10s. and costs. Mr. Beardsley, in cross-examination, and shown a tin with paper round it, admitted that he could now read the words: "This tin contains a blend of finest chicory with carefully selected coffee. He admitted that he knew he could not get pure coffee for 1s. a pound, but he could get it for 1s. 4d. or 1s. 8d. He did not see anyone else in the shop when he bought the coffee, except Mr. Wootten and his assistant. Mr. Gatehouse, public analyst, gave evidence as to the composition of the coffee. Mr. Radcliffe addressed the court at some length on the legal aspect of the case, and then called several witnesses. Sidney Smith (the assistant), Mr. Wootten (the defendant), Herbert Abrams (warehouseman), and William Richard Deacon corroborated the previous evidence as to what took place on the sale of the coffee. Mr. R. Bannister, the deputy principal of the Inland Revenue branch of the Government Laboratory, Somerset House, and Mr. J. Hobbs, analyst, in the same department, also gave the result of their analyses. After the learned counsel had addressed the court at considerable length, the court decided by a majority to quash the conviction, and costs were given for the appellant on the application of Radcliffe.

THE "BRITISH MEDICAL JOURNAL" ON ADULTERATION AND SOMERSET HOUSE CHEMISTS.

OUR contemporary has a very ably written article in its issue of Oct. 19, entitled "The Parliamentary Committee on Adulteration." It puts in a clear and unanswerable way many of the reforms we have advocated, and upon the very important one of the Somerset House Referees the *British Medical Journal's* article ought to be of great value. When to the already widespread condemnation of the methods of Somerset House the *British Medical Journal* adds the weight of its authority—speaking for almost the entire medical profession—it should surely be evident to even the most hopeless lover of red-tape that the further existence of Somerset House as a court of reference is too serious a

scandal for anyone to defend. The *British Medical Journal* says:—

Among the suggestions made to the "Food Products Adulteration" Committee of the House of Commons for the amendment of the law relating to adulteration, one of the more important and valuable was the proposed establishment of a Board of Reference or Council of Control, whose duty it should be to lay down definite and clear rules for the guidance of public authorities and their officers in the administration of the Adulteration Acts; to fix and vary standards of purity and strength, to lay down definitions as to the composition and characters which different foods and drugs should possess, to decide upon what constitutes adulteration, to give a final decision in matters of dispute, and to discharge such other functions of a similar kind which might be considered necessary to secure the uniform and equitable application of the law throughout the country. Although differing in minor particulars, this suggestion—originally made in the draft Bill prepared by the Council of the Society of Public Analysts—was put forward, in effect, by four representative witnesses whose general acquaintance with the subject, and whose responsible positions should lend considerable weight to their statements before the Committee. We refer to Mr. Charles Umney, representing the general body of wholesale druggists, and the Chemical and Drug Section of the London Chamber of Commerce; to Mr. John Rogers, another representative of the Chamber, as well as of one of the most important wholesale trading houses in London; and to Mr. R. A. Robinson and the Hon. A. de Tatton Egerton, M.P., respectively chairmen of the Adulteration Acts Committees of the London municipalities of Kensington and St. George, Hanover-square, where for several years the existing Acts have been administered with vigour and success.

Of the principle of establishing a Central Board of Control we heartily approve, so long as it is carried out upon broad lines, which will prevent the vesting of the ultimate control in the hands of a single Government department, bound down by red tape, and in all probability out of touch with the daily progress of analytical science and with the general body of public analysts. A centralisation of this description would be unquestionably an unmixed evil; but the institution of some system whereby the law will be administered in a uniform and equitable manner is obviously an urgent necessity, and it is no less necessary that by some such system the heavy and unjust responsibility of settling what is, and what is not, to constitute adulteration and fraudulent dealing in reference to a great variety of commodities, should be removed from the shoulders of individual scientific officers, scattered all over the country, and compelled to act upon their own initiative. The present system—if the term can be used—is exceedingly unsatisfactory, and it is astonishing that with such cumbrous machinery so much real good has been done. Leaving other matters for the moment, the present system of reference, whereby a portion of a sample alleged to be adulterated can be sent to the Somerset House Laboratory for examination, results in producing a ludicrously unsatisfactory state of things, and in reducing the administration of the Acts in many cases to a farce.

With respect to milk, for instance, it has been proved to demonstration that a purchaser of ordinary milk is entitled to get not less than 3.5 per cent. of fat in it, and if any further proof were required, it is afforded by the fact that the better class members of the milk trade, and the representatives of large dairy companies, before the Parliamentary Committee and elsewhere, have advocated the fixing of a higher standard of quality in regard to fat than 3 per cent. Even such a body as the Metropolitan Dairymen's Society, whose conclusions must be considerably influenced by the feelings of the smaller dealers, have recently advocated a standard of

at least 3 per cent., and have done so in a way that amounts to an admission that the standard should really be fixed at a higher percentage. In the columns of the *British Medical Journal* we have recently shown how the adoption of an exceedingly low standard such as 3 per cent. leads to widespread fraud. Thousands of analyses have been published showing the limits between which the composition of really genuine milk varies, and yet the Somerset House analyst, as it appears from published legal cases and from the evidence given before the Committee, adopts the universal limit of 2.75 per cent., a limit which can only be founded upon the analyses of the miserable products yielded by improperly fed, improperly kept, badly managed, or very abnormal single animals, which products cannot be called "milk."

Even this limit, it would seem, is not adhered to, since in a recent case, Mr. Bannister, of Somerset House, declined to support a certificate of the Middlesex County Analyst alleging fat abstraction, because he found some 2.6 per cent. of fat. These circumstances in connection with a food product so universally important as milk, will serve to show the necessity for establishing such a Board as that which has been suggested, apart from any other considerations. The injury that is done by such a state of things is incalculable.

Inasmuch as the Council of the Society of Public Analysts has itself suggested the appointment of a Board of Control, it cannot be supposed that to do so would be to cast a slur upon these officials. Indeed the more responsible witnesses who appeared before the Committee paid a tribute to the general excellence of the work done by the public analysts. "With very imperfect means," observed Mr. Rogers, "they have done wonders," while Mr. Umney and others expressed in decided terms a general approval of their scientific and official work, and of the fairness with which their duties had, in the main, been discharged. The establishment of a Board of General Control would not mean the abrogation of the individuality of the public analyst, nor the reduction of his work to mere mechanical routine.

In the draft Bill previously alluded to it is suggested that the proposed Board should consist of the chief chemical officer of the Inland Revenue Department, of three public analysts nominated by the Local Government Board, and of two additional members nominated by the General Medical Council and the Board of Agriculture respectively. Mr. Umney very reasonably suggested nominees of the Institute of Chemistry, of the Pharmaceutical Society, and of the London Chamber of Commerce; while another witness considered that an elected advisory council of traders would be able to render most valuable assistance to the Board of Reference or Control when established—a proposition which is no doubt worthy of careful consideration; but the acceptance of the main principle, apart from details, is the point of importance at present.

The report recommends that the Food Products Adulteration Committee should be re-appointed in the forthcoming session. It is earnestly to be hoped that this will be done, as a great variety of important matters have still to be dealt with and much valuable evidence remains to be given. The extent to which the Acts should be applied, the most effective steps to be taken to ensure the adequate carrying out of the law in districts where the authorities neglect their duties, the question of minimum penalties, and especially the best way of dealing with the wholesale producer and vendor of adulterated goods and of protecting the innocent retailer—in regard to which we think the most effectual course would be to make the wholesale dealer a co-defendant in every case—are all matters which have engaged the attention of the Committee, but which have yet to be considered far more fully and carefully. It is probable that most of the members of the Committee had but an imperfect conception of the magnitude of the work upon which they were called upon to enter,

but in view of what has already been published the new Committee will necessarily appreciate the matter more clearly. It is to be hoped that, considering its gravity and urgency, the members who may be appointed will not shrink from the task, and that we may look for amending legislation of a comprehensive, just, and effective character.

COTTONSEED OIL FOR OLIVE OIL.

AT Steyning, on October 21, Emery Parsons was summoned for selling adulterated olive oil. Defendant pleaded not guilty.—He did not, he said, keep olive oil for sale.—Rose Evelyn Lea, a little girl, who said she lived at the Police-station at Steyning, stated that on the day in question she went to the defendant's shop and asked Miss Parsons, who was behind the counter, for a flask of olive oil. Miss Parsons complied with her request, and witness paid 6½d. for it. When she was going out of the shop P.S. Hooker met her and he went back into the shop with her.—Cross-examined by the defendant, witness said she spoke so that she could be understood and spoke loud enough for Miss Parsons to hear. His daughter did not go to a shelf, and, taking a flask of oil, hold it up to her and ask her if that was what she wanted.—P.S. Hooker deposed going into the shop after the purchase had been made. Miss Parsons having admitted serving the little girl, he asked the latter what she had asked for, and she replied "A flask of olive oil." Asked if she sold the flask as containing olive oil, Miss Parsons replied "Yes." The sample was divided in the usual way.—Asked by the defendant if his daughter told the Sergeant, when he asked her if she sold the flask as containing olive oil, "Yes, I suppose so," witness replied that she only replied "Yes."—Superintendent Bridger proved forwarding the sample to the Public Analyst, who returned it, stating that it contained 100 parts of cottonseed oil, and none of olive oil.—Defendant now said that it was entirely a mistake that the oil was sold as olive oil, because he did not keep olive oil at all.—He called as a witness Sophia Rachel Parsons, his daughter, who said the little girl only asked for a bottle of oil and when witness held it up and asked her if that was what she wanted, she replied, "Yes."—This evidence was corroborated by Frances Butcher, a servant, who was in the shop at the time; but the Bench unanimously considered the case fully proved, and mulcted the defendant in a penalty of 10s. and 16s. costs.

MR. JAMES HUDSON JUSTIFIED.

AT last, one of the blackmailing, prosecution-suppressing Food and Drugs Act Inspectors, of whose malpractices Mr. James Hudson made such sensational charges at the Food Products Committee of the House of Commons, has been unearthed, but, unhappily for Mr. Hudson, he proves to be, as most people believe Mr. Hudson's evidence was—a bare-faced imposture. He did nearly all Mr. Hudson alleged, but an inquiry into his *bonâ-fides* proved him to be as genuine as Mr. Hudson's charges. He called himself J. Robinson, and did not present himself to a House of Commons Committee, but at Court, at Newark Quarter Sessions, where he was indicted on a charge of obtaining 5s. by false pretences from Mrs. Emma Atkinson, at Bole, on July 5th, 1894.—The prisoner was arrested on his discharge after serving twelve months in prison, and was committed by the Retford magistrates on Saturday.—Mr. Kirk White prosecuted, and the prisoner, who pleaded not guilty, was unrepresented. Mrs. Atkinson said she was a widow, and kept a small grocery shop at Bole, Notts. The prisoner came to her shop, and representing himself to be an Inspector under the Food and Drugs

Act and also a public analyst, demanded a sample of bread and coffee. She served him, and having looked at the sample he said it would have to go before the magistrates. Witness said she was very sorry if anything was wrong. She had never been in a case of that sort before. The prisoner then said, "Well, as it's the first time, I will give you a chance. It would cost you 25s. if it went before the magistrates, but I will settle it for 5s. and will give you a receipt." Witness thereupon gave him 5s. and the prisoner wrote out and handed her the receipt (produced). Her daughter came into the shop during the transaction. Miss Atkinson corroborated her mother's evidence. She was sure the prisoner was the man. Inspector Garforth, Inspector under the Food and Drugs Act for the county of Notts, said the prisoner was neither an inspector of weights and measures, nor an inspector under the Food and Drugs Act, nor a public analyst. Superintendent Thomas, of Retford, produced a specimen of the prisoner's writing, which was similar to that of the receipt produced. When the prisoner wrote in the presence of witness he did it very deliberately, and was evidently assuming a feigned hand. Police-constable Daniel deposed to arresting the prisoner on his discharge from Knutsford Gaol, in Cheshire. In reply to the warrant read over to him by witness the prisoner replied, "You have made a mistake; I was never in Notts in my life."—The jury at once found the prisoner guilty, and he was sentenced to twelve calendar months with hard labour. Mr. Robinson is scarcely satisfactory proof of Mr. Hudson's wholesale slanders, and unless we can see a genuine case very soon, we really think, if Mr. Hudson knows what manly self-respect is, that he will feel he ought to offer an apology to the officials he so wantonly libelled.

THE FERTILISERS AND FEEDING STUFFS ACT: A CONTRAST.

BELGIAN farmers, says *The Standard*, appear to appreciate laws against the adulteration of manures and feeding stuffs more highly than English farmers, judging by the extent to which they have these substances tested. At the State Laboratory of Liege, last year, no fewer than 7,417 samples of manures, feeding stuffs, and similar products were analysed. At Gembloux the number was 5,003, and at other laboratories the numbers were considerable, bringing the total up to 22,952. Of course, these analyses were not all done for farmers, since wholesale buyers, no doubt, sent a good many of the samples; but the great majority, it may be assumed, were sent by retail purchasers. As a consequence, it is stated by the Belgian analysts that the manures sold to agriculturists are rarely adulterated. They are often priced much higher than their real value, owing to the ignorance of many buyers of the relative values of the constituents; but this is a defect that might be met to a great extent by the occasional circulation of information.

In the United Kingdom the Act has been perhaps availed of by a score of persons.

THE AMERICAN "PAINT, OIL AND DRUGS REVIEW" ON AMERICAN OILS.

IN a recent issue our contemporary, referring to our exposures of the methods of the American Oil Gang, says:—

"AMERICAN OIL IN ENGLAND.—The past week has provided its fresh batch of victims of the present murderous low flash-point allowed for American oils, and, as usual, County Council and other officials have paraded the prompted lie that the lamps are the cause of each *auto da fe*. * * * The oils are not allowed

to be sold in the United States unless their flash-point is nearly twenty-five degrees higher than the rubbish they flood England with. This is significant, and may well prompt the question, 'Why should England be the dumping-ground for murderous American oils, which cause the roasting alive of hundreds of persons yearly, and which are not allowed to be sold in America?'

"The above is clipped from the *London Food and Sanitation* of September 14th, and indicates that American oils are not giving satisfaction in England. This is due to the fact, doubtless, that the English not only do buy cheap oil, but careless using with inferior lamps. True it is that oils of from ten to twenty-five degrees higher flash-point only are permitted to be sold here, the Illinois law requiring one hundred and fifty degrees. In England it is different, judging from what our contemporary says, and the answer to its question, why should England be the dumping ground for inferior oils, can be answered by saying, because she wants to be. A better and safer product will cost more than English purchasers seem willing to pay. The unerring laws of trade will take to English shores the quality demanded and no other. There may also be several grains of truth in that 'prompted lie' referred to."

IMITATION CHEESE.

AFTER allowing this fraud upon traders and the public a free run for a few years, the Government has at last done what common sense dictated should have been done at the time of the Leeds and other prosecutions. Large manufactories exist abroad for making this concoction, which is extensively brought into England and ignorantly and innocently sold as genuine cheese to the consumer. Instructions have been given to the revenue officials, when they are in doubt as to the genuineness of any consignment, to take samples and forward the same to the Government analyst.

But there is something wanting in this instruction. No one has been appointed to teach the Government analysts how to analyse cheese, and it is notorious that they are incapable of analysing anything accurately. We suppose the swindle will pursue its course profitably and merrily.

PROTECTING THE PURITY OF FOOD AT WOLVERHAMPTON.

AT Wolverhampton, on October 18, before Mr. N. C. A. Neville, Stipendiary, George Pritchard, grocer and provision dealer, 64, Lower Walsall-street, Wolverhampton, was summoned on two charges for selling margarine as butter, and for neglecting to label the same. Mr. Allwood, the inspector under the Food and Drugs Act, prosecuted, and said that on August 23 he sent a young woman, named Emily Cash, to purchase one pound of rod. butter. Mrs. Pritchard told her they had not got any butter at rod., but they had some at 8d. A pound at 8d. was purchased, which upon being analysed was found to be margarine. The label, it seems, had been covered, and Mr. Allwood went on to say that the turning of the label upside down in shops of a similar kind was getting quite prevalent. Evidence having been given as to the purchase of the butter, and Mr. A. Turton having spoken on behalf of the defendant, the Stipendiary said he would have to increase the fines in such cases for people to take notice. For selling margarine as butter defendant would be fined £5 and costs, or one month's imprisonment, and for not labelling the margarine in the shop a further fine of £1 and the costs, with the alternative of fourteen days in prison, would be imposed. Total £7 8s. A month was granted to pay.—Thomas H. Bladen, grocer, 68, Victoria-street, was summoned

for like offences, but, as Mr. Allwood pointed out, the case was worse than the former one, inasmuch as pure butter had been sold the same day for rod. per pound. As it was, one pound of rod. butter was supplied by Mr. Bladen himself, and the purchase was wrapped in plain paper. It was afterwards found out, upon analysis, that the butter was margarine, and contained twenty-seven per cent. of real butter. Mr. Turton, who defended in this case also, pointed out to Mr. Neville that it was more profitable to sell genuine butter at the increased price than margarine. He contended that a mistake had been made by the defendant. The Stipendiary said men ought not to have to descend to low tricks to make profits. The defence that a mistake was made had not been made to him lately, but he heard it some time ago. Grocers were liable to make mistakes, he knew, so were purchasers. If the pure butter could only be distinguished with difficulty from the other, why didn't the Grocers' Association, who were a powerful body of men, endeavour to get the Act altered whereby they might distinguish between the two kinds. A little green might perhaps be introduced into the one. The case under his notice was a bad one, and defendant would be fined £7 and the costs, with the alternative of one month's imprisonment for selling the margarine as butter, whilst for not labelling the same he would be fined a further sum of £1 and costs or fourteen days. Total £9 8s.

ADULTERATION IN WEST HAM.

DR. SANDERS, Medical Officer of Health, is still active in protecting the purity of the people's food, and last week had a number of offenders before the court. Edwin Shaw, of 31, West-road, Custom House, milk with 11 per cent. of added water; two informations; fines, £3 and costs in one case, £1 and costs in the other case.—James Spencer, of 60, Royal-road, Custom House, milk 14 per cent. of added water; fined £3 and costs.—Albert Chappell, of 21, Adamson-road, Custom House, milk 14 per cent. of added water; fined £3 and costs.—William John Robinson, of 10, Cross-street, Canning Town, milk 18 per cent. of added water; fined £4 and costs.—Rosa Dickerson, of 21, Custom-street, Custom House, milk with 25 per cent. of added water; fined £6 and costs.—John Williams, of 43, Stratford-road, Plaistow, milk 15 per cent. of added water; fined £3 and costs. The last named defendant was also fined a further £3 and costs for selling as butter a substance known as margarine. Frederick Wing, of 58, Plaistow-road, West Ham, also summoned for selling margarine as butter, was fined £10 and costs, there being a previous conviction in this case.

THE ADULTERATION ACTS IN CAMBERWELL.

IN his annual report to the Vestry, Mr. Frank L. Teed, Public Analyst, says:—"Unless these practices are met with more deterrent punishment, adulteration is likely to continue with us until the perpetrators repent from conscientious motives, the legal incentives to repentance being of such a trivial nature. If we look back to the time when Adulteration Acts were first contemplated, we find that there were many and various kinds of falsification then in existence which have now entirely disappeared, and may be regarded as merely historical. The varieties of fraud that have ceased are the grosser adulteration of food stuffs with injurious ingredients, practised by the manufacturer. The latter will not nowadays risk the loss that would follow on detection. The adulteration that we have still with us is chiefly that symbolised by the water tap and the skimmer. The adulteration

by substitution also still flourishes—I mean the fraudulent substitution of an inferior food stuff for a superior, such as margarine for butter, chicory for coffee, starch and sugar for cocoa."

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

BY ALEX. J. WEDDERBURN.

(Continued from page 323.)

If any foreign Government were to interfere with the business rights of our people the Federal Government would retaliate; but in the case of an adulteration the Federal Government, it is claimed, has no right to interfere, and the honest, industrious citizen is frozen out of business while the scamp is permitted to continue his nefarious and unholy practices. Counterfeiters of money are restrained, violators of the revenue laws are held in check, pirates are summarily disposed of, but those who counterfeit food and drugs violate the various State laws, and bring dishonour on the country by pirating and sailing under the black flag of destruction to honest trade are permitted to continue in their outrageous practices, for lack of a Federal law permitting the States to enforce their statutes.

Many of the misbranded goods are, doubtless, as good as the articles which they seek to supplant; in some cases, probably, they are superior. Would it not be better for the interests of all concerned to brand them true to name, and for the protection of the purchasers at home and abroad, as well as those manufacturers who prefer to do a legitimate business (by far the great majority), for the National Government to enact such remedial legislation as will prevent interstate or foreign traffic in misbranded food and drug products. The cost of executing such a law need not be immoderate, and should be borne by the manufacturers of food and drug products. A small registration fee, say 10 dols., on each manufacturer (not each article) would fully cover all the cost, and the result would be of such a beneficial character as to soon receive the indorsement of all parties interested. One official for each State, or, at the outside, two, to co-operate with the State officials, would be all that would be needed to prevent violations of the law, and reduce adulterations appreciably, as all reputable dealers would be only too glad to assist in preventing a competitor from underselling them by means of fraudulent brands. That any law can prevent crime is, of course, not to be expected, but in the case of a national food and drug adulteration law the assistance rendered by honest manufacturers and dealers and the State officials would, after one or two convictions, be so convincing as to materially reduce the desire to sell fraudulent goods. Speaking of the necessity for supervision of the food and drug products, Dr. R. C. Kedzie, in an argument before the Michigan legislature, said:—

But the fact that there is such an official at work would do much to infuse a healthy tone of honesty among manufacturers and keep such poor stuff out of our State. The admonition, There's a chiel among ye takin' notes, and faith he'll prent 'em, will prove a healthy tonic for public morals. A fraud may make light of any threat of exposure, but it fears nothing so much as the light. It requires strong pressure to gain its consent to be exposed in the public press.

Without further comment I submit a revised list of adulterants, various comments from State officials, extracts from official reports, newspapers, chemists, and other correspondents, and would direct special attention to the lax provisions for enforcing the statutes

in most of the States. These subjects have been collected under appropriate headings. It would be impossible to reproduce the hundreds of letters or all the data that have been secured, or to publicly acknowledge the assistance rendered me by many gentlemen who have kindly and promptly furnished important information, but I desire to express to each my thanks for prompt and courteous assistance. In the following extracts, selected from many similar letters, will be found as fair an exhibit of the views upon the question of food and drug adulterations as could possibly be submitted. The preponderance of opinion shows the feeling of the great mass of the people upon this subject. All kinds and classes, with wonderful unanimity, join in testifying as to adulteration. This being the case, we are led to conclude that adulteration is general. The letters presented show the character of these sophistications to be principally of a harmless (to health but not to the pocket) character. In many instances, however, poisons and injurious adulterants are used. The classification by States seems to be the best and easiest method of arrangement, and has, therefore, been selected. It will be seen that letters, extracts, reports, etc., have been received from many States showing that no part of the country is free from this nefarious practice. It will be observed that nearly all the State officials and representative tradesmen who touch on the subject unite in urging the passage of a national food and drug law for the protection of legitimate industry and our interstate and foreign commerce, as well as the public health.

Opinions of State and municipal officers and others regarding the adulteration of food and drugs.

ALABAMA.

From Alphonse L. Stollenwerck, of the Newman and Stollenwerck Drug Company, Birmingham, Ala. :—

I have no data of adulteration of drugs and food products, for the reason that I never took the trouble to make memoranda. I have no doubt but that I could gather up quite a number of adulterated foods and drugs. We have no preventive laws in this State. We have an Alabama State pharmacy law, which pertains only to the licensing of pharmacists. In 1881 I organised a county pharmaceutical association in Jefferson County, and the following year organised the Alabama State pharmaceutical association, of which I was the president for two years. As the president of this association, I framed the present pharmacy law. We have never been able to pass a law pertaining to adulteration of drugs, medicines and foods. I think a law governing these articles if properly enforced would be of great material good to the community at large. I think the manufactures of patent and proprietary medicines and of food products are allowed entirely too much latitude, inasmuch as unscrupulous manufacturers put upon the market and advertise preparations not only devoid of medicinal properties but which are absolutely injurious to the consumer.

From H. N. Rosser, health officer, Birmingham, Jefferson County, Ala. :—

In my opinion a law requiring the proper labelling of drugs and groceries in packages as to quality and quantity is a "consummation devoutly to be wished," as many of the pharmaceutical preparations sent to this market are not of the quality specified on the labels, and many of our canned groceries are short in weight, of inferior quality, and often adulterated. Our city code has nothing in it in regard to adulterations, and we have no system of inspection in Alabama.

From N. T. Lupton, State chemist, Agricultural and Mechanical College, Auburn, Ala. :—

Annotto, or a preparation similar, is used to a considerable extent for imparting a yellow colour to butter.

(To be continued.)

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Food and Sanitation.

SATURDAY, NOVEMBER 2ND, 1895.

WHY DISEASED MEAT IS SOLD.

THE shortest, and what would naturally be regarded as the truest answer to this question is, "for profit." But a careful study of the subject shows that it is not profit alone that causes butchers to risk the vigilance of sanitary inspectors and the disgrace, loss of trade, and penalties suffered by being brought before magistrates for vending diseased meat. The Englishman, in addition to being a born grumbler, has a keen sense of personal wrong, and a stubborn objection to being victimised, and that stubborn objection is not lessened by telling him that he suffers for the public good. Now, there is not a shadow of doubt that, upon this question of diseased meat, the butcher feels he is victimised. His position is somewhat analogous to that of the person who has received bad or light coin in change for good coin, and whilst a large proportion of persons so swindled are content to bear the loss, there are not a few who feel they ought to "pass it on." And in the

THE LAW AND CHEMISTRY

OF

FOOD AND DRUGS,

BY

H. MANSFIELD ROBINSON, LL.D. (Lond.),

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AND

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Public Analyst to the Strand District Board of Works, &c.

A Practical Manual for persons administering Law of Food and Drugs Adulteration (e.g., Medical Officers of Health, Public Analysts, Sanitary Inspectors and Inspectors of Nuisances, Constables, Members of Municipal Corporations, Urban and Rural Sanitary Authorities, Justices of the Peace, &c.), also for persons trading in provisions and drugs, and the general public.

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AND OF ALL BOOKSELLERS.

case of the vendor of tuberculous meat, our investigations lead us to the belief that it is this sense of being victimised, joined to a doubt, in the face of the conflicting opinions of experts, as to the possibility of tuberculosis being transmitted from animals to man, that causes the law to be braved, and the health of the consumer endangered by the sale of tuberculous meat. "Put yourself in his place," is a sensible old saw, and if this be done in the case of the butcher, it is not difficult to realise that he has a grievance. How sore a one it is, the following letter, from Mr. McConnell, M.R.C.V.S., in the *North British Agriculturist*, demonstrates.

Mr. McConnell says of the tuberculin test, that the test is being "pretty extensively employed" by owners of cattle, to detect tuberculous animals, those in which disease is indicated being generally drafted out from the healthy ones, and sent to the public markets for sale. Suppose that twenty tuberculous cows are found in a herd and thus disposed of, they may be spread about over twenty different farms, carrying contagion to each herd in which one of them is placed. Mr. McConnell admits that a few public-spirited stockowners are making a proper use of the test by isolating cattle found diseased and fattening them off, but they, he adds, are the rare exceptions. He mentions a case in which nearly three-fourths of a herd of cows, ninety-four in number, were found to be tuberculous, and all, or nearly all, sent to the markets and sold.

A butcher is not a veterinary surgeon, nor a bacterio-

logist, and, if he were, such qualifications would avail him little when buying cattle for slaughter. The animals he purchases are apparently healthy, and it is only when they are slaughtered that the evidences of the disease are apparent. In the face of the fact that many experts deny that the flesh of animals that suffered from tuberculosis is in any way dangerous for human consumption, and that the butcher has bought the beasts in good faith, at a fair market price, it is but natural that he should object to being a scapegoat for the public benefit, and that a certain number of the persons thus victimised should feel that they have some justification to "pass it on." We are not excusing this happy-go-lucky kind of business morality—our own opinions as to the atrocity of the crime of transmitting so terrible a disease as tuberculosis broadcast to our fellow beings are too well known—we merely state the plain truth for the purpose of suggesting what we conceive to be a remedy, which the preservation of the public from disease urgently needs, for we are satisfied that, so long as the butcher is thus victimised, an army of sanitary inspectors, ten times greater than our existing one, could not prevent the sale of tuberculous meat. The public protection from the dissemination of this disease by animal flesh imperatively requires that the butcher should be treated as the stockbreeder was with respect to foot and mouth disease, and be compensated for condemned animals. Were the stockbreeder in the same position with regard to his tuberclosed cattle as he was with his foot and mouth diseased animals, and had no butcher whom he could make a scapegoat of, we venture the belief that compensation for tuberculosis condemned animals would have been long ago made by Government, but the butcher is not a duke, earl, or important member of the landlord class, who rule the country for their own benefit, and despise the trading classes, even when they are gullying them with claptrap and hypocrisy to catch votes for this Liberal or that Tory self-seeking humbug. The butcher who is hocused into buying their diseased cattle has either to grin and bear the shameful sharp practice which, to many a small dealer, means ruin and the loss of his entire capital, or run the risk of fine, exposure, or imprisonment. True justice would place His Grace, My Lord, or the Squire who, callous as to the amount of disease or death his greed may disseminate amongst his fellow-creatures, weeds the tuberclosed cattle from his herds, as Mr. McConnell shows, and sends them far and wide for human consumption, in the dock along with the butcher who, victimised by his villainy, has chosen to sell the diseased animal he has been hocused into buying for human food rather than lose his all. But justice does not; it punishes the person who sells a carcass, but the scoundrel, who styles himself a duke, earl, lord, right hon., or hon. gentleman, and sells a hundred diseased carcasses, laughs at the law, and pockets his victim's hard-earned money. Meanwhile, owing to this monstrous state of things, the public suffer one of the most terrible of diseases to be spread broadcast, and the vitality of our race is being undermined. The number of tuberclosed animals that escape the vigilance of inspectors, or are not voluntarily surrendered by meat vendors, there is every reason to fear, is enormous. The *British Medical Journal*, in its last issue, advocates the necessity for a penalty on the sale of milk from a cow known to be tuberculous; but it says—

"If legislation went no further than this, it would do little besides partially stopping the use of the tuberculin test, which it is desirable rather to encourage, if not to make obligatory. Compensation for condemned animals, and the inspection of those fattened, when they are slaughtered, must also be dealt with in any legislation intended to protect the public against the terrible risk of infection from tuberculous meat and milk, to which they are at present exposed."

We have pointed out what we believe is the true

reason why this kind of diseased meat is sold, for we believe that, were this grievance of the butcher removed, a great step would be made in stopping this terrible trade. Those found dealing in diseased meat, when these grievances no longer existed, deserve, and should get no sympathy. Imprisonment, not fining, should be the punishment of persons who do not stop at poisoning their fellow creatures by selling unsound food.

WHAT DISTILLERS' AND BREWERS' SWINDLES MEAN TO ENGLAND.

IN these highly civilised days, when the distiller can make his whisky from damaged dates, shipwreck-salvaged Indian corn, potatoes, or old boots if he chooses to do so, and the Government will not only allow him to do this serious injury to our native grain-growing industry, but pseudo-scientific journals will eulogise his spurious whisky as a pure spirit, the Food and Drugs Act Inspectors who compel the observance of some degree of honesty, as regards the strength of the spirits sold, do all the law allows them to do for the public protection. We believe that the crimes caused by drink are due more to the fact that there is maddening rubbish thus manufactured on sale everywhere—thanks to the Inland Revenue ignorant chemists—and that it is as hard to find a drop of genuine malt whisky as it is to find an honest politician. But the trade journals never tire of taking their oath there is no adulteration. How can there be when Government has legalised every adulteration they choose to practise, and encouraged every fraud. What a difference there would be in national prosperity were it made illegal to sell any substance as beer that was brewed from articles other than malt and hops, or as whisky that was not distilled from malt? It would mean less profit and trade for the foreign rice, sugar, or Indian-corn grower, and bring despair to the German potato spirit vendor, but prosperity would smile again on native agriculture, and the mad policy of allowing England to drift into the position of being dependent on other nations for the necessaries of life be reversed. What such a policy means may be realised by the knowledge that France, for instance, could in war, by only partially blockading our coast, bring almost instantaneous famine to hundreds of thousands of the poorest of our population, and that the combined fleets of two of the great powers could, without difficulty, so harass or stop our food supplies as to bring famine with its attendant pestilence to all save the wealthiest, for our land under corn crops is going slowly but surely out of cultivation, and amongst all the impostors, enthusiasts, and self-seekers who fill our Parliament there appears no one who has the strength to be a patriot and an Englishman. This is the miserable position to which party and faction have brought us, and, to add to our humiliation, the rogues who have sold their chemical swipes under the name of honest English ale, and palmed off upon the consumer potato-spirit, plus flavouring matter, as pure Irish or Scotch whisky, have peerages given to them instead of a gaol. But the rapacity goes even farther than this, as the following recent cases evidence:—

Last week at Bearsted Petty Sessions, Thomas Binskin, landlord of the Victory, Barming, was summoned for selling half a pint of adulterated whisky.—I.C. Brown and Inspector Watson gave evidence, the latter proving that Mr. Adams' analysis showed that the whisky was adulterated to the extent of 3.15 below the legal limit. Samples of rum and gin were adulterated.—Mr. Ellis pointed out that the rum and gin taken was found good, and that, he submitted, showed that Mr. Binskin did not intend to be dishonest. He urged that the fact of the whisky being below the legal limit was due to evaporation, through the top of the keg from which it was drawn being loose.—

Defendant was fined £3 and 10s. costs, or one month.—George Barringer, a publican, of East Farleigh, was summoned for selling adulterated spirits.—I.C. Brown proved purchasing a quantity of whisky and rum of defendant. The analyst's certificates showed the whisky to be adulterated to the extent of 13·58 and the rum 16·14 below the legal limit.—Defendant, in respect of the whisky, was fined £5 and 10s. costs, and in respect of the rum a fine of £5 and 9s. costs was imposed.—The alternative in each case was a month's imprisonment.

At Wolverhampton, George Ward, British Oak Inn, Willenhall-road, was summoned for selling whisky diluted with water beyond the statutory limit.—Mr. R. A. Willcock defended.—Mr. G. F. Allwood, inspector under the Food and Drugs Act, stated that on July 27 he visited the house, and saw defendant's son, William Walter Ward, and from him purchased half-a-pint of whisky, which was supplied from one of two bottles that were on a shelf. Witness paid 1s. 3d. for the half-pint, and the spirit, on being analysed, was found to be diluted 17½ per cent. beyond the statutory limit.—Mr. Willcock, for the defence, said his client had been twenty years in the grocery trade, and, as a publican, he had no practical knowledge of the manipulation of whisky. He had made a mistake, but committed no intentional breach of the law. He (Mr. Willcock) thought some of their temperance friends would say it was a good thing the spirit was diluted before the customer received it.—The Stipendiary: Persons must not dilute it below 25 per cent. Some people, perhaps, like more water than others, but water must not be sold for whisky.—A fine of 40s. and costs was inflicted, the total amounting to £2 18s. 6d.

The law gives no power to the Food and Drugs Act inspectors to do anything to ensure the sale of genuine spirits or beer to the public. It merely enables them to prosecute for the sale of water at spirit prices. Bumble unconsciously uttered a great truth when he said, "The law is a ass."

GETTING AT THE ROOT OF A SHAMEFUL SWINDLE IN MANCHESTER.

At the Manchester City Police Court, on Wednesday, before Mr. Armitage and other magistrates, Margaret Salt, provision dealer, 13, Brierley-street, London-road, Manchester, was charged with selling margarine as butter. Mr. A. T. Rook, superintendent of the Sanitary Department, prosecuted.—Inspector Houlston stated that on September 18, he visited the defendant's shop, and purchased what was supposed to be a pound of butter. He was served from a dish that was on the counter, and paid 1s. for the purchase, the price of fairly good butter.—Mr. Estcourt (city analyst) testified that the substance in question contained 70 per cent. of foreign fat.—In answer to the charge the defendant said she had purchased the butter from a Mr. Michael McCarthy, and it was invoiced to her as "Irish butter." She paid 11d. a pound for it, and retailed it at 1s. On receiving an intimation that the substance was not butter, she informed Mr. McCarthy, who said that she had ordered butter, and he did not know but what butter had been sent, though it was quite possible that the lads at the shop had sent margarine.—Mr. Armitage (to the defendant): You only had a 1d. per pound profit for selling the article, then? Defendant: That is all, sir. Mr. Armitage: Do you say that you purchased the substance from the company of which Mr. McCarthy is the manager? Defendant: Yes, sir. Mr. Armitage: Does Mr. McCarthy himself call for the order about every month? Defendant: Yes.—The magistrates then examined the invoice, and amongst other items found the following:—12lbs. Irish butter at 11d. per lb."—Mr. Rook stated that there were charges

against Mr. McCarthy, the dealer who had supplied the substance in question, and he would like the magistrates to hear them before giving their decision.—The case against Michael McCarthy, wholesale and retail provision dealer, Gartside-street, Deansgate, was then proceeded with. He was charged with having committed four separate offences.—Mr. Rook said the principal charge was that of supplying an article which was not of the nature, quality, and substance demanded.—An inspector of the Corporation visited the defendant's premises, and noticed five parcels of margarine properly labelled. There were five other parcels, four of which were labelled "Pure Butter," and one "Finest Kiel." A pound sample was taken from each of the latter five parcels, and it was found, on analysis, that four of the five were margarine. The parcel labelled "Finest Kiel" was, however, genuine.—Inspector Houlston testified to visiting the defendant's premises, on September 17, and taking the samples referred to; and Mr. Estcourt certified that four of the samples taken were margarine, really being composed of "foreign fat, flavoured with butter fat."—The defendant said he was not in the shop when the samples were taken; in fact he was hardly ever in the shop, as he spent a great deal of time in travelling, and when he was on the premises he was engaged with the books. It was quite possible that one of the assistants had made a mistake and opened a wrong firkin, and then divided it into four parcels which were afterwards placed on the counter. His wife really had the management of the shop.—Mrs. McCarthy was called, and said she did not know but what it was pure butter that had been served. Mr. Armitage: You serve a large number of customers, don't you; both retail and wholesale? Witness: Yes. Mr. Armitage: Do you know how many? Witness: No, I don't. Mr. Armitage: You know that you serve a large number of shopkeepers? Witness: Yes. Mr. Armitage: Have any of your customers been brought before the magistrates? No answer. Mr. Armitage: Have you heard of Mr. McCarthy paying a fine when people have been brought here? Yes, I believe he has paid one.—Mr. Rook asked the Bench to deal severely with the defendant, if they thought the case proved. He was in a large way of business, and was supplying a great number of small shopkeepers, both in and around the city. Like some others in the trade, one who was before the Court some three or four weeks ago, the defendant seemed to be supplying his customers with margarine for butter, and in the event of proceedings being taken against them, paying the fines. It was certainly a most serious fraud upon the public, and at the same time doing an injury to his competitors in the trade. The defendant was selling an article fraudulently, and no doubt, to some extent, ruining the business of the people who were doing an honest trade. He alleged that the defendant was making cent. per cent. profit, as the market price of margarine three days before the samples were taken was only 6d. per pound.—The defendant: That is false, as the samples which were taken cost me at the rate of 90s. per cwt. After consideration, Mr. Armitage said that the local authorities were almost getting to the headquarters of the wholesale places, where a large number of retail people got their supplies. The Bench had seen very plainly that the article with which the defendant had supplied Mrs. Salt was margarine, although it was invoiced as butter. There were four distinct offences, and they thought it was a very bad case, indeed the worst that had ever been brought before them, and they would impose a fine of £10 and costs in each of the four cases, making £40 and costs in all.—On the application of Mr. Rook, four guineas extra costs were allowed. Also at the request of Mr. Rook, the summons against Mrs. Salt was discharged, Mr. Armitage remarking that the defendant had been misled.

DRUG ADULTERATION.

At Bingley, on October 23, John Bradley, shop-keeper, Harden, was summoned by Mr. Arthur Randerson, District Inspector under the Food and Drugs Act, for selling quinine wine, compound liquorice powder, and beeswax which were not of the nature, quality, and substance demanded by the purchaser. The cases were taken separately.—The Inspector stated that on September 6 he purchased from defendant's shop at Harden a shilling bottle of quinine wine, for which he paid 1s. As is customary in such cases he divided the article into three parts, he and the defendant each keeping a part, and the third being sent to the county analyst. The analyst's report was as follows:—"The said sample contained quinine in a proportion corresponding to 0.52 grain of crystallised quinine sulphate per fluid oz. of the wine. The quinine wine of the British Pharmacopœia is directed to be prepared so as to contain one grain of crystallised sulphate of quinine per fluid oz."—Defendant said he purchased the wine from Mr. Skirrow, of Bingley, and it was the same he had sold for the past 20 years. He had had no complaint before, and, of course, he always regarded the place where he purchased it as a reliable firm. He was guilty according to the recipe of the British Pharmacopœia, but he would leave himself in their worship's hands.—The Chairman: Have you never had it tested?—Defendant: No.—But was it not your duty to do so?—I was quite ignorant on the matter.—In the next case the Inspector bought four ounces of compound liquorice powder, for which he paid 8d. The analyst's report on a portion of it was:—"The sample was compounded substantially in accordance with the direction of the British Pharmacopœia, except that it contained 5.5 per cent. of sulphur, which is required by the British Pharmacopœia, to be used in the preparation at the rate of 1oz. in 12, or 8.3 per cent.; the proportion of sulphur thus being only about two-thirds of the amount contained in the British Pharmacopœia preparation. Defendant said he purchased the powder in question from Messrs. White, of Bradford, and on his informing those people that he had been summoned, Mr. White had the powder examined, and he (defendant) had with him the analyst's certificate. Defendant asked if he might read it, but the Clerk ruled that it was inadmissible unless the analyst was present. The inspector also held that the only certificate admissible was that of the County Analyst. On the certificate produced by the defendant being examined it was stated that the powder contained 7.56 per cent. of sulphur. Defendant thought it would be the best course to have the third sample sent to Somerset House for analysis, and the case in the meantime adjourned, but eventually he agreed to leave the matter in the hands of the Bench.

In the third case the article called into question was beeswax, of which the Inspector purchased $\frac{1}{2}$ lb. for 1s. 4d. On analysis it was found to contain 25 per cent. of beeswax; and added fatty matters, chiefly Japan wax, and stearic acid, 75 per cent.—When the Inspector asked for pure wax he (defendant) told him he had some that had been made in the village, and he had also some that he had got from Messrs. Cannon, of Bradford; the former he knew to be pure, but he did not know whether the latter was. The Inspector, however, insisted upon having the wax purchased from the Bradford firm.—The Inspector said defendant did not say that the wax he purchased was wrong.—Defendant said that according to "the journals" beeswax did not come under the head of drugs. He asked permission to read one or two cases that had been dismissed.—The Chairman: They have nothing whatever to do with this case.—The Inspector: Only the books that are published by authority are allowed to be read in this court.—Defendant: I only want to show you where similar cases have been dismissed.—

The Inspector: The point has never been decided in the Queen's Bench, and in every case I have brought there has been a conviction. If defendant is not satisfied he has power to appeal.—Defendant said he would place himself in their Worship's hands.—In fining defendant 5s. and costs in each case, the Chairman said the Bench did not think defendant had committed the offence knowingly. He advised defendant in future to get certificates with his articles.—The costs amounted to £5 4s. 11d.; in all defendant would have to pay £5 19s. 11d..

THE MUSTARD AND WHEAT-FLOUR QUESTION AGAIN.

A FEW weeks ago we had occasion to deal with this question in connection with the humbugging "Certificates of Merit" awarded by *Science Siftings*, in which specimen of the "Fagin's Miscellany" journalism there is much sifting but little science, save that of the scissors and paste-pot. The grocery trade is liable to be seriously misled by such ignorant rubbish as *Science Siftings* publishes on food questions—i.e., supposing any grocer were foolish enough to waste a penny in buying the trash, and they should be careful, if they buy mustard, to demand with their purchases a warranty, in order that, should a prosecution occur, the local authority may proceed against the wholesale dealer for the offence. If a substance containing wheat flour, or foreign matter of any kind, be sold as mustard, the vendor is liable to a prosecution, with its attendant ill repute and loss of trade. In the following case the defendant narrowly escaped conviction, the Bench feeling that she was not at fault and that the real blame lay with the manufacturers. At Barrow, on Oct. 18, Alice Grizedale was summoned for selling mustard adulterated with 10 per cent. of flour or other starchy substance.

Mr. Cornelius Rimmington, of the firm of Moss, Rimmington, and Co., mustard manufacturers, Selby, deposed that he had been a mustard manufacturer for 35 years. Pure mustard would not retain its colour more than 24 hours, and was liable to ferment. The Government made condiment mustard for the Army. They tried to make pure mustard, but they found it would not keep. He had been informed that Her Majesty the Queen and the Prince of Wales used condiment mustard. He did not think 10 per cent. was by any means a large admixture.

By the Chief Constable: In the trade condiment was an admixture. In the case of pure mustard a label was put on the tin stating that it was "genuine mustard." On the ordinary tins the word "admixture" was placed on the label, but in the case of the fancy tins the label containing such notice was placed inside. The public did not like the word "mixture."

The Chairman said the Bench had decided to dismiss the case, but they thought it a great pity that the manufacturer should have departed from the old system of label. Such a departure was liable to give the public a false impression as to the article they were purchasing. If Mr. Rimmington would take their advice, he would return to the old system.

Grocers should not be led to believe by this decision that they run no risk of a conviction if they sell a compound as mustard. Such is not the case, as our columns have repeatedly shown. The following are cases on all fours with the above in which conviction took place:—

At Campden Petty Sessions, Worcestershire, on the 4th October, 1892, Thomas Harris, Co-operative Stores, Welford, was charged with selling mustard containing 10 per cent. of wheat starch, on September 6th. Defendant admitted the offence. P.S. Bunker proved calling at defendant's shop and buying the mustard, and also produced the analysis. Defendant said he usually had papers bearing the words "Sold as a Mixture," but

he had run out of them, and used a plain paper. He did not tell the sergeant it was a mixture. Fined 20s. and 9s. 6d. costs.

At Eastbourne, on the 6th February, 1893, John Hoadley, grocer, Seaside, was summoned, on the information of Joseph Paxton Humphery, for selling mustard which was adulterated with not less than 30 per cent. of "farina" (flour). The Clerk (Mr. Langham) read the certificate of the public analyst, showing 30 per cent. of adulteration. Cross-examined: Witness was not aware the highest-priced mustards were preparations. Mr. Lawson Lewis addressed the Bench on the facts. He said he should prove that the defendant obtained the mustard from the wholesale house as pure mustard, and that it was delivered to him as such. Under these circumstances, he denied that the defendant could be held guilty of a fraudulent sale. The defendant, a grocer, at 159, Seaside, said he obtained the mustard in question from Barry and Co., Finsbury. He ordered from them "fine mustard," and he sold it as such. He had no notice from the wholesale house that it was a condiment. He was paid a shilling a pound by the witness Winchester for the quantity he purchased. Pure mustard could be had at as low a figure as sixpence a pound. (Witness here put in the invoice for the mustard from Barry and Co. It bore an entry of "F. mustard at 7½d. per pound.") Mr. Lewis said he should submit that this invoice was in the nature of a written warranty, and that this exculpated the defendant from any responsibility. In cross-examination, witness said it was a fact that Colman's canisters specifically denoted when mustard was "genuine" or a "condiment." The Town Clerk quoted a case to show that an invoice was not "a written warranty" within the meaning of the Act. Mr. Lewis urged that the appearance of the letter "F" in the invoice, indicating that the mustard was "fine," amounted to a warranty, inasmuch as it expressly defined the nature of the article. The magistrates having deliberated, the chairman said they were bound to convict, as there was a papable adulteration, and the nature of the mixture ought to have been stated. The penalty would be 40s., and costs 18s. 6d. He added that the maximum provided under the Act was £5. The defendant pleaded for a reduction of the penalty, but the Bench pointed out that he had been previously convicted, and that he ought to have taken particular care that the goods he sold were unadulterated. They declined to alter their decision.

On February 22, 1893, at Clerkenwell Police-court, Charles Moss, grocer, of 42, Caledonian-road, N., was summoned, at the instance of the Islington Vestry, for selling a quarter of a pound of mustard which was found, when analysed, to be adulterated with 20 per cent. of added starch. Inspector Cowling proved the purchase of the article. Defendant pleaded guilty, and said the mustard was sold in mistake. He had recently made alterations behind his counter and had shifted the position of several drawers. His assistant sold the mustard out of the wrong drawer by mistake. Mr. Horace Smith inflicted a fine of 10s. and costs.

At Woburn Petty Sessions on April 20, 1894, before C. P. Stuart, H. P. Harris, and H. H. A. Hoare, Esqrs., and Major Downes, George Potter, grocer, of Woburn, was charged by Supt. Shepherd, under the Adulteration Act, with selling three ounces of mustard, which, on analysis, was found to be adulterated with 15 per cent. of flour, on March 19. He was ordered to pay costs, amounting to 11s. 6d.

At Manchester on September 26, 1894, Aaron Light, provision dealer, 32, Bury New-road, was summoned by Mr. A. T. Rooke, inspector of nuisances, for selling an article which was not of the nature, substance, and quality demanded. The evidence was that Inspector Holland went into the shop and asked for a quantity of mustard. It was supplied to him from a tin, and the wrapper in which it was enclosed did not state that it

was a condiment. As a matter of fact, it contained 15 per cent. of starchy matter. In reply to the Bench, Mr. Estcourt, city analyst, said the defendant would have been all right had the wrapper indicated that the article was a mixture. A fine of 5s. and costs was imposed.

It will thus be seen that it is purely a question of chance—of how the magistrates will regard the offence—whether a person summoned be acquitted or convicted. Were the local authorities to carry some of the dismissed cases to appeal, it is the opinion of the ablest legal experts that convictions would be ordered. For example, in the case of Sandys v. Markham, 41, J.P., 53, where evidence was tendered that plain or un-mixed mustard did not keep well, and the magistrates decided that the defendant was excused under subsection 1 of section 6 on the ground that flour was necessary as a preservative, Justices Mellor and Lush, who heard the case on appeal, remitted it back to be re-stated, and expressed a strong opinion that the magistrates were wrong, and the purchasers who asked for mustard ought to be supplied with pure mustard. These facts show that in the Barrow case the dealer ran grave risk. As to wheat-flour being necessary that is untrue; perfectly ripened, first-class quality seed requires neither colouring matter nor wheat-flour. It is the *inferior* qualities of seed that need such "fakings." As to Mr. Rimmington's statement that pure mustard would not retain its colour for more than 24 hours, it is, as our expert readers know, nonsense. The point for retailers to remember is never to buy without a warranty. Food and Drugs Act Inspectors are not anxious to prosecute retailers. They recognise the hardship of the procedure, and, if they had the opportunity, would generally prefer to summons the manufacturer, who profits so enormously by the sale of wheat-flour, etc., at mustard price. As the wheat-flour costs usually one-fifth the price, on a large turnover the admixture means an enormous profit.

WHAT THE MILKMAID ADMITTED.

HER MASTER FINED £20.

At Grimsby, on October 21, Frederick Brocklesby, a farmer living at Killingholme, had to tell the Borough magistrates the reason why the milk he supplied to a retailer named Thomas Frederick Matthews, of Grimsby, on the 23rd and 27th of September, was adulterated to the extent of 25 and 30 per cent. of added water. Mr. T. Mountain appeared on behalf of the Grimsby Sanitary Authority to prosecute, and asked the Bench to inflict a severe fine, as the injury the defendant had inflicted was a threefold one. In the first place he had injured the public by selling adulterated milk, then there was the risk of injuring Mr. Matthews, for people, if they found out the adulteration of the milk, naturally would not buy from him, and thirdly, he had also run a great risk of causing Mr. Matthews to be prosecuted for an offence under the Food and Drugs Act, if the inspector had not come up just before the milk was delivered to Mr. Matthews.—Thomas Frederick Matthews was then called. He said that he was now a fried-fish seller, but in September he was a retailer of milk and lived in Heneage-street. He met the defendant at the Royal Hotel, Grimsby, and entered into a contract with him. He produced the contract, which was to the effect that defendant agreed to supply ten gallons of new milk per day to him for one year, commencing January 1, 1895, to December 31, 1895. The defendant consigned the milk from Ulceby Station by the M.S. and L. Railway to be delivered at New Clee Station. Mr. Brocklesby paid the carriage on the milk. On Monday, September 23, witness was at New Clee Station when the 4.35 train brought in a tin of milk consigned to him by the defendant. Before he could touch it, however, Mr. Hy. Fred Moody, the

inspector, took possession of it, and asked him for the key as the can was locked. He saw him stir up the milk with a jug and then take out a sample of the milk and put it in a bottle which he sealed up. The can was consigned to "T. F. Matthews, New Clee," from "F. Brocklesby, Killingholme." The tin contained four gallons. The next morning he wrote a letter to the defendant and told him that the inspector had taken a sample of the milk at the station. Mr. Brocklesby wrote back saying that he hoped the milk would be found all right. On September 27 ten gallons of milk arrived at New Clee station from the defendant and the inspector took samples of this after the first lot was found to be adulterated. Witness wrote to the defendant on September 28, telling him to send no more milk. Witness produced a bill sent by defendant in which the milk was charged for at 8½d. per gallon. Witness had been fined at that court for selling adulterated milk. The milk on that occasion was supplied by the defendant. The fine was 21s. and the defendant paid 10s. of it.—Inspector Moody deposed to taking samples of the milk on the two dates named and produced the analyst's certificates, which stated that in the first instance the milk contained 25 per cent. of added water, and, in the second, 30 per cent. of added water. When he spoke to the defendant about the matter defendant said he could not account for the water at all.—Mr. Neill, station-master at Ulceby, proved that the defendant consigned the milk to Matthews, and also paid carriage.—Defendant had practically no defence, but stated that he was not aware that the milk had been watered.—Eliza Robinson, the milkmaid, stated on her oath that she never put any water in the milk on the Monday, but, upon being pressed by Mr. Mountain, she admitted that she did put a large jug full into it on the Friday.—The magistrates considered the cases were fully proved, and fined defendant £10, or in default two months' imprisonment, in each case.

MR. HADEN CORSER AND COFFEE-HOUSE MILK.

We are becoming somewhat weary of the yarn about the deficiency of cream in milk being on account of the first comers getting more than their share, owing to the cream rising to the top. It is too thin for anyone but a magistrate, who might be suspected of possessing sufficient intelligence to ask if the vendor could not afford time to occasionally stir the fluid. The latest to swallow it is Mr. Haden Corser, at Clerkenwell, on October 25, when Messrs. Pearce and Co., refreshment room proprietors, were summoned for selling, at their establishment in Farringdon-road, milk from which the fat had been extracted, by skimming, to the extent of 15 per cent.—Inspector Bennett, of the Holborn District Board of Works, proved purchasing a glass of milk at the defendant's shop, which he had analysed, with the result described.—Mr. Ricketts, jun., for the defence, urged that extraction of cream did not mean the same as adulteration under the Act.—Mr. Hale, who appeared for the Board, said the term adulteration included "alteration," and therefore it applied to the milk sold by the defendants.—Mr. Haden Corser said there did not appear to be any adulteration of the milk. There did not seem to be any standard by which milk could be judged in this matter. If milk were put in a pan the cream rose to the top, and the early purchasers got it, whereas if the milk were sold from an urn with a tap, those who came last received all the cream. This was not a case of adding water to milk.—Mr. Ricketts said that his clients had in no way defrauded their customers. The milk was sold generally with cups of coffee and cocoa. A large can containing the milk received in the morning was placed behind the counter, and that, dispensed with cups of cocoa and coffee, was dipped from the larger vessel by a small can, and quite early in the day the cream, which had risen to the top,

was exhausted.—Mr. Hale pointed out that it had been decided in the High Court that it was an infraction of the Adulteration Act to sell milk of the kind sold by the defendants unless it was described as skimmed milk. The section of the Act laid it down that such milk must not be sold without "making disclosure of the alteration."—Mr. Haden Corser: I am sorry my judgment is bound by the case which has been decided in a superior Court. I consider the section referred to was passed to prevent wholesale milk sellers or retail dealers from skimming off the cream and knowingly selling poor milk. I am bound by the decision of the higher Court, although I am convinced that an injustice has been done. I am bound to do an injustice in this case, because a superior Court orders me to do it. I shall impose a fine of sixpence and the cost of the summons.

Like Sir Peter Teazle, we feel disposed to say "damn sentiment," especially when it is such idiotic stuff as that ladled out by Mr. Haden Corser in the above instance.

LINSEED MEAL ADULTERATION.

STRANGE IGNORANCE OF A BELFAST DRUGGIST.

AT Belfast last week, David M'Master, inspector under the Food and Drugs Act, summoned David Stewart, a druggist and grocer, for selling linseed meal adulterated with 25 per cent. of farinaceous food. Mr. A. J. Lewis prosecuted, and Mr. D. M'Gonigal appeared for the defendant. The inspector stated that on September 18 he went into the defendant's shop and purchased a pound of linseed meal. He told the assistant that he was an inspector, and had bought the meal for the purpose of analysis. Witness divided the meal into three parts, gave one packet to the assistant, and sent another to Professor Hodges, the city analyst, and subsequently received the report from the analyst stating that the meal contained 25 per cent. farinaceous food. Mr. M'Gonigal having cross-examined the inspector, the Chairman asked if he (Mr. M'Gonigal) could produce evidence in order to show that the meal in question was what was generally known in the trade as linseed meal. Mr. M'Gonigal said the defendant would swear to the Court that he never knew of anything else as linseed meal in the trade. The defendant was then examined, and stated that in his trade there was an article known as linseed meal, and it was that article that he sold. It was bought by the public as such. If pure linseed was wanted, crushed linseed would have to be asked for. Mr. Lewis—Did you sell it for feeding cattle or for poultices? Witness—I don't know; it was my assistant who sold it. In cross-examination, the witness said that he knew that *one of the essential ingredients of linseed was a form of opium*, but he did not know that when a person asked for linseed meal he should get that stuff mixed with farinaceous matter fit for food. Mr. Lewis asked for a remand, so as to get expert evidence as to what linseed meal was, but ultimately said he would withdraw the case.

A WARNING TO GROCERS.

THE SPICE TRADE.

A RECENT prosecution at Wolverhampton shows that roguery in the spice trade is not yet suppressed. The "spent ginger" swindle and the many grocers who were its victims ought to have taught buyers of spices caution and the need for demanding warranties from wholesale dealers, but experience seems wasted on the grocer. On October 25, George Evans, provision dealer, of Bilston-street, was summoned for selling a quantity of allspice which was not of the nature and substance demanded.—Mr. G. F. Allwood (inspector under the Sale of Food and Drugs Act) said that he purchased 2oz. for 2d., and submitted a

third part to Mr. E. W. T. Jones, borough analyst, who deposed that it contained at least 60 per cent. of ground rice, flavoured with cinnamon and other substances, and no allspice.—Defendant was fined 20s. and costs—total £2 10s.

Grocers who have not yet bought Christmas supplies should be warned by this case.

THE ALUM ABSURDITY.

ANOTHER victim of Mr. Justice Hawkins's extraordinary decision that baking powder is not an article of food, and may, therefore, contain alum, is Mr. Edwin Thomas, grocer, Maerdy, who, at Pontypridd Police-court, on October 23, was fined £2 for a breach of the Food and Drugs Act by selling to Superintendent Evan Jones a 3½ lb. currant loaf which, on analysis, showed that it contained 37 grains of ammonium alum, which was injurious to health.

Our judges ought to feel their bosoms swell with pride at having digged this pit for traders.

RELATIVE DIGESTIBILITY OF MARGARINE AND BUTTER.

JOLLES has carried out a long series of observations upon dogs fed during four consecutive periods alternately with natural butter and with margarine (*Bost. Med. Journ.*). All the discharges were examined daily for unassimilated fatty matter. In the first and second periods more fat and less carbohydrates were given, in the third and fourth less fatty matter and more carbohydrates. Butter was used in the first and third periods, and margarine in the second and fourth. The other articles of food used, such as wheat-meal, sugar, etc., were all of ascertained composition, and were made up into dog biscuit so that the amount of the different kinds of food constituents consumed during each period were accurately known. It thus appeared that where proper care was taken to have all the conditions similar the natural butter and manufactured margarine had practically identical co-efficients of digestibility and nutritive value.

LEGUMINOUS ALIMENTATION IN DISEASE OF DIGESTION AND NUTRITION.

BOVET (*Prasse Med.*) refers to the apparent connection between richness in albumen, or the nitrogenous elements of plants, and organic phosphorus, these two seeming to run parallel. In the leguminosa they are found in greatest proportion. One consequence of the association of phosphates with albumen (vegetable), and the "diffusibility" of phosphoric acid, is that food of this character (leguminous) is very readily dissolved and digested in the alimentary canal, even in the absence of the usual ferments. The presence of a relatively large amount of potash salts in this food is also noted. In the laboratory of Professor Hayem a dog was fed for thirteen days on an exclusive diet of "legumine," a soup free from salt. The result was first a marked decrease in its weight, amounting to one-tenth. An analysis of the gastric juice, at the beginning and end of the experiment showed a marked increase in two most important values, namely, hydrochloric acid and chlorine. This may be interpreted as increased digestive power. A similar experiment on a patient, aged 42, suffering from chronic gastritis, slight dilatation, and loss of motor power of the stomach, weakness and emaciation, showed results altogether comparable to the above. At the beginning the gastric juice, although highly acid, was free from hydrochloric acid. At the end of two months the total acidity was not increased, while hydrochloric acid was present in almost normal amount. Digestion (previously slow and

painful) no longer inconvenienced the patient. Neurasthenia was lessened, and she slept eight hours daily without awaking, something she had not done for a long time previously.

THE LATEST PHILANTHROPIC WORK.

A LEIPZIG society has circularised the druggists of the city, pointing out the suffering caused to flies by the use of sticky fly-papers, and suggesting that the sale of these articles should be discontinued.

It would not surprise us to see such a much-needed society launched in England, with a president and committee of genuine friends of man, such as Sir B. W. Richardson, Rev. Hugh Price Hughes, W. T. Stead, and Mrs. Chant controlling its operations, and that "great" professor, W. R. Smith, as fly analyst to the society. "The law of nature does" not ordain that a fly should be so grievously and wantonly discomforted as to be stuck to a nasty paper; so Sir Benjamin's assistance in the noble work ought at least to be assured, whilst our only professor of forensic medicine and panjandrum in general of public health would find that post of fly analyst quite as philanthropic and remunerative as that of training public analysts in *two years*, after three months' chemistry (vide *Chemical News*, August 30). There is much virtue in your fly analysis, for, after all, the fly makes his mark, be it on fly-paper that sticks him fast, or window pane o'er which he flits, and from the marks he makes he is worthy of high honour in the school of the Smitherian elect.

A FOOD AND DRUGS ACT INSPECTOR FOR MIRFIELD.

THE West Riding County Council wrote to the local authority stating that it had been decided to pay the cost of analysing milk, and also the costs of prosecutions against offenders under the Food and Drugs Act, under certain regulations, copies of which were enclosed. Mr. Ledgard, sanitary inspector, was, in consequence, appointed to act as inspector under the Food and Drugs Act.

Other County Councils would do well to follow this excellent example of the West Riding Council.

FULHAM AND ADULTERATION.

A VESTRY committee recommended that the result of analyses of samples of food and drugs be sent to those tradesmen from whom they have been taken, stating whether they are pure or not. An amendment was moved by Mr. Sayer to the effect that when samples were found pure, tradesmen be informed that no further action would be taken. This was agreed to.

HACKNEY AND ADULTERATION.

THE Public Analyst, Mr. Leo Taylor, submitted his report for the quarter ending September 30. Of 26 milk samples all were exceedingly poor in quality, no less than 18, or nearly 70 per cent., falling below the lowest standard it is possible to adopt for poor but genuine milk. The remaining milks which passed the limit were of a very unsatisfactory quality. The fines inflicted are, in most instances, quite insufficient to deter others from the risk of detection, and as the magistrates do not care to punish small adulterations, many cases where the actual dilution of milk is far greater than certified escape with a caution. Milk, the food of a large proportion of the infant population, should at least be as carefully protected as beer, but where a publican is fined £40 or £50 and costs for 16 per cent. added water, a milk salesman who adds 20 per cent. of water gets off with £2 12s. 6d. including costs, while one who has added no less than 8 per cent. and most likely 12 per cent. or more of water escapes with a 5s. fine. Except margarine and cocoa, the other 15 samples analysed were of good quality.

MILE-END AND ADULTERATION.

MR. HARLAND, Public Analyst, presented his quarterly report, which stated that 75 samples had been analysed. Of 18 milks, 13 were genuine, 4 being admixed with water to the extent of 35, 20, 12, and 5 per cent. respectively, and 1 deficient in cream to the extent of 8 per cent.; of 20 butters, 18 were genuine, 1 consisting entirely of margarine, and 1 admixed with margarine to the extent of 85 per cent.; 1 cheese was adulterated with 34 per cent. of foreign fat. The remaining samples consisted of pepper, coffee, oatmeal, whisky, gin, mustard, and bread, and these were genuine. The samples were purchased nearly evenly in the eight wards.

APPEALS.

MOORE v. PEARCE'S DINING AND REFRESHMENT ROOMS, LTD.

THE MARGARINE ACT

THIS case was heard on October 25, by the Lord Chief Justice and Mr. Justice Cave. It was an appeal from a decision of Mr. Haden Corser, dismissing a summons against the defendants, under the Margarine Act, for having exposed margarine for sale without duly affixing the labels required. Mr. Marten Smith appeared for the appellant, an officer of the Butter Association, and Mr. Ogle for the respondents. In January last the appellant, with a person named Toler, went into one of the defendants' establishments, the Wilberforce, in Great Eastern-street, and asked for some coffee and bread and butter, with which they were supplied. The appellant then asked for four slices of dry bread and threepennyworth of butter, whereupon the waitress said what was supplied there was a mixture of margarine and butter, and on referring to the manager, Mr. Murray, he said they did not supply any of the article to be taken away, but only on bread. The appellant was not supplied with the margarine separately. The margarine in question was on a shelf in view of the customers and bore no label, but there were notices exhibited stating that bread and butter was supplied at a halfpenny a slice, and that the only article used was

a mixture of the best Danish butter and margarine. The magistrate had dismissed the summons on the ground that the defendants being refreshment house keepers were not sellers of margarine by retail, and were like hotel-keepers, and that the Act was not wide enough to include them. The defendants only sold the margarine as a compound article, *i.e.*, spread on slices of bread, and the lump on the shelf was only there for the purpose of being used for spreading on slices of bread, or in connection with haddocks, and was not exposed for sale within the meaning of section 6 of the Act, and that neither the lump of margarine on the shelf nor the slices of bread and butter, nor the margarine on the haddocks required a label to be attached, under section 6. Mr. Smith argued the case at considerable length, contending that the lump of margarine on the shelf was exposed for sale, and ought to have borne a label. Various difficulties were suggested to him by the Court as following on his contention, as, for instance, that each slice of bread and butter, each haddock, or, as Mr. Justice Cave suggested, butter sauce asked for at an hotel, ought, if it were made with margarine, to be wrapped up in paper bearing the word margarine in letters of the size prescribed, and the Lord Chief Justice dismissed the appeal without calling on Mr. Ogle for the defendants. He said the statute was directed to prevent deception, and in this case it was quite clear that there was no deception whatever. Having cited section 6, and carefully analysed its wording, he said he had come to the conclusion that the learned magistrate was right in his decision, and that the appeal must be dismissed. Mr. Justice Cave concurred.



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THE BRITISH MEDICAL JOURNAL (August 25th, 1894), says:—"Its application for some years in 200,000 quarters of the French Army has shown that it is effectual in preventing epidemics of Cholera, Typhoid Fever, Diarrhoea, and Similar Diseases."

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Food and Sanitation.

SATURDAY, NOVEMBER 9TH, 1895.

A STANDARD FOR WATER IN BUTTER.

BUTTER is an article that readily lends itself to fraud. The "pure Brittany" butter producers buy large quantities of margarine, which are duly delivered at their factories, but, strange to tell, they do not sell any margarine, and what becomes of it is a mystery. Like that the Danes import, it is lost in the "Ewigkeit" or somewhere. The recent prosecution at Houghton, when Danish butter was proved adulterated with 75 per cent. margarine, it may be thought throws some light on what is done with the margarine, but, after all, margarine costs something—about half the price of butter—and profitable as this adulteration is, it is really not the best that can be done in the art. For a really perfect specimen of swindling the British public, we think that water made to stand upright, and sold at the price of butter is hard to beat. Consider the gorgeous simplicity of it! Fourteen per cent. is the

amount of water that average butter contains, and sixteen per cent. is a good outside limit. But the consumer does not know this, and as there is no standard he occasionally gets as high as 24 per cent. instead of 14 per cent. It is not very long since the Wholesale Co-operative Society were concerned in a prosecution for excess water in butter, and a little calculation we made on that occasion disclosed the astounding fact that, according to the Co-operative Wholesale Society's own figures and statements their customers were paying about £40,000 per year for excess water made to stand upright, and sold to them at butter price. There is, therefore, a real need for a standard of water in butter. The Warwickshire County Council have recommended that, in the interests of the public, application be made to the Local Government Board to obtain some authoritative expression of opinion as to the standard of water in butter, beyond which persons should be proceeded against. We hope the Local Government Board will make a definite statement upon this important question.

WHERE AND WHEN WAS THIS SWINDLE SANCTIONED?

A STUDY of London's magistrates affords much food for reflection, whether it be Mr. Newton and Professor Lankester, Mr. Haden Corser and Pearce's milk, or Mr. Bros and fines. We have long had the opinion that only Mr. Newton could equal himself—that for sheer incapacity he was unapproachable—but unless our contemporary, *The Daily Graphic*, misreports him, Mr. Cluer runs him hard. At the police-court graced by this beak's presence, Mr. W. W. Young, solicitor to the Vestry of St. Mary, Battersea, attended to support a summons against a dairyman for selling adulterated milk. In the case of William Jones, of St. Andrew's-street, the adulteration, according to the analyst's certificate, was 3 per cent. of added water. *Mr. Cluer observed that such a percentage was sanctioned by the Somerset House analyst.* Mr. Young pointed out that the Vestry's analysts allowed a very large margin, and although the adulteration was recorded at 3 per cent. it was probably larger. Mr. Ricketts, who defended, said that it would not be safe to convict a tradesman under such circumstances. At the suggestion of Mr. Cluer, the summons was withdrawn.

We should like to know when and where such a percentage was sanctioned, and what Act of Parliament gives the incompetent Somerset House chemists power to sanction a swindle of this kind. We do not believe Mr. Cluer or anybody else can furnish a particle of evidence to justify so monstrous a statement.

IS LONDON WATER UNFIT FOR DRINKING?

THERE is a very significant paragraph in the report of Professor W. H. Corfield, Medical Officer of Health for St. George's, Hanover-square. Professor Corfield was struck with the fact that no fewer than 29 cases of enteric fever were certified in November and December last year, as against only 14 cases in three previous months. On investigation, he says, "this follows upon the delivery of insufficiently filtered Thames water when the river is in flood, which was especially noticeable last year, the samples taken in November being very bad indeed." Analysts' reports published by us corroborate Professor Corfield's

conclusions. It is, to say the least, a curious fact that this aspect of the water question is one the County Council leaves severely unconsidered.

SPIERS AND POND'S MILK: IMPORTANT DECISION.

WHETHER "dipping" is sufficient to account for a deficiency of 17 per cent. of cream, or there must be some other cause for such a lack of cream is a question that might well repay investigation, seeing that the average milk from herds contains little short of four per cent. of fat, and as it is doubtless the case that the Holborn analyst took three per cent. as a standard and certified to a deficiency calculated on the standard of 17 per cent. the true amount of deficiency would be so much more than 17 per cent. that it would be curious indeed if "dipping" could account for it. Investigations showing the loss of fat between the first and last milks sold in this manner would be very useful and instructive.

At Clerkenwell Police-court on November 1st, Messrs. Spiers and Pond, refreshment caterers, were summoned by Sanitary Inspector Bennett, on behalf of the Holborn District Board of Works, for skimming, or otherwise, the milk sold by them to the extent of at least 17 per cent. without disclosing to the purchaser such abstraction or alteration, contrary to the statute.—Mr. Munroe, who prosecuted on behalf of the Board, said it was not suggested that the defendants had been guilty of fraud, but it was clearly laid down in the Sale of Food and Drugs Act that it was an offence to sell milk which was minus the proper amount of cream. It might be that it was necessary for the vendor to stir the can or other utensil which contained the milk immediately before serving each customer, for there was no doubt that by the ordinary method of dipping a cup into the utensil the first purchaser would obtain more cream than later comers—and *vice versa* when a tap was used. The question of the interpretation to be placed upon the provision in the Act had been several times argued in police-courts, but the point was now definitely settled by a case heard in the Court of Appeal.—Inspector Bennett proved purchasing a glass of milk from the defendant's buffet at the Farringdon-road Station. He saw a framed notice in reference to the milk sold, but not until his attention was called to it. Evidence having been given by an analyst that the milk was deficient of fat to the extent of 17 per cent.—Mr. Grain, who appeared for the defence, said his clients had been doing their best for many years to serve the public who came to their establishments with the best quality of milk that they possibly could. In consequence of the cases which had been heard in the law-courts they had had manufactured for their establishments, a number of specially-constructed churns. These churns, one of which Mr. Grain produced in court, had to be pressed on the top before the milk would run out, the pressure causing a piston-rod to thoroughly stir the milk. Also for their own protection Messrs. Spiers and Pond had caused notice-boards to be placed in conspicuous positions in their establishments announcing that they purchased all milk sold by them under warranty of its purity, but that they could not guarantee it either new, pure, or with all its cream. Further than this, a similar inscription actually appeared on each glass handed to customers.—Evidence having been given for the defence, Mr. Plowden said it was practically admitted by the defendants that 17 per cent. of the cream had disappeared from the milk sold. It was clear that every precaution, in fact, extraordinary precautions, had been taken by Spiers and Pond in the matter, but the question was whether the notice and the inscription on the glass amounted to a "disclosure" to the purchaser. He held that they were not sufficient to protect them against the Act. If they were held to be a protection against the Act, then Spiers and Pond would be under

no obligation to sell pure milk to anybody. They could contract themselves, as it were, out of the Act of Parliament, and purchasers would be left to take the risk of the kind of milk they bought. He imposed a fine of 40s. and three guineas costs.

A NEW FUEL.

M. Paul D'Humy, French naval engineer, states that he has successfully carried out a series of experiments having for their object the conversion of petroleum and other oils into hard substances for fuel. M. D'Humy states that by his process, the oils are changed from their fluid state into hard homogeneous masses, which are not affected by exposure to climatic heat or cold. He claims that the fuel will entirely change the present system of propelling steamers of all kinds. The solid cakes are smokeless and odourless, and when ignited, they burn only on the surface, and throw out an intense heat. The cakes can be made of any size or shape, and can be stored anywhere without danger, as the substance of which they are composed neither evaporates nor explodes. When used for steam producing purposes, the fuel requires very little draught, and it only produces from 2 per cent. to 3 per cent. of ashes. A ton of the fuel, M. D'Humy says, is equivalent to at least thirty tons of coal, and the cost of it will not be more than £1 to £2 a ton. In manufacturing steel, he says, five hundredweight of solidified petroleum, costing about 6s., will melt a ton of metal. At present it requires three tons of coke, costing from £2 10s. to £3. The fuel, too, can be used with safety for domestic purposes. M. D'Humy exhibited samples of all kinds of solidified oil, from the best petroleum to the lowest grades, some of the oils being presented in the form of hard blocks, others in a kind of paste, and others in a dry powder; and he explained how they could be mixed with each other, or mixed with earth, and so utilised.

M. D'Humy does not say that his invention will cure corns, warts, bunions, scarlatina, the Salvation Army, Professor Smith and Trilby. We, however, do not doubt that it will do all this and more, and that it is M. D'Humy's modesty that has led him to so limit its claims.

MIRACLE IMPOSTURES.

SOME years ago the public were regaled with a series of marvellous statements as to apparitions of celestial beings having been seen on a wall at Knock, in Ireland, and for a time a steady stream of pilgrims flowed thither, one of whom (known to the writer) secured the priceless boon of a piece of dirt from the wall, which dirt was afterwards given—dissolved in water—as a potent and blessed remedy sure to exercise a miraculous cure to an infant suffering from small-pox. Of course, the infant died.

This Knock humbug is recalled to our mind by another humbug which last week was dealt with as a business concern by a District Council, who decided the terms upon which St. Winefride's Well, at Holywell, is to be let to the priest in charge of the Roman Catholic Mission. It seems that the enormous number of pilgrims attracted by the reputation of the shrine suggested to the District Council the mundane consideration of raising the rent some 50 per cent., although it was urged with much show of reason that the town already benefited by the influx of visitors. Upon the question of granting a lease the secular tone became still more pronounced, but the proposition that "if a man improved his business and had his rent raised he should have some security for the future," failed to find adequate support, and it was decided to exact £150 per annum, without lease, in place of the £100 hitherto paid. So, at least, the *Manchester City News* says.

We know a man who, being lamed when a boy, went to this sacred well to be cured of his lameness, and, as

might have been expected, he is lamer now than when he made his pious pilgrimage. We have even persons of supposed intelligence, occupying important public positions, pilgriming to Lourdes filled with ignorant superstition, and returning as ignorant and superstitious as when they set out, one of them, the Duke of Norfolk, being made Postmaster-General; but no one thinks of hauling him off to a lunatic asylum, as a free-love professing Socialist was dealt with only the other day. On the contrary, even Sheffield, which he has squeezed to the flabbiness of a sucked orange, has gone on its marrowbones to ask His Grace to honour it by accepting its mayoralty. There were even persons, we believe, who looked with eyes of worship on that other Duke of Norfolk, who asked Sheridan how he might so disguise himself for a masked ball that no one would know him, and to whom Sheridan said: "Wash yourself!" History reveals not if he took the advice; the odds, however, were that he didn't, inasmuch as he only suffered ablutions when his servants picked him, drunk, out of some gutter, took him to a palace that ought to have been a sty, washed and dressed him, when he forthwith hied him out to his wallow. From such a stock it may be scientifically true that there can only be produced what Max Nordau calls degenerates, which may account for the Lourdes pilgrimage and the prosperity of so many miracle quackeries. The able and luminous editor of the *Medical News*, Philadelphia, has an admirable article in the issue of October 19 on "A Humbug at Lourdes":—

"It is scarcely worth while for a medical journal nowadays to call attention to cases of alleged faith-healing at a religious shrine or under any form of religious excitement. The essential characteristics of these cases are so well known to science, and generally so well understood by intelligent men, that to dwell upon them is usually to waste space and opportunity. The flagrant offenders in these cases are not, as a rule, the patients themselves, for in most instances they are self-deluded; but they are the ecclesiastic authorities, who persistently parade these cures and obstinately palm them off as evidences of a supernaturalism which they themselves should know well enough has had no hand in the business.

"It is rather the mode now, in our *fin de siècle*, for ecclesiastics of all denominations to affect to believe that theology has no real quarrel with science; that when each is shown in its true light the lines of convergence are seen to be approaching to a gratifying extent. Scientists await the evidences of this approach with judicial calmness; but meanwhile they note that no spurious cases of demon possession, witchcraft, and faith-cure arise in any quarter of the earth, but that they are hailed by the ecclesiastic party with unbounded delight and vociferous acclaim as the theologic contribution to the love-feast of science and religion. It is therefore a matter of considerable interest and importance to note the recent exposure of a fraud at Lourdes, because the case for a short time baffled common sense as well as science, and gave the priestly party a conspicuous opportunity for unctuous but premature jubilation.

"We refer to the case of Delannoy. This impostor was a warder in the Paris hospitals from 1877 to 1891. He thus became familiar with the superficial appearances of many diseases, and also became so enamoured with hospital-life that this became for him the ideal of existence. With almost nothing to do and with others to do it for him—this in brief was to be Delannoy's elysium. He resolved to enjoy it to its full extent. He therefore made his plans, which were extremely simple, and began to sham the early stages of locomotor ataxia. We do not know what he did with his knee-jerks, but he evidently did not reinforce them, and we suppose that his pupils had not yet become involved; but all the other early symptoms of tabes, especially of the sensory type, being easily simulated, he assumed his rôle, and made his *début* at the Salpêtrière, where he

promptly victimised Charcot. After this eminent savant had made a diagnosis things were evidently easy for Delannoy in Paris. Charcot's diagnosis was a *passé-partout*. The doors of all the hospitals stood open to the malingerer. Who, in Paris, would dispute the diagnosis of the great neurologist?

"From this period Delannoy's course was steadily onward and upward, until he almost attained saintship. Some of his adventures, however, were harrowing and almost bring a tear—probably *did* bring Delannoy's tears. He was for a time in Callard's wards in the Hotel Dieu, but, liking change of scene, he went, in an evil hour for him, to the Necker Hospital, where Rigal awaited him with the inevitable hot iron. Here he was burnt in a red-hot fashion, and in the intervals was blistered in order to keep up the revulsive effects. The impostor endured this as long as he could and then fled. Later, under Ball, he was treated with belladonna and morphin, much to his satisfaction; but apparently tiring even of morphin in a year he professed himself cured, and left. Relapsing, he once more encountered Rigal with hot irons, but soon sought more congenial quarters, and passed successively through the Beaujon, the Charité, the Lariboisière, and other hospitals. Some of these institutions he entered more than once. He was finally captured by Dujardin-Beaumetz in the Cochin Hospital, and was hung up. The suspension treatment was then all in vogue in Paris, and Delannoy, probably knowing that he could not escape it anywhere, submitted to this benevolent and optimistic therapist, who strung him up fifty-eight times in two months.

"But these various therapeutic adventures need not detain us, although they occupied Delannoy for several years. Finally, either because he wearied of this burden of pathology or because he was convinced that tabes is practically an incurable disease, and will not yield to hot irons and suspensions, he resolved to give up the game. It occurred to him that the easiest and most rational way to give it up was to go to Lourdes and be cured. He foresaw fame and even gain at the shrine; and then, too, it offered him a neat way out of one deception by helping him to slip gracefully into another, and so to return to the world with the posterior columns of his cord all right, and no questions asked. He resolved to abandon medicine and to seek the church.

"Accordingly Delannoy went to Lourdes. He arrived there in a most pitiable condition. He was carried to the Virgin Mary's Grotto, kissed the ground and remained a long time prostrate before the Holy Sacrament displayed at the altar. Suddenly, according to his own veracious statement, he had a feeling of a mysterious inner force, which caused him to stand, to walk, to drop his crutches, and, we suppose, to resume his reflexes. This transformation was, of course, the signal for the other pilgrims (poor dupes, probably mortally diseased) to sing hymns of praise. The beaming fathers of the Grotto were not slow to take the bait. They treasured up all the details and proofs of this modern 'miracle,' and prepared to confute the infidels. They supervised an appropriate spectacular display; and in the evening a torchlight procession of pilgrims was seen 'threading its way up the zigzag paths of Massabielle, rejoicing for the miracle.' Delannoy was, of course, in the front rank of this procession. The next day the impostor was examined medically in the presence of an archbishop and a bishop, and was declared *ex cathedra* to have been cured of locomotor ataxia. The miracle was duly recorded in the register of Notre Dame de Lourdes, and Delannoy, without undue delay, returned to Paris as an honoured guest of the national pilgrimage.

"It is needless to say that the physicians of the Paris hospitals were staggered by this case. They examined Delannoy again and again after his return, and not one of them seems to have suspected the truth even then. A telegram was sent from Paris to

Lourdes expressive of this medical perplexity. It said, 'He walks like a country postman.' Thus in homely phrase science bore testimony to the truth of the miracle.

"In the following year (1890) the fathers of the Grotto appointed Delannoy overseer of a home for invalids awaiting to be miraculously cured. Such an institution might, we submit, be henceforth called a 'Hôpital Delannoy.' It would thus help to preserve a unique reputation, which soon spread over Europe, America, Asia, Africa, and Australia. From all these parts of the world the ex-tabetic was soon in receipt of rich presents, with prayers that he would intercede with the Virgin, with whom he was supposed to have extraordinary influence. The rogue was now at the pinnacle of his fortunes.

"But Delannoy was evidently not made to endure either fortune or tabes. He wearied of one as he did of the other. In about a year he stole 400 francs of the good fathers' money. As there was nothing miraculous about the theft Delannoy decamped. He again sought Paris and gained admission at St. Anne's Asylum as a lunatic; was discharged, and admitted again on a doctor's certificate, and this time stole 1,800 francs of the hospital funds. This was the beginning of the end. Having devoted himself so successfully to medicine and theology he was now about to try his experience with the law. There was to be no humbugging the law, however. He was arrested by the police, and was pronounced by some shrewd police-surgeons to be a malingerer of extraordinary skill. He was tried, convicted, and sentenced to four years' imprisonment and ten years' police surveillance.

"Not the least notable feature of this case is the fact that Delannoy deceived Zola. The realistic novelist could not explain the 'realism' of this supposed cure. It is to be predicted, in conclusion, that while Delannoy deceived both the physicians and the priests, there will yet be seen this difference: The former will acknowledge their error, but the latter will not abolish Lourdes."

Such, however, is the beauty of our system of political rot that a Duke of Norfolk, who wallows in this kind of mummery, is made Postmaster-General, whilst a level-headed, practical man who understands postal needs, has a brain to conceive reforms, and a will to carry them into effect, like Mr. Henniker Heaton, is thrust from his proper place. From a study of both, we are inclined to the belief that even worse than miracle impostures are our own dearly cherished political ones. There is the same mummery and the same result—Nothing!

ADULTERATION IN CHISWICK.

MR. J. H. CLARKE deserves well of the Chiswick inhabitants for the care he takes to secure pure food for them. His last report for the year ended March 31, 1895, shows the following excellent record of work done. Samples of food sent to the County Analyst during the year:—New milk, 77; skimmed milk, 4; sweets, 2; malt vinegar, 1; butter, 22; coffee, 1; ground ginger, 3; mushroom catsup, 1—total 111.

Five samples of new milk were adulterated to the extent of from 7 to 50 per cent. of added water, and seven samples had been deprived of their fat to the extent of from 10 to 70 per cent.

The sample of coffee was adulterated with 20 per cent. of chicory, and seven samples of butter were adulterated with from 70 to 80 per cent. of foreign fat, and three samples consisted *entirely* of foreign fat, containing no butter fat whatever.

In addition to the samples of milk adulterated, 13 others were reported as being of inferior quality.

Twenty summonses were issued, and resulted in fines and costs amounting to £38 17s., as compared with £25 4s. the previous year.

Two summonses were dismissed on the vendors' production of a written warranty, under Section 25 of the Sale of Food and Drugs Acts, which being proved to the satisfaction of the magistrate, entitled them to be dismissed from the prosecution; and in consequence of certain legal difficulties, we were unable to proceed against the offender for false warranty.

Early in the year I visited several coffee-houses in disguise, and under the pretence of taking refreshment, I procured samples of the so-called "butter" as supplied to persons, chiefly of the working-class, which upon analysis proved to consist (with one exception) entirely of foreign fat: the usual proceedings followed, and each of the proprietors were fined.

Two grocers were fined £3 5s. and £1 12s. 6d. respectively, for selling margarine contrary to the provisions of the Margarine Act.

The comparatively few cases of milk adulteration indicate an improvement in the quality of this important food supply in the district, which I venture to suggest is the result of the number of samples taken. You will observe that the number of milk samples taken are in excess of any others, the reason being the gravity of mixing water (which may be derived from any source) and the comparative ease by which this article of food may be tampered with, coupled with the fact that a large number of young children are fed entirely upon milk, which, as everyone knows, should be of the purest and very best quality.

It is a remarkable fact, however, that the milk consumed by persons living in the country is totally different to that supplied in the London districts, although we are frequently told that we are being supplied with milk direct from the country farms. The reason is obvious when we consider that the milk has to pass through several hands before it reaches the consumer, and its association with colouring matter and admixture of separated milk, which, if judiciously mixed, does not fall below the analyst's standard, or at least classes with the "inferior quality," and so escapes the arm of the law.

The accurate analysis of milk is alleged by many to be a matter of impossibility, and they suggest that many an innocent person is prosecuted through no fault of his own in consequence of the varying quality of the milk yielded by the cow, and there is certainly a great deal of truth in the suggestion, but as one of our Stipendiary Magistrates once remarked, when adjudicating upon one of our cases, after hearing the evidence of several specialists, "a person who knowingly feeds his cows in such a manner as to produce a quantity of milk without any regard to quality, is practically committing a breach of the law."

The dairymen in our district, however, are to be congratulated upon the fact of the experience and impartiality of our Analyst, which commends itself by the manner in which his disputed analysis has received the support of the Somerset House chemists; and in fact, two or three samples which have been referred to the Inland Revenue officials have been declared by them to be double the adulteration reported by the Council's Analyst.

The Adulteration Acts have of late been a subject of considerable discussion, and the appointment of local inspectors strongly recommended, who, acting under the direction of their respective Authorities, can do a great deal in checking the sale of adulterated and inferior food. No one will dispute the importance of such a work, and the consequent expenditure of a small annual sum (after deducting the amount of fines and costs recoverable by the Council), which is a good outlay for the benefit of health and the suppression of disease.

The late Government realised this fact in the appointment of a special committee to investigate the working of the Adulteration Acts, with a view to their amendment, in consequence of the many legal difficulties attending various sections of these Acts.

This Committee have met on several occasions, and

heard the opinions and evidence of eminent men, and it is generally admitted that the Adulteration Acts require amendment, and that the subject is one of very great importance as affecting our food supply.

A DISHONEST PRACTICE.

MR. PLOWDEN gave an important decision at Marylebone on October 30 upon a novel point which arose in connection with a summons taken out by Mr. George Arthur Dowse, of 42, Lancefield-street, Kilburn-lane, against Robert Stratton, of 41, Sackwell-lane, Kingsland-road, for on the 13th inst. maliciously damaging a quantity of pure milk by adding separated milk to it.—Mr. Charles Steel, solicitor, appeared to prosecute.—The evidence was that the defendant was one of Mr. Dowse's employees, and, being suspected of manipulating the new milk with which he was sent out to sell at 3d. per quart with skimmed milk which he purchased at the rate of a penny per quart, to his own advantage, he was watched and eventually stopped. Being questioned, he said, "I have only been buying separated milk like the rest of them."—Mr. Plowden, in giving his decision, said the short facts were that the defendant, being entrusted by his master to sell 8½ gallons of fresh milk, added to the milk on his own account 4½ gallons of skimmed milk. Before, however, any of the milk thus damaged was sold, the fraud was detected, and the master put the damage sustained at 17s., being the value of the milk before the skimmed milk was added. It might, he thought, be conceded on these facts that the defendant had no animus against his employer, and, at first sight, it seemed difficult to distinguish the case from that of "Richardson v. Hall ('Justice of the Peace,' 54, 346)." He thought, however, a distinction was to be found in the fact that in this case whatever the intention of the defendant might have been, his act was wilful and wrongful, and resulted in a direct damage to his master, whereas in "Richardson v. Hall" there was no direct damage, the servant paying to his master the full retail value of the milk he had taken out. He (Mr. Plowden) therefore convicted him of wilful damage, and fined him 17s., the worth of the milk, and in addition inflicted a penalty of 21s., with 2s. costs.—The defendant asked for time in which to pay the money, but Mr. Plowden declined, saying his conduct was very dishonest indeed.

CURSING THE INSPECTOR.

AT Clerkenwell last week, Alfred Goldfinch, dairyman, of 37, Freeling-street, was summoned for selling milk with 45 per cent. of added water. A County inspector under the Food and Drugs Act gave evidence that on September 29 he met the defendant in the street selling milk. He had just served a customer, and witness asked for a pint of milk out of the same can. At first the defendant hesitated, and then said that the milk was not pure. Asked if it was skim milk, the defendant replied "Yes." Witness purchased it as skimmed milk, but not on the understanding that it contained water. In answer to Mr. Horace Smith, Mr. Hoare (who was for the prosecution) said he feared that it was the custom of the trade to add water to skimmed milk. The analyst's examination showed that the sample submitted to him had 45 per cent. of added water. Mr. Smith fined the defendant 30s., and 12s. 6d. costs.—Frank Field, of 28, Tibberton-street, York-road, was summoned for selling milk to which had been added 32 per cent. of water. The inspector found the defendant, a very old man, hawking milk in the street, and bought of him a pint of what purported to be new milk, and what the defendant assured him he would find "a very good condiment." (Laughter.) The defendant now insisted that he had sold the article to the inspector as milk-and-water, and as such he had supplied it to all his customers. In fact, he had gone about the street crying "Milk-and-

water!" (Laughter.) Mr. Smith: But wouldn't it be better to sell pure milk, and let the customer add any water he might want? You did not charge for the water did you? (Laughter.) The defendant replied that some of his customers found it more convenient to have it added for them. (Laughter.) He was, he said, trying to earn an "honest living," and it was hard lines that he should be prosecuted by the inspector, who had been "telling lies." Mr. Smith said the defendant's way of living was most dishonest, as he had been selling rubbish to poor people. This case was as bad as the last one, and the defendant would be fined 20s. and 12s. 6d. costs. Time was asked for but refused. The defendant then suggested that his cans should be sold to pay the fine. After that he would go to the workhouse. He was removed, cursing the inspector, and repeating his determination to become chargeable to the parish.

LIVERPOOL CHAMBER OF COMMERCE AND THE FOOD AND DRUGS ACT.

CORRESPONDENCE has taken place between the Liverpool and other leading chambers of commerce on the subject of a proposal on the part of the Liverpool Provision Trade Association, that the sale of food and drugs act should be amended in the provisions applying to prosecutions under the act for adulteration. The association proposed that provision should be made to the effect that if, on the hearing, a defendant produced a certificate of a member of the Society of Public Analysts, who had analysed the article in question, that no offence has been committed by the defendant, he should have the right to require that the article be submitted to the Somerset House officials for analysis. The association considered that the production of such a certificate should, like that of the public analyst, be sufficient evidence of the facts therein stated, and that the personal attendance of the analyst should not be required at the hearing. In making these suggestions, the association have been careful to avoid saying anything which might interfere with the publicity of the prosecutions, as they were of opinion that although occasionally a hardship may be inflicted on an innocent manufacturer or trader, yet it was felt that such publicity was a wholesome deterrent to adulteration. The views of the association had been generally approved by the principal chambers of the country. The subject having been discussed at the recent conference with the members for Liverpool, it was understood that Mr. Bigham, M.P., was willing to take steps in the direction desired, and a memorandum on the subject has been prepared by Messrs. Bellringer and Cunliffe for the Provision Trade Association, which will be handed by the chamber to Mr. Bigham for his guidance.

HOW RETAIL GROCERS ARE VICTIMISED.

HENRY WOODMAN, grocer and provision dealer, Shenstone, was summoned last week at the instance of Harold Van Tromp, County Inspector under the Food and Drugs Act, for selling to William Grasson, on September 20, butter which was not of the nature and substance of the article demanded, being margarine and containing only 13 per cent. of real butter. There were two other charges against defendant, first with exposing margarine for sale without the necessary label, and secondly with selling margarine to William Grasson, without a wrapper showing the nature of such article. Mr. Connor, solicitor, Birmingham, watched the case on behalf of parties interested. Mr. Van Tromp, in opening the case, said his assistant visited defendant's shop at Shenstone on September 20, and purchased from Mrs. Woodman ½ lb. of what was supposed to be butter, and for which he paid 7d., the butter being charged at the rate of 1s. 1d. per lb. On its being submitted to the County Analyst it was found to contain only 13 per cent. of butter, and was in reality margarine. Under

the circumstances, he asked for a heavy penalty, as it was a case of gross fraud, inasmuch as an article was being sold to the public at the rate of 1s. 1d. per lb., when it was not worth more than 5d. or 6d. William Grasson, assistant to Mr. Van Tromp, proved purchasing the supposed butter. Defendant said he bought the goods for butter from a wholesale Birmingham firm, and protested that he had never sold margarine in his life. Mr. Van Tromp said if defendant had been defrauded by vendors he had his remedy in the County Court, and could recover damages. The Bench thought it was a very serious matter to sell such an article to poor people and charge them the same price as for good butter. Defendant would be fined £2 and costs in each case, or the alternative of three months' imprisonment. The fines and costs altogether amounted to £8 8s. 6d.

WEIGHTED SILK.

WE are glad to learn that the improvement in the silk industry not only continues, but is of a very substantial character. Mr. Cameron, who presided at the annual meeting of the Macclesfield Chamber of Commerce on Tuesday, said that as to the staple trade of the borough he heard on all hands that the greatest difficulty was not to find work, but workpeople, and he hoped that it might long continue so. We hope so, too, and heartily join with the *Macclesfield Courier* and Mr. Bromley-Davenport in "urging upon all who have anything to do with the trade the enormous importance of retaining this hold which the British silk trade appears to have got upon the market." Mr. Cameron thinks it would help our manufacturers if an Act of Parliament could be passed to compel importers to state to what extent the silk had been weighted. "It was," he said, "highly desirable that the general public should know whether they were buying silk or tin from the foreigner; and as gold and silver were hall-marked, and whisky was marked so much per cent. under proof—(laughter)—so he thought the foreigner ought to show on the silk goods imported into this country, by declaration, the amount of pure silk and other material of which they were composed. He threw out this suggestion for the edification of Mr. W. Bromley-Davenport, who might bring a simple Bill into Parliament to this effect. He would also suggest that the Silk Trade Protection Association should get a decision in the law courts as to whether it was legal to sell this adulterated stuff as pure silk. If this could be done it might do something towards keeping out of the country the £13,000,000 worth of foreign silk which was said to be very largely adulterated." We do not think Mr. Cameron has estimated the difficulty in the way of carrying out his suggestion, and do not suppose it would help manufacturers much if it were carried out. The only way of keeping foreign silk out of the British market is to surpass, or at least to equal, the foreign goods. If this has now been achieved, the question of supplanting the foreigner is one of time and energy only.—*The Warehouseman*.

A FARMER'S ADULTERATION.

AT Leeds, on October 29th, Barnabas Parker, farmer, Wood Nook Farm, Cookridge, was charged before Mr. C. M. Atkinson, the stipendiary magistrate, with having sold adulterated new milk to a dealer in Hunslet, on September 27th. Mr. J. Harrison (Town Clerk), prosecuted, and Mr. H. A. Child defended. The evidence for the prosecution was to the effect that Mr. W. B. Walker, Inspector of Food and Drugs, took a sample of defendant's milk on its arrival at Leeds station, and that Mr. Fairley, the City analyst, had certified it to contain 18 per cent. of added water. The defence was that on the day in question the milk was adulterated by a farm-servant in defendant's absence; and it was stated that

the man had since been discharged.—A fine of £10 10s. was imposed, defendant having been previously convicted of a similar offence.

HOW OLD MILK IS MADE.

AT Sheffield, on Nov. 1, Walter Ashton, milk seller, was summoned for having sold to Inspector Forster, a sample of old milk which was not of the nature, substance, and quality of the article demanded. The certificate of the analyst stated that the sample contained of old or partially skimmed milk 80 per cent., and of added water 20 per cent. After Inspector Forster had given evidence, it was stated that in the year 1892 the defendant was fined twice for refusing to sell a sample of milk to the inspector, in the first instance £2 and costs, and in the second £6 and costs.—The defendant admitted the sale, but said that it was not old milk which he had sold, but new milk diluted with water, which he said he found his customers preferred to old milk.—In cross-examination by Mr. Sayer, he said that it was his practice to dilute new milk to the extent of one quart of water to two gallons of milk, and in this instance the sample consisted of water and fresh milk, which had not been deprived of any portion of its cream.—It was pointed out by Mr. Sayer that the certificate of the analyst was evidence, and that such certificate stated that the milk had been diluted with one-fifth of water, instead of one-eighth, according to the defendant's statement.—On being asked by the stipendiary magistrate whether he would like the case adjourned for the attendance of the analyst, the defendant said he did not see that that would do any good, but, after some hesitation, he said he would like the remaining sample to be sent up for analysis by the Government analysts at Somerset House.—The case was ultimately adjourned, pending the receipt of their report.

SOPHISTICATION OF VANILLA.

AN enterprising tradesman named Gaston Barathon has been carrying on a little business, both exclusive and profitable, which, however, has lately been brought to an abrupt termination. This ingenious person conceived the idea of buying up old and worthless vanilla at a nominal price, and artificially renovating it in such a manner as to make it appear like the best Mexican variety. His process was very simple. It consisted in restoring the glossy appearance by steeping the pods in tincture of benzoin, and a judicious application of powdered glass did duty for the crystalline efflorescence. The renovated article was then sold at the rate of 120 francs the kilo., twice the value of the genuine vanilla. Unfortunately his business was interrupted by legal proceedings, and M. Barathon found himself prosecuted for adulteration, and also for arrogating to himself an imaginary gold medal, which he pretended had been awarded him at the Antwerp exhibition. For these offences he was condemned to a penalty of 1,000 francs and six months' imprisonment, during which he will have leisure to reflect on the unprofitableness of misdirected talents.—*Pharmaceutical Journal*.

ANTINONNIN.

C. O. HARY and W. von Miller have investigated the properties of a new compound, potassium ortho-dinitro-cresolate, to which the trivial name of "antinonnin" has been applied, and proved that a solution in soap water of 1:1500 to 1:2000 is destructive to all common injurious parasites on plants, though without any deleterious action on the latter. Professor Aubry, of Munich, finds that a definite antiseptic and germicidal action is indicated when yeast is treated with antinonnin, the bacteria present being destroyed, though the yeast itself remains unaffected by solutions containing as much as five per cent. of the compound.

THE NITRATE BOOM AND THE GOLD ONE.

A FEW years ago Nitrates were to make everyone's fortunes, as Barney Barnato and his gang's schemes are to do to-day. The following is an instructive object-lesson:—

"PRIMITIVA NITRATE.—How are the mighty fallen! The directors of the Primitiva Nitrate Company have been compelled to appeal to their shareholders in *forma pauperis*. They owe their bankers so much, and the Chilian Government so much, and hoped to have been able to discharge their debts out of their earnings. But these have ceased. The officina is closed, the staff reduced to the lowest possible limit, and everyone is on his ham-bones waiting, like Mr. Micawber, for something to turn up. In the meantime Colonel North and his colleagues do not want the brokers in, and so they boldly propose to reconstruct. For every £5 share at present held will be given a £1 share credited with 10s. paid up. The original capital of £200,000 will thus be reduced to £40,000, and a sum of £20,000 will be available for the discharge of debts. This is an unhappy ending for a fallen giant. When the nitrate boom was at its height Primitivas were gaily talked up to £100, and they actually changed hands at £39 in December, 1888. During the four quarters ending June, 1889, no less than £3 10s. was distributed in dividends, but from that period up to the present the luckless shareholders have had no share in the profits. As recently as March, 1894, the shares were above par, but they have gradually dwindled, until now they can only be disposed of by way of bonus to the proverbial pound of tea."—*The Star*.

MANCHESTER WATER.

A CORRESPONDENCE in the *Manchester Guardian* has brought again into prominent notice the very dangerous practice of using lead pipes for water. It is beginning to be recognised that a great amount of disease has its origin in this insanitary practice. One correspondent says:—

"I have made the water and lead pipe question a study for years, and must confess I am amazed at the way the various water authorities still treat this subject. Again and again the medical faculty have raised their voices in the strongest possible language against the use of lead for either storing or conducting drinking water. Still the authorities insist in their printed rules that lead must be used for service pipes: and where driven by the most glaring cases of lead poisoning in its deadliest forms to see their error, they have resorted to carting lime or soda into their reservoirs. If water authorities would forbid the use of lead pipes for new work the evil would gradually come to an end, for the public would soon see where the evil existed, and would, where necessary, speedily replace their poisonous pipes with healthier ones. Depend upon it, if all the suffering caused by lead service pipes could be suddenly revealed, the nation would stand aghast. The Manchester water is of most excellent quality and life-giving if drunk pure from the mains, and the supply is a magnificent one, something to be proud of; but lead service pipes are a mistake."

THE CAUSE OF MUCH SICKNESS THAT IS OFTEN OVERLOOKED.

To the last meeting of the New York State Medical Association, Dr. W. H. Robb contributed a novel paper. The sanitary condition of two houses, one in the city and the other in the country, was considered, and the conclusion was drawn that various cases of illness, e.g., diphtheria and remittent fever, occurring in these two houses during a period of many years, were due to the existence of "dry rot" in the timbers of the

cellars. One case of remittent fever had persisted for eighty days when, at the suggestion of Dr. Harris, then secretary of the State Board of Health, who saw the case in consultation, and was disposed to attribute the prolonged illness to the dry rot in the cellar-flooring, the boy was removed to the upper part of the house. The remissions ceased after another day, and convalescence was rapid and uninterrupted from that time on.

STAFFORDSHIRE COUNTY COUNCIL — MILK ADULTERATION AND INFANTILE MORTALITY.

MR. BAGNALL, in moving the consideration of the Sanitary Committee's minutes, said that the fines imposed under the Food and Drugs Acts, seemed comparatively small. This was satisfactory to a large degree, because it showed, he thought, that adulteration had to a great degree been stamped out in the country. But still, the fines imposed in some cases for milk adulteration appeared very small, and when they considered that the county medical officer attributed the large infantile mortality to a large extent to the adulteration of milk, and when they looked at the fact that the sale of adulterated milk was robbery in its worst form, it did strike him that offenders should not be spared.

ANTISEPTIC GAUZES.

A PECULIARLY heartless and dangerous fraud has recently been discovered, viz., that antiseptic gauzes very seldom warrant the claims by the makers. Samples of so-called 20 and 10 per cent. iodoform gauzes gave on analysis only 2 and .896 per cent. respectively, and in some instances it was found that an aniline dye, auramine, had been used to imitate the iodoform colour. The fraud can be easily detected as the colour is readily dissolved out by water.

THE "YORKSHIRE RELISH" CASE.

MR. JUSTICE STIRLING has at length delivered judgment in this important case. He said the action was brought by the plaintiff for the purpose of obtaining an injunction, restraining the defendants from passing off, or attempting to pass off, or enabling others to pass off, sauce not of the plaintiff's manufacture, as and for the goods of the plaintiff, by the use of the term "Yorkshire Relish," or in any other way. The plaintiff carries on business as a drysalter in Leeds, under the style of Goodall, Backhouse, and Co., and he and his predecessors in title had for the last 35 years manufactured a sauce, sold under the name of "Yorkshire Relish," which sauce had been largely advertised, as appeared by the fact that no less a sum than £400,000 had been spent in advertising during the last thirty years. The result was that the plaintiff's sauce had become extensively known, so much so that in 1893, six million bottles were sold to customers in different parts of the world. On the plaintiff's bottles were placed labels on which the words "Yorkshire Relish" had always formed a conspicuous part, and this label had been, and still was, duly registered under the Trade Marks Act. In 1884 the plaintiff, in addition, registered the words "Yorkshire Relish" by themselves as a trade mark, but on February 15, 1893, Mr. Justice Chitty, on the application of the present defendants, made an order for the removal of the words from the register, and this order was afterwards confirmed by the Court of Appeal and the House of Lords. Early in 1894 the defendants put upon the market a sauce of their own manufacture, which they designated "Yorkshire Relish," whereupon the present action was instituted. In July, 1894, a motion was made for an injunction, and upon the evidence then adduced his Lordship thought that the plaintiff was entitled to an order restraining the defendants from using the words "Yorkshire Relish" as descriptive of, or in connection with, any sauce, manufactured by them, without clearly distinguishing such sauce, or relish, from the plaintiffs, and an appeal from this order was dismissed by the Court of Appeal. His Lordship's decision upon the motion was based upon the following grounds:—(1) That the term "Yorkshire Relish" was not descriptive but a fancy name. (2) That the name, though not one to which the plaintiff had an exclusive title, did nevertheless in point of fact denote in the market the plaintiff's sauce, and (3) That the defendants had not taken sufficient precautions to prevent purchasers from being

misled into buying their sauce when they meant to buy the plaintiffs. With regard to the law of the case, the leading authorities had been dealt with by him in his former judgment, and therefore he proposed to add but little on that head, though he must take notice of a decision of the Court of Appeal which had been given since the motion was heard. The first point to be considered was, did the words "Yorkshire Relish" constitute a descriptive or fancy name? This subject had been considered by the Court of Appeal lately in the case of *Reddaway v. Banham*; and having regard to the remarks made by the judges in that case, he had come to the conclusion that the term "Yorkshire Relish" was not descriptive. The words were not in any sense a description of the article made by the plaintiff; the name was simply a fancy name, just as much as if the article had been called "Primrose Sauce." There was another point of view upon which the decision of the Court of Appeal had a bearing; but to deal with that he must state some further facts. In paragraph 8 of the statement of claim the plaintiff raised the issue that the defendants' sauce differed in composition from Goodall and Co.'s sauce, and in the defence the defendants pleaded: "The defendants do not admit (though this is immaterial for the purposes of the action) that their sauce differs in composition from Goodall and Co.'s sauce." If the defendants, when they said that the difference was immaterial, meant that even if the two sauces were the same the rights of the parties would not be affected, his Lordship thought there was much to be said in favour of that view, but it was sufficient to say in the present case that the defendants had accepted the plaintiff's challenge, and the state of the evidence rendered it unnecessary to express a concluded opinion upon it. The evidence given by the analytical chemists went to prove that there were certain differences in the chemical composition of the two sauces, the most conspicuous being that the plaintiff's contained a greater quantity of salt than the defendant's. It was to be observed, however, that if the chemical elements were identical it would not follow that the two sauces were compounded in the same way. If the issue tendered by the plaintiff as to the identity of composition had to be decided upon the evidence of the expert witnesses called by the defendants, without taking into consideration what had been said by those called for the plaintiff, his Lordship would have come to the conclusion that the composition of the two sauces was not the same, though they resembled one another in taste. The defendants, by sending their sauce into the market under the name of "Yorkshire Relish," had represented that it was the same article as that which purchasers had been in the habit of procuring under the same name. Now was this, according to the test laid down by the Court of Appeal in the case of *Reddaway v. Banham*, the simple "truth." He thought it was not. The assertion went beyond the simple truth. It might be right to describe the defendants' sauce as a wonderful match of "Yorkshire Relish," but not as "Yorkshire Relish." The next point was, did the term "Yorkshire Relish" denote in the market the plaintiff's manufacture. There was no conflict of evidence as to the use of the term "Yorkshire Relish" in the market, because it was clear that for very many years the plaintiff's sauce was the only one in the market bearing this name, and persons who ordered "Yorkshire Relish," expected to be supplied with the sauce manufactured by the plaintiff. In this state of things, he thought that the purchasers who were in the habit of using "Yorkshire Relish," and who knew that the plaintiff was the manufacturer of that sauce, would, on asking for "Yorkshire Relish," expect to get the plaintiff's sauce, and those who did not know who the manufacturer was would expect, on asking for "Yorkshire Relish," to get the same article as that which they had been in the habit of buying, viz., the plaintiff's. Under these circumstances, the defendants, when they introduced their sauce into the market under the name "Yorkshire Relish," were bound to take precautions to prevent purchasers from being misled. Upon this point he might refer to the remarks of Lord Justice Bowen, when the matter was before him on appeal: "In this particular case it is perfectly true that 'Yorkshire Relish' denotes the article which is made by, and has been made for many years by, the appellant's firm, and it looks extremely unlikely that any person, even the respondents, could now use the term, 'Yorkshire Relish' without running great risks." The evidence in the present case appeared to bear out that conclusion of fact. The Lord Justice went on to say: "But if 'Yorkshire Relish' is not a term to which the appellant has the exclusive right, it is conceivable that the respondents, or any other persons in the trade, might—by an honest and strong endeavour, carried out effectually—so distinguish the sale of the article which they are selling from the sales of the appellant's sauce, or so distinguish the manufacture of the article which they manufacture from the manufacture of the appellant's sauce, as to prevent the possibility of the outside customer being deceived. It is impossible for a court of law to say that it might not be done, and if it can be done, the trade have a right to have that door left open to them." The Lord Justice had plainly laid down that upon any person taking advantage of the removal of the word "Yorkshire Relish" from the register, and introducing goods under that name into the market, was bound so to distinguish the article as to prevent the possibility of the outside world being deceived. That brought him to the third question, viz., were the precautions taken by the defendants sufficient to preclude mistake? It had been laid down that it was the duty of any person introducing goods into the market under the same name as others, to make sufficient distinction, but no court had ever said how the distinction was to

be made, and in his Lordship's judgment, this was not a matter which could be reduced to any simple rule, but must depend upon the circumstances of each particular case. It might very well be that what was sufficient in the case of a wine producer would not be sufficient in the case of a brewer, and what was sufficient for a brewer might not be sufficient in the case of a sauce maker. The question was whether the acts of the defendants misled purchasers. The defendants sold their sauce at a price which enabled the dealers to make a larger profit than was to be obtained by the sale of the plaintiff's sauce, and it was obvious that the unscrupulous traders—a class unfortunately too numerous—were placed under a strong temptation to sell the defendants' sauce even when they knew the plaintiff's sauce was asked for, or without making any inquiry as to which sauce the purchaser desired to have. Having regard to the evidence which had been given upon this point by the witnesses, it appeared that it was more than incumbent upon the defendants to make distinctions. What were the precautions which the defendants had taken? They now used a pink wrapper in the place of the plaintiff's white wrapper, and the labels upon the bottle were different from those of the plaintiff's. The label in use at the commencement of the action bore the words "Yorkshire Relish" in a conspicuous manner, and when placed side by side with the plaintiff's it was seen to differ from it materially, but still it contained the words "Yorkshire Relish" in the same position as the plaintiff's. Those words were the most prominent in both labels. At the hearing of the motion he thought (as he still thought) that the label was likely to mislead an unwary purchaser, and, further, that it had misled purchasers into believing that they were receiving "Yorkshire Relish" of the same kind as that which they had been in the habit of buying. In consequence of the remarks made by the Court of Appeal the defendants had seen fit to alter their label; the trade mark had been removed from the middle to the top, and the word "Holbrook" had been put in larger letters than "Yorkshire Relish," and, in his lordship's opinion, the new label was much less objectionable than that which was first used. The words "Yorkshire Relish" no longer occupied the same place as upon the plaintiff's label nor were they so conspicuous as the word "Holbrook;" nevertheless, he could not but think that a certain class of customers were likely to be misled even by the new label. The sauce was largely used in families, being procured by domestic servants, and many of the servants who were desirous of getting the plaintiff's sauce knew nothing of the manufacturer's name; they would ask for "Yorkshire Relish," desiring to get that with which they had hitherto been supplied, and on seeing the words "Yorkshire Relish" upon the bottle, they would be satisfied with it. This mistake had happened in the case of Mrs. Jackson, though it was perfectly true the husband of the lady discovered that the sauce was not the plaintiff's. It was said that the ultimate consumer would recognise the difference of the bottle and label and not be deceived, but it seemed to his Lordship that this was not the necessary consequence, and that the evidence disclosed one class of case in which no such discovery could be made, for, according to the evidence, it was the practice in some families to put the sauce at once into the cruet, when the detection of the difference became almost impossible. He thought the plaintiff had made out a case which entitled him to a perpetual injunction in the same form as was granted upon the motion. The plaintiff, if he asked for an inquiry as to damages, was entitled to it, but he must take it at his own risk. The costs of the action must be paid by the defendants. Mr. Graham Hastings said he was instructed to ask for an account of profits, which his Lordship at once granted. After a short discussion, it was arranged that, upon the defendants giving notice to appeal within a fortnight, the injunction with regard to the new label should be suspended, the defendant's further undertaking to keep an account.

CORRESPONDENCE.

MR. HADEN GORSER AND ADULTERATION.

To the Editor of FOOD AND SANITATION.

SIR,—Little good can be done by any Inspector of Food and Drugs Acts until a great alteration takes place. The dead loss to a Vestry in a case like this would be close on 15s. net cost of taking sample, time, etc., and analyst's fees, without solicitor's fees, in case one was employed.

But then, *where is the credit to the Inspector when trying to do his duty?* Echo answers, where?—I am, Sir, yours truly,

SANITARY INSPECTOR.

ANSWERS TO CORRESPONDENTS.

BUNKUM.—Bovril was analysed and the result published in No. 67 of FOOD AND SANITATION, along with analyses of Valentine's Meat Juice, Liebig's Extract of Meat, and Brand's Essence of Beef. The comparative examination of the various preparations should be sufficient to show you how unwarranted is the opinion you express.

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Food and Sanitation.

SATURDAY, NOVEMBER 16TH, 1895.

SALICYLIC ACID IN WINE.

A TEETOTAL TEST CASE.

SALICYLIC acid has many uses, one of which is ordained by law in Germany, and may explain Dr. Thudichum's recent evidence, and why it is produced there. German soldiers are notorious sufferers from bromidrosis, and assertive as their Emperor is, he pales into nothingness before the arrogance of his soldiers' feet, which are so tyrannical that the defenders of the Fatherland are compelled by law to use a deodorant powder of salicylic acid on their “Trilbys.” It is probable that nothing short of a special edict could have caused this use of salicylic acid in Germany, as that German lady, Ida Pfeiffer, showed. She explored the wilds of everywhere, and after having passed unscathed through the most ferocious, lewd, lecherous, and lascivious savages, arrived in London to be *fêted*, but she had no knowledge of the uses of salicylic.

It was a never-to-be-forgotten occasion when a

famous savant, unbending, asked the “new woman” “Pioneer Clubbed” of all superstitions, why superstition should so ordain that in Germany “Brer Rabbit” lay so low that no one would eat him. “Why,” said the savant, “do you regard the appetising rabbit as an unclean thing, and avoid him as an Englishman would a rat?” Turning her exploratory and philosophic eyes upon the savant, the “new woman” representative of Germany replied, “It is strange, but the world is full of ignorance, contradictions, and prejudice, which I regard as the results of custom. It is custom to which we are slaves. Why do I wash my face, and never wash my feet?” The savant was silenced.

We have not a scrap of objection to this use of salicylic acid, for history proclaims that some of the world's greatest would have been benefited had they known and employed it; for, according to Tragon, Louis XIV. suffered from fœtid feet to such a degree that the worse courtesans in Paris fainted away therefrom in his presence. Henry IV. had the same redolent perfume (there was no Crown Perfumery Co. in those days), but this did not prevent the diplomatic Queen Marguerite from occupying the same couch; and she pardoned her liege lord's legendary infidelity as well as the loud odour of his royal toes. One day he was so redolent that Madame de Verneuil, one of his court favourites, said to him: “Sire, it is fortunate you are a king; without that your presence would not be tolerated—you stink worse than carrion.”

Now, feet play an important part in wine-making, in treading out the grapes, and supposing that the owners had nifty “Trilbys” and used salicylic on them, we could understand that salicylic acid might be accidentally introduced into a grape beverage in the process of manufacture, but how it gets into an orange wine or why it gets there is like the fly in amber—a puzzler to us. However, salicylic acid has its friends and defenders, for other uses than that of “Rimmelising” imitators of Louis XIV. The following case presents us with a charming and truly touching instance of its friends giving expert evidence—as it is:—

On Wednesday, November 6, at the Westminster Police Court, an important question under the Sale of Food and Drugs Act was raised before Mr. De Rutzen. Mr. Gill appeared for the prosecution, and Mr. Rose Innes, instructed by Messrs. Loxley, Elam and Gardner, appeared for the defence. The prosecutor is the Inspector of St. George's, Hanover-square, and the defendant a member of the well-known firm of Walton, Hassell and Port. The facts were admitted, the real question in dispute being whether the quantity of salicylic acid present in the orange wine of the defendant was dangerous to health. The wine admittedly contained .038 per cent., or equivalent to 26.6 grains per gallon. Mr. Cassall, public analyst, stated that the quantity used was unnecessarily large, as 1 part in 10,000 was found sufficient to preserve any liquid of this kind. He had, since his analysis of the sample, tested the effect of salicylic acid upon himself: it had produced headache and affected the bladder. He thought that the habitual taking of the drug would lead to cumulative effects. If the wine were properly made, alcohol would preserve it. Dr. W. H. Corfield said that salicylic acid was slightly caustic, and was therefore chiefly used for external application. Its internal use had been largely given up, as it caused irritation of the stomach and kidneys. Salicylate of soda was preferred. He regarded it as preposterous to

suggest that a substance which was useful for removing corns was a proper substance to put into wine to be taken with one's dinner. The French Government had absolutely prohibited the use of salicylic acid in foods. Mr. Rose Innes remarked that this was simply because it is produced in Germany, a statement which was confirmed by Dr. Thudichum. For the defence a large number of expert witnesses were called, and the evidence of those gentlemen was in direct conflict with that called by the prosecution. They one and all regarded salicylic acid as a most useful preservative, and as being, in the quantity employed, perfectly harmless. Dr. Bond stated that he had taken 10-grain doses of it three times a day for two or three weeks continuously, for relief of rheumatic pains, and he thought even so large a dose as 3 drachms would not poison anyone, though it might cause unpleasant symptoms. Indeed, he had never heard of anyone being poisoned by salicylic acid.—Dr. Arthur P. Luff said that he had in cases of acute rheumatism given 120 grains in six hours without any injurious effects.—Dr. B. H. Paul said that the great advantage of salicylic acid as an antiseptic was its non-poisonous nature. It was true, he admitted in cross-examination, that the addition of alcohol would preserve wine, but such addition was undesirable for many obvious reasons.—Mr. A. Gordon Salamon said that salicylic acid was a most useful antiseptic. It was used in milk, beer, sherry, and in many temperance drinks. It was an expensive drug, and it could not be regarded as an adulterant. It was used to preserve sherry which was of low alcoholic strength, but was not added to change its character or flavour, still less to increase its bulk. Salicylic acid was used to prevent the public swallowing germs. There were but three alternatives—increased alcoholic strength, putrefaction, or the use of a preservative such as salicylic acid. He, speaking from practical experience, must emphatically differ from Mr. Cassall's statement as to the very minute quantity of salicylic acid which was necessary. The quantity used was not at all excessive.—Dr. Wm. Murrell having given evidence to the same effect, the learned magistrate said, in view of the extreme divergence of opinion, he would take time to consider the matter. As the case is *sub-judice* it would be wrong of us to criticise the evidence in any way; but as we are not like the German warriors "Trilbys," we can avoid salicylic acid without expressing ourselves strongly.

POINTS FOR TRADERS.—I.

CASSIA FOR CINNAMON.

At Hanley, Sarah Parr, chemist, 26, Tontine-street, Hanley, was charged with selling cassia for cinnamon. Mr. A. Challinor, Town Clerk, prosecuted, and Mr. Ashmall appeared for the defendant, who pleaded guilty. It was stated by Robert Johnson, an inspector in the employ of the Corporation, that the wholesale price of cinnamon was 2s. 6d. per pound, and of cassia 10d. The witness asked for cinnamon, and was supplied by a boy about fifteen years of age with an article which the analyst certified to be cassia. Mr. Ashmall, in mitigation of punishment, explained that the business had been bought twelve or fifteen months ago, and the packet of cassia had not been opened until the inspector called. Had Mr. Parr been in he would have told the inspector they did not keep cinnamon. Fined 20s. and costs.—David Lovatt, herbalist, Lichfield-street, was also summoned for a similar offence. Mr. Challinor prosecuted, and Mr. A. B. D. Sword, sen., was for the defence. Mr. Sword said he was defending the case on behalf of the manufacturers, and they had obtained an analysis from an eminent London analyst which differed from that given by the analyst for the prosecution. He asked the Stipendiary to exercise his prerogative, and send the third sample to Somerset House, but the Stipendiary refused to do so, saying that he had sent

samples to Somerset House on previous occasions, but in the result he had received no assistance whatever. Mr. Sword then applied for an adjournment, in order to give the requisite notices to contest the analyst's certificate. This was granted, and the case adjourned for a fortnight.

THE ECCENTRICITIES OF TREETOTALERS.

At Warrington, on November 8th, Eloysius Hughes, herb beer manufacturer, 25, Pinners-brow, was charged with selling a pint of beer on the 3rd September, he not having an Excise licence at the time. Mr. Thomas May prosecuted on behalf of the Inland Revenue, and said that the case was a very important one, the penalty being £10. A sample of beer was obtained on the 1st July from the shop, which on analysis was found to contain 5.9 per cent. of proof spirit. On the 9th July another, containing 4.55, was obtained from the shop. In September defendant's shop and brewing apparatus was inspected, and a pint of beer was purchased by Thomas Owner, who found it to contain 5.2 per cent. of proof spirit. It was sent to Somerset House, where an analysis obtained similar results. Defendant said he was in ignorance of the law. The magistrate fined him £1 and costs—£3 10s. in all.

He ought to drink Kops' Ale and be——.

MR. CUTHBERT QUILTER, M.P., ON THE SOMERSET HOUSE IGNORAMI.

At the last meeting of the West Suffolk County Council, the County Analyst (Mr. James Napier) reported that out of 12 samples he had analysed during the quarter (10 butters and two coffees), only one (butter) was found adulterated, containing 4 per cent. excess of water. There had been no prosecutions during the quarter.—Mr. Cordy S. Wolton regarded the report as most unsatisfactory, and money was being spent to no purpose. In Bury St. Edmund's, for instance, not a single sample had been taken. He was not surprised at the report of the analyst, as he had already been in conflict with Somerset House, for if the articles were not grossly adulterated he returned them pure. The only people who took samples in West Suffolk were the police inspectors, who were the best known men in their districts, and of course when they entered shops it was known for what purpose they came, and the retailers took good care to supply them with the genuine article. He referred to Gloucestershire and Staffordshire, where, when it was found that the Act was practically inoperative, the work was taken out of the hands of the police and travelling inspectors appointed, who, assisted by women, obtained adulterated samples, which hitherto it had been impossible to obtain. He urged that the matter required consideration, and proposed that the question as to the best and most effective manner of carrying out the Food and Drugs Act be referred to the General Purposes Committee.—Mr. Cuthbert Quilter, M.P., seconded the motion, remarking that he had six samples of beer which the analyst returned as "not pure," but a Somerset House Exciseman returned them as "the finest possible beer." (Laughter.)—The motion was carried unanimously.

THE BEER SWINDLE.

The teaching of FOOD AND SANITATION is slowly but surely making way. But how much longer are the no-class brewers and distillers to be encouraged by Government to cut their country's throat instead of their own? What inducement has a pure-beer brewer to brew pure beer, or a malt vinegar maker to brew malt vinegar? The idleness and work-shirking propensities of the Inland Revenue chiefs prompted the carefully-distorted lies that led Mr. Gladstone to abolish the malt tax, and give certain work-shirking public servants an opportunity of taking England's wages whilst they destroyed its trade. A brewer could take the contents of his sanitary or insanitary dust-bin, his

earth or other closet, and mix them with his household slops, and the lazy, ignorant asses who chemically and fiscally advise the Excise, or whatever that excrescence is called, would pronounce this excrementitious product pure beer. Meanwhile English barley growing and malt-ing may go to Sheol. We do not know Mr. Jas. Napier, but he has our heartfelt sympathy, for how can he, or any man who conscientiously strives to do honest work for the money he receives, feel otherwise than heart-broken when anti-English-Government employees do everything that the most virulent enemy of England could desire to encourage swindling, the use of foreign produce, and to decry our native products? If there be a mild, good-natured man in England it is the Editor of FOOD AND SANITATION, but what did a friend of the foreigner wish only the other day? The *Sunday Chronicle* gave its readers some of our remarks on the Danish Butter Humbug, whereon, of course, someone, who would rather sell swindling foreign produce than encourage native industries, expressed the hope that the Editor of FOOD AND SANITATION ought to

NEVER LIVE TO EDIT ANOTHER ARTICLE!

This is how he did it:—

"Dear Editor,—Allow me to say a few words in reference to your remarks in the *Sunday Chronicle* of October 20th, on an article which appeared in a paper called FOOD AND SANITATION *re* the Danish Butter Humbug. The sooner FOOD AND SANITATION gets an editor with a few brains the better. It is quite apparent to any person at all interested in the Danish butter trade, as I am, that this waste paper called FOOD AND SANITATION does not know anything at all about Danish butter, and it is only right that such an incorrect statement is made correct. The laws of Denmark prohibit the exportation or importing of margarine, and, furthermore, the margarine that is made in Denmark has to be sold in its district, not for the purpose of mixing with Danish butter. May FOOD AND SANITATION never live to edit another article, but long life to the *Sunday Chronicle*. It is a rare old eye-opener, and I wouldn't be without it for anything on Sunday.—Yours very respectfully,

"DUNNAGAIN."

The Editor of FOOD AND SANITATION prints this because he likes to give each side a fair show, and he doesn't object to the wish that he may never live to edit another article.

HE APOLOGISED FOR HIS EXISTENCE

as follows to the *Sunday Chronicle* of November 10th:—

"To the Editor of the '*Sunday Chronicle*.'

"Sir,—Your correspondent 'Dunnagain' has a bad attack of the disease Dickens called podsnappery. I wish to assure him and your readers that I did not invent Joseph H. Harvey, of St. Nicholas-buildings, Newcastle-on-Tyne, who was victimised by the Danish swindlers, and was summoned at the Houghton Petty Sessions for selling thirty-six casks of adulterated Danish butter. There must be many readers of your deservedly widely read paper who know Mr. W. A. Lowery, secretary to the Hetton Downs Co-operative Society, who bought the butter from Mr. Harvey, and I solemnly swear that I did not create him for the purpose of proving that there is much humbug about the purity of Danish butter. Mr. B. Scott-Elder, chief inspector for the Durham County Council, who prosecuted Mr. Harvey for selling Danish butter adulterated with 75 per cent. of margarine, is not a fictitious person, as many mean 'thieves behind the counter' know to their cost. Mr. Keating Stock, the public analyst who analysed the Danish swindling butter, resides at Darlington, and the magistrates exist who tried the case and heard Mr. Harvey state he had a warranty from the foreign merchants which he knew was no use in the English courts. He said the error was not wilful on his part, as he had no means of knowing whether the butter was pure or not, but he had got

a sample analysed recently, and found that the county analyst was quite right. He was very sorry that the case had arisen. The Bench, in giving their decision, said that the case was a very serious one, as the store was a very large one, in the midst of a populous district. They would, therefore, inflict a penalty of £5 and £3 19s. 6d. costs. I am as painfully aware as 'Dunnagain' can be that I am a blithering idiot with a microscopic cerebrum and cerebellum to regard evidence of this nature as of any value when placed against the statements of the Danish authorities. I am prepared also to admit that I ought not to live to 'edit another article' in my 'waste paper,' for, alas! there are hundreds who tell me so. I am bound to feel the justice of their objection to my existence, for it is a scoundrelly thing to strive to suppress the mean swindles upon the public which that unctuous friend of man, John Bright, defended as a 'form of commerce.' I had no right to secure the suppression of the sale of dilute pyroligneous acid as vinegar, or 'spent' ginger, or cotton-seed oil for olive oil, or to cause those who undersell honest competitors by such swindling devices to be 'presented at court.' I must allow that in these days when English Government officials buy Danish pork for our Services, and Tommy Atkins can lean on a German bayonet and find it bends under him, a fool has no right to live who objects to the rascals who take German potato spirit, flavour and colour it, and sell it as Irish or Scotch whisky, being sent to the House of Commons to rule England, Ireland, and Scotland, instead of having compulsory exercise on the treadmill. Sudden death, or banishment for ever from editorship, ought to be the lot of an unpatriotic ass who objects to a concoction of chemical swipes produced from sugar, rice, chiretta, or any other rubbish a brewer chooses to employ, being sold as honest English ale, and who thinks that instead of 'peerages' the perpetrators of such swindles ought to be 'doing time.' It is a crime against England in these days when even our Court is made in Germany, and mean foreign caterers offer to English girls wages that force starvation or 'the streets,' to strive to add to the good repute of English, Irish, and Scotch produce, and to make the truth about foreign produce known. My dear *confrère*, I feel I ought not to live, and that 'Dunnagain' ought to edit my paper.—Yours, etc.,

"The Editor, FOOD AND SANITATION."

But

GIVE ENGLAND A CHANCE

is all the Editor of FOOD AND SANITATION strives for, and now comes a question worth a little consideration. Does England get its chance? The Editor of FOOD AND SANITATION spoke, but three days ago, to an Englishman who, although he is a public man, is not an enemy of his country. A tender-form for the Government supplies of vinegar was produced, and he read it through, and a more shameful and disgraceful document could not emanate from any existent Government office. It threatened a firm with the degradation of being blotted off the list, because that firm brewed its vinegar from malted barley *grown in England*, and did not care to compete against firms who make pseudo-vinegar from rice with the "shucks on," grown for the benefit of the "Heathen Chinees," and other substances produced in foreign climes.

THE ENGLISH LANGUAGE HAS ITS LIMITS,

And the Editor of FOOD AND SANITATION has tried them all round, but he finds language failing and but a feeble instrument in the face of rascality in Government departments like this.

THE WATER-AT-SPIRIT-PRICE SWINDLE *v.* THE MILK NOTIFICATION.

OUR contemporary, the *Local Government Journal*, asks the following conundrum. Perhaps some of our

readers will enlighten the editor at Dorset House, Salisbury-court, E.C. His query is:—

"I do not quite see the logic, although I must accept the law, as evinced in a recent prosecution under the Sale of Food and Drugs Act. An inspector entered a railway refreshment-room and was served by one of Spiers and Pond's Hebes with a glass of milk. Engraved upon the tumbler was an inscription stating that the vendors could not guarantee the milk to be new, pure, or having all its cream.

"Nevertheless, a conviction followed, as the milk was 17 per cent. short of its cream, and the offence was that 'such abstraction or alteration' had not been 'disclosed.' One would think there was ample disclosure, but the magistrate held that notwithstanding the notice on the glass, the refreshment contractors could not 'contract themselves out of the Act of Parliament.' The mistake appears to have been that the notice was not brought to the knowledge of the Inspector till after he had purchased the milk.

"What I want to know is, what is the difference between the notification of Messrs. Spiers and Pond, which was also exhibited in a frame in the bar, and a similar announcement in a public-house, that 'All spirits are diluted'? How is it that the publican does not 'contract himself out of the Act of Parliament'? I do not know if the decision is to be appealed against or not. Certainly, I think it is straining, not the milk, but the Act, to apply it to refreshment bars."

"MR. INSANITARY PROPERTY" OWNER ATTEMPTS TO TERRORISE THE ISLINGTON MEDICAL OFFICER OF HEALTH.

If there be one Medical Officer of Health who might be singled out as having specially deserved well of the people of London, it is Dr. A. E. Harris, Islington. Keenly solicitous about the health of the children attending London Board Schools, he personally investigated the condition of the schools in his district, and began by asking the School Board to alter its insanitary policy. The Yerbury-road filthy disease-spreading school was the first he demanded should be put into a sanitary state. The School Board attempted brow-beating, but they mistook their man, and as they would do nothing to make healthy their disease conservatoires he made them do their duty. This necessary and admirable public work led to the discovery that a large number of London Schools were simply jerry-built death-traps for the children attending them, and to the Board recognising that it would have to put them into a healthy state, or be hauled before the Courts and suffer more exposure and opprobrium. Having a practical training in plumbing and sanitary work, Dr. Harris could speak with a weight that not even that great professor of everything, W. R. Smith, was able to withstand. A medical officer is, however, in the hands of the body employing him; and the wise and manly words of Drummond that property "has its duties as well as its rights," would be as disregarded to-day as when they were uttered, were there not to be found whole-souled, honest men who have a truer conception of their public work than was the case when greed conserved crowded, filthy plague-spots, and there was no Press, no public opinion, and no true friends of public health on our Vestries and Boards of Works to back up those who fearlessly do their duty. But there is still a something wanting ere London can be freed from its plague-spots, and be it borne in mind that these are not alone dark, gruesome hovels, where misery and vice congregate; but residences that are fair without, but foul within, which a tenant enters into possession of only to find the trail of "jerry" everywhere, for Jerry is truly ubiquitous and clever in carefully-concocted attempts to "Burke," muzzle, or ruin those who put public health above "shent per shent." The following documents we give, "ipsissima verba,"

that our readers may see what that something is, and to what length insanitary property terrorism will go in its opposition to those protecting the people from disease:—

[COPY.]

"The Metropolitan House Investment and Agency Company, Limited,

"16, Eastcheap, London, E.C.

"5th November, 1895.

"Dear Sir,—I wish to draw your attention to the enormous expense and loss which is being occasioned to owners of house property in the Parish of St. Mary, Islington, by the manner in which the sanitary department of your vestry are at the present time enforcing the powers conferred upon them by the Public Health Acts.

"I will preface my remarks by informing you that this company owns 68 houses in the parish, and collects the rent of 51 other houses, as agent for the respective owners, making a total of 119 houses, of the aggregate net annual rateable value of £3,500 or thereabouts, and representing an invested capital of £40,000. If so requested, I will, in confidence, give the addresses of all the houses to any member of the vestry, but for obvious reasons I do not care to furnish this information in this letter.

"All the houses are in excellent repair, and are let to most respectable tenants, the rentals averaging from £32 to £50 per annum. They are all situated in good streets, and, with the exception of nine houses (all in one street), none are let to weekly tenants.

"During the period from January 1, 1894, to the present time, notices have been served by your sanitary department on no less than 53 of the above-mentioned houses, necessitating in all but two or three cases the entire re-laying of the drains and erection of ventilating shafts, &c. As you are no doubt aware, the minimum cost of complying with these notices is £30 per house, and where there are two w.c.'s £35. I have therefore expended on sanitary works alone in such 53 houses upwards of £1,600 in a period of one year and nine months, quite exclusive of the usual expenditure for decorative and structural repairs. The effect of this expenditure means that if the company's estate was confined to the Parish of Islington it would have been impossible to have paid out investors any interest on their capital during the past two years. I need not remind you that this continuous outlay renders house property in your parish almost worthless, as you can see for yourself by perusing the result of sales, or attempted sales, of Islington houses at the Auction Mart.

"I do not suppose that the property of this company has been singled out for attack, but it is an extraordinary thing that wherever this company owns or manages a house, a notice is sure to be served sooner or later, whilst, so far as I have been able to ascertain, adjoining houses are seldom treated in the same manner. For instance, in New North-road, the only four houses in which the company is interested have all been entirely re-drained under the orders of your vestry, whilst only one other house in the same block (about 40 in number) appears to have been served in the same way, and the same thing occurs in Stavordale-road, where only two houses are owned, but upon both of which notices have been served.

"That this proportion of notices, to number of houses, is the usual thing seems incredible; but if it be so, your Medical Officer and his staff evidently have in view the entire re-construction of all private drains in the parish. If the Vestry are with Dr. Harris in this, it would surely be more honest and straightforward to make an order for the testing of all private drains, and for re-construction of all that prove defective. Owners would then know what to expect, and could make their arrangements accordingly. I would remind you that to do this

throughout the parish would involve the outlay of some millions of money.

"I also find that in cases where (under the recent decisions of the judges) the onus of re-constructing the drains is thrown upon the Vestry, every effort is made to compel the individual owner to do the work, and should he in ignorance of the law carry out the same, your Vestry have refused to refund any portion of the expense. I allude particularly to the drainage of Nos. 47, 49, 51, 53 and 55, Queen's Head-street, and 13a and 14a, John-street, re-constructed by me at a cost of over £100.

"Owing to the frequency with which these notices have been served upon the Company's property, my Directors some time since resolved that no more houses should be purchased in your parish, and, notwithstanding the fact that this Company has since purchased £50,000 worth of property in London, not a single house has been bought in Islington; and this policy will be continued until the present arbitrary enforcement of your Vestry's powers is very considerably modified. Several of the largest buyers of house property in London are associated with the Company in this decision.

"The Company own over 300 houses in other Metropolitan parishes, and the proportion of notices served on those parishes does not amount to 3 per cent. per annum on the number of houses owned.

"I am sending a copy of this letter to each member of the Vestry, to the Vestry Clerk, and to the *Islington Gazette* for publication.—Yours truly,

"(Signed) ERNEST EDWARDS, Secretary."

To this mean malevolence the Islington Medical Officer has called the attention of the Local Government Board in the following letter:—

"The Vestry of St. Mary, Islington,
"Vestry Hall, Upper-street, N.,
"7th November, 1895.

"The Secretary,
"Local Government Board,
"Whitehall, S.W.

"Sir—

"Herewith I beg to forward you a copy of a circular letter which has been addressed to every member of the Vestry of St. Mary, Islington, which authority I have the honour to serve as its Medical Officer of Health, by the Secretary of the Metropolitan House Investment Company.

"The letter has been sent, I have no doubt, with the object of deterring me from discharging my duty to this parish, and with a hope that it might bring me into trouble and difficulty with my Authority.

"I need hardly say that it will not have the first-mentioned effect, whatever it may have with respect to the latter; because, being placed in a position of comparative independence by Section 108 (c) of the Public Health (London) Act, 1891, I shall fearlessly continue to perform my duties in a manner consonant to the regulations laid down by the Local Government Board for my guidance.

"My chief object in forwarding you this document is to place before you a very strong argument why medical officers of health should be appointed to their positions, to use the words of the above-mentioned Act, 'not for a time only.'

"If such a practice as that adopted by this Company were to become universal, a new terror would be imported into the lives of all medical officers of health who are periodically elected to their positions, for naturally they would be more or less timorous in zealously performing their duties, having before their eyes the troubles which such a document as the enclosed is calculated to entail on them.

"I might say as regards the note itself that the writer is very careful to avoid libelling either myself or any member of my staff, and also he omits to state, although cognisant of the facts, that in every instance the premises were visited either by reason of the

occurrence of an infectious disease, or through complaint having been made to me of their insanitary condition.

"I am, Sir,

"Your obedient servant,

"(Signed) ALFRED E. HARRIS,
"Medical Officer of Health."

The protest Dr. Harris makes against this contemptible act, deliberately designed to intimidate him from doing his duty in protecting the public health of the inhabitants of Islington, is one with which every member of the vestry will agree, unless he be a shareholder in this precious Metropolitan House Investment and Agency Company, Limited, whose insanitary property has been so necessarily overhauled. We shall see if these dealers in insanitary houses will be able to make Dr. Harris's position as Medical Officer of Health in Islington unendurable. As to their threat that they will buy no more property in Islington, our opinion is that it will be all the better for Islington if they do not extend their ownership there. A public company, we know, has neither a body to be kicked nor a soul to be damned. It is a pity that this company is devoid of corporeal substance, as we could conceive no company more worthy of having a heavy boot forcibly applied to the brawny disc of its dorsal rotundity than that one guilty of this contemptible attempt to terrorise a medical officer into letting death and disease run their course, that a gang of hungry speculators in insanitary property may line their pockets. If Dr. Harris's sterling public services in the cause of sanitary board schools for London, in seeking to make the Metropolitan Asylums Board recognise and do its duty to the ratepayers supporting it, and in using skill and energy to make Islington healthier for its crowded population be not sufficient to enable him to withstand this new terrorism, it will be such a scandal that the Local Government Board ought surely to see the urgent need of giving fixity of tenure to all sanitary officials whether in London or out of it, that they may be free from such outrages.

In this precious document let it be noted it is not alleged that it is because the houses were insanitary and consequently dangerous to the lives of those inhabiting them that this expense was necessary. No, the charge is that Dr. Harris, by causing these insanitary places to be put into a sanitary state, lowers the company's profits or dividend paying. Human life, be it the infant in whom the hopes and the love of a father and mother are centred or the bread-winner of the family, ought to be sacrificed to enable Mr. Ernest Edward's directors and shareholders to make and divide profits.

THE "LANGET" ON SOMERSET HOUSE AND PUBLIC ANALYSTS.

"It is wearisome," says our contemporary, "to read almost every week that the public analyst certified to the effect that the milk was adulterated with a percentage—in cases of dispute generally small—of water, but that the officials at Somerset House, on the matter being referred to them, reported there was 'no evidence of the presence of added water.' The case is then usually dismissed, the authorities who undertook the prosecution having to pay the fee for the Somerset House certificate and the costs of the court. Somerset House officials maintain one standard and public analysts another, and so long as this state of things continues so long will it be a farce and incongruity to institute proceedings where there is a possibility of the results showing upon the standard of the public analyst that the milk is adulterated, and upon the standard of Somerset House that it is genuine but of poor quality. Surely the public analyst and the Somerset House officials, being members of one profession, could meet together and discuss this subject quietly and in a purely

scientific spirit, with the view of smoothing down the contentions, which lead them to disagree, and which can only bring ridicule and contempt upon themselves and their work from a public ignorant of the real causes of the differences. The public analysts are, of course, in a large majority, and their opinions are entitled to be heard; and their action, contrary to that of Somerset House, has a tendency to raise and maintain the quality of our milk supply rather than to countenance the selling of milk of a most enfeebled description. Somerset House officials argue that, when it is found that a cow yields milk of a very low quality, in the interests of justice they feel bound to adjudge all other samples by this genuine but poor and abnormal specimen. In taking this view, however, it is obvious that the lowering of the quality of our milk supply is encouraged—that is to say, there would be nothing to prevent the watering down of a rich milk to this low standard, and in some cases the addition of water for this purpose might be considerable. Worse than that, the bulk of the milk might be increased, for aught that is known to the contrary, with a veritable solution of filthiness abounding in disease. We repeat that we trust that the analysts and Somerset House officials will be led to unite on this question, and will arrive at some amicable arrangement which shall be just to the public and to the seller, and bring no longer any discredit upon themselves and their profession, as in the ridiculous and unedifying spectacle which they present in those cases in which the ‘summons is dismissed’ because one analyst says that the milk is adulterated and another that it is not. If this cannot be done, then we appeal strongly to the Food Products Adulteration Committee, whose labours will recommence next session, to suggest a way out of this absurd and grotesque position.”

KEEPING UP THE CITY DIGNITY.

A NUMBER of malevolent, envious creatures have during the past fortnight made that estimable embodiment of every excellence, Sir Joseph Renals, the victim of their chagrin or spleen. Some of the Grub-street scribes have even ventured to insinuate that the representative men of leading, light, and learning declined to meet the “Saviour of England,” Mr. Barney Barnato, on the occasion when Sir Joseph Renals, truly sensible of the nature of his office, afforded law and learning, arts and commerce an opportunity of worshipping the most gifted financier of the age. We cannot help feeling that such assertions do a shameful injustice to two of the brightest and purest spirits of our, or any other country, the more so as in the meanest manner it is suggested that the reputable citizens of London indignantly refused to participate in the hero-worship. The refusals, or ignorings as they are called, have no foundation in fact, as the following letters must conclusively prove:—

“Jacob’s Island.

“Bill Sikes presents his compliments to Sir Joseph Renals, and regrets that he may be prevented from accepting the invitation to the Mansion House. He is striving, however, to secure a long rope, and clear the Folly Ditch, for he would dearly like to be present.”

“Newgate, Sunday Evening.

“Mr. Fagin deeply regrets that a pressing invitation at 8 a.m. with a public official renders it impossible that he should have the pleasure of meeting so many of his countrymen. So intense is his grief at being compelled to keep this prior engagement that he fears he will not survive it.”

“Old Bailey, Wednesday.

“The Artful Dodger has got to call hattention of the Lord Mayor to a piece of outrageous impudence which will keep him away from the Mansion House dinner. His attorney is a-breakfasting with the vice-president of the House of Commons, and although he has told the

bench ‘It’s no use you looking frightened. I won’t show you no mercy, not a ha’porth of it,’ he fears Her Majesty will require his services, and that he cannot be present at the banquet.”

But despite these and other unfortunate prior engagements of the great, the rich man who gave the feast did not dine alone. An assiduous scouring of the highways (it must be here distinctly understood that we make no reflections on Paul Clifford, Tom King or Dick Turpin) and the byways brought together a distinguished gathering of English gentlemen, representative of commercial enterprise. They were epicures in food, for not one would touch any of the choice appetising dish for which Charles Lamb’s Chinaman so often burnt his hut.

Amongst the leading Englishmen whose brave British hearts throbbed in sympathy with Sir Joseph Renals’ guest, and whose paunches were distended at his mahogany, were the following:—

Mr. Harry Marks, Mr. Isaac Lewis, Mr. Daniel Marks, Mr. Carl Meyer, Mr. Henry Barnato, Mr. Woolf Joel, Mr. A. Reitlinger, Mr. Hyam Abrahams, Mr. Alfred W. Renals, Mr. John B. Renals, Mr. J. Herbert Renals, Mr. A. G. Schiff, Mr. Barnett Lewis, Mr. H. G. Abrahams, Mr. Rantzen, Mr. Jonas Jones, Mr. Lindheimer, Mr. Neville Abrahams, Mr. J. M. Marks, Mr. Morris Jonas, Mr. Brousson, Mr. Jack Joel, Mr. P. Falcke, Mr. Alf Abrahams, Mr. H. Cohen, Mr. Bamberger, Major Blumenthal, Mr. Louis Abrahams, Mr. J. Lewis, Mr. John Abrahams.

LINCOLN AND SANITATION.

ON the 7th inst. an interesting ceremony took place at the Canwick Irrigation Farm, belonging to the Corporation. For some years the fact has been fully realised that the sewage farm was inadequate for the proper purification of the sewage, and there have been loud complaints and threats of legal proceedings by the Lindsay County Council by reason of the alleged pollution caused by the effluent water from the farm. Fully recognising the inadequacy of the farm, and that to increase its area would be both doubtful as to results and prohibitive in cost, the Sanitary Committee, after testing for a considerable period filters of coke breeze, and, failing to get satisfactory results on the strong sewage of Lincoln, came to the conclusion that the International system of Ferozone and Polarite was the best and most economical, and it was therefore decided to adopt it.

The City Surveyor, Mr. R. A. MacBrair, prepared the necessary plans, and carried out the works, and on Thursday last the Polarite filters, twelve in number, were formally put into operation by the Mayor, who declared the works open. The Polarite filters will be used to relieve the land, which has become sewage-sick, although it is stated to be of the most suitable kind, and laid out with great care.

THE GORTON SEWAGE WORKS.

To mark the completion of the Gorton Sewage Scheme a ceremony took place, at which Dr. E. W. MacArthur (Chairman of the Gorton Urban District Council) set the works in operation—an operation witnessed by members of the Council and others. A gold key, the gift of Mr. F. Candy, managing director of the International Water and Sewage Purification Company, was presented to Dr. MacArthur by Mr. R. T. Holland, clerk to the Council. In making the presentation Mr. Holland said the scheme had been in preparation about eighteen months, but it had been within the region of discussion for many years. At last they saw the completion of their labours—a matter, he was sure, of great satisfaction to all concerned. Dr. MacArthur in accepting the key, said that from that day their sewage would be properly treated. It was a red-letter day for Gorton, and it was with much pleasure he performed the ceremony.

Afterwards an opportunity was given to visitors to view the process which has been adopted. Before the adoption of the scheme the whole of the sewage of the township went into Gorton Brook and Gore Brook without having received any treatment at all. The Mersey and Irwell Joint Committee, however, served the Council with a notice requiring them to divert the whole of their

sewage from the streams within a given time. A scheme was, therefore, prepared dealing with the entire township, and consisting of main concentrating and several tributary sewers. Application was then made to the Local Government Board for sanction to borrow the necessary money, which was estimated in round figures (and including the cost of the land) at about £40,000. An enquiry was held, at which opposition to the scheme was made by the Manchester Corporation on the ground that the effluent would drain into a stream (the Gore Brook) that flowed through the city. The Local Government Board, however, gave its approval to the plan, and sanctioned the loan which its adoption involved. A convenient plot of ground was secured near to Belle Vue Gardens, and the first sod was cut in 1893 by Mr. T. Matthews, then Chairman of the Local Board. The engineers have been Messrs. Lomax and Lomax of Manchester, and under their direction the work has been carried out by Mr. Daniel Eadie of Stockport. There are two detritus tanks with a capacity of 110,000 gallons, and three large precipitating tanks with a combined capacity of 1,079,000 gallons. The sewage, on entering the works, passes into the two detritus tanks, having first received a dose of ferrozone sufficient to effect a complete precipitation of the heavier suspended matter. From these it flows into three precipitation tanks, where the lighter suspended matter is deposited. The sewage, having been clarified, is conveyed to six polarite filter beds of a superficial area of 2,663 square yards. The whole scheme is designed to meet the requirements of a future prospective population, and it possesses a convenience, said to be unique, in that the tanks and filter beds are able to deal not only with the sewage but also with a half-inch of rainfall over the entire area built upon. It is intended in future to deal with the sludge deposited in tanks by means of filter presses; but this is not yet included in the scheme. The Outfall Works have cost £17,000, and the concentrating sewers have involved an expenditure of £8,000 more. Other important sewers are about to be carried out, and when completed the whole of the sewage from the township will be conveyed to the Outfall Purification Works, and the pollution of the rivers, so far as Gorton is concerned, will be at an end.

In the evening there was a dinner, at which Dr. MacArthur presided. In proposing success to the Sewage Works, the Chairman gave an account of the history of the Scheme, and concluded by stating that the works had been carried out well within the estimated cost. Mr. C. J. Lomax, A.M.I.C.E., in responding, congratulated all concerned that the works had been completed without accident or loss of life, and expressed the hope that now that the works had been put into operation there would be an end to the complaints from the Mersey and Irwell Joint Committee with regard to the pollution of Gore Brook. Mr. Bishop, representing the International Co., also responded, and other toasts followed.

HARMFULNESS OF COUGH MIXTURES.

SPEAKING of cough mixtures, the editor of the *Charlotte Medical Journal* has this to say: The great harm these products produce is almost unlimited, and should be regarded as a relic of ancient and unscientific methods of practice. Cough mixtures, as a general rule, do more harm than good, and their reckless and indiscriminate use should be carefully considered by physicians. A patient comes to you with a cough. The first thing you do is to give him a cough mixture, and nine times out of ten the principal ingredient is opium. 'Tis true opium may lessen the tendency to cough, but it does a great damage by arresting the normal secretions, and the system becomes affected by the poisons from the kidneys, the skin, stomach, intestines, the pulmonary structures and the mucous membrane lining the upper air passages. You might as well take a brush and varnish your patient all over as to fill him with cough mixtures. Death is almost as certain from one as from the other, and yet they recover often in spite of the cough mixture. Not only do these damnable mixtures arrest every secretion in the body, but they also show their deteriorating and degrading effect through the stomach. They contain nauseants which tend to disorder and derange digestion. Do not give your patients cough mixtures.

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

By ALEX. J. WEDDERBURN.

(Continued from page 331.)
CALIFORNIA.

From L. Tomasini, manager of Dairyman's Union of California, San Francisco, Cal. :—
The local laws against adulteration are ineffectual, as persons convicted of selling oleomargarine as pure butter were fined but \$5, whereas the cost of arrest and conviction to this institution was \$200 in each case. We were instrumental in bringing before our last legislature a pure-butter Bill which passed both Houses, but for some unexplainable reason was pocketed by the governor. This will give you an idea of the extent

of the adulterations of foods in this State, and you will readily perceive how helpless we are at present. Local federal authorities, instead of taking an interest in these matters, seem to show considerable antagonism.

From J. H. Hood, M.D., and A. J. Hassler, of Haywards :—

Some time ago we noticed an advertisement in a newspaper wherein a certain store offered for sale, among other drugs, a 3-ounce bottle of spirit of camphor for 10 cents. This low price somewhat surprised us, and we therefore bought a bottle with the view of determining where this store made its profit. The 3-ounce bottle turned out to be a 2-ounce short flint glass Blake, and its contents measured 15 fluid drachms. But as even 2 ounces of good spirit of camphor in a flint glass bottle does not allow much, if any, profit if sold at 10 cents, we decided to examine into the quality of this bargain of ours. We found the stuff to be rather less than half the standard strength in camphor, and made with as weak an alcohol as possible. We made an analysis with the following result, as compared with the spirit of camphor of the United States Pharmacopœia :

	Bazaar sample.	U.S.P.
Camphor	43	100
Alcohol	553	700
Water	404	200
Total	1,000	1,000

This rather opened our eyes as to the manner in which these stores make their profits, for, as may be plainly seen, the cost of this preparation is very much less than that of a standard article.

The result of this experiment led us to make further purchases of drugs, etc., from various grocery and other similar establishments in San Francisco and Alameda County.

Asafœtida gum.—We bought one pound of asafœtida from a retail grocer, and paid 35 cents for it, which was a great deal more than it was worth. The sample is about as poor a lot of asafœtida as we ever saw, and must have been refuse from some lot rejected by druggists, for no reputable druggist would sell such rubbish.

Senna leaves.—With the exception of two lots, all the senna leaves we got were of fair average quality of East India senna, at prices ranging from 2½ cents to 5 cents an ounce. Two samples, sold and labelled as "Alexandrian senna" were mouldy and worm-eaten.

Glycerin.—We examined six samples of glycerin and found only one that was of the required specific gravity. In one sample glucose was present to the extent of 21 per cent.; the others being only reduced with water, to the average amount of 10 per cent. The price was in each case 10 cents for a 2-ounce bottle.

Seidlitz Powders.—Seidlitz powders, as purchased by us at grocery stores, were uniformly of short weight. The heaviest was 40 grains short and the lightest 48 grains of the seidlitz mixture. The tartaric acid averaged 30 grains, instead of 35 grains. Two lots had Epsom salts and one lot Glauber salts added, to increase the active property.

Ammonia water.—Two samples examined were both of the same strength, containing 7.5 per cent. of ammonia, and were sold at 15 cents a pint. Strength thus being sacrificed for an apparently low price.

The most of the other articles bought were of fair average quality, with the exception of tincture of arnica, which, in every case, was about half the pharmacopœial strength, as compared with a standard tincture prepared by us.

From Mr. Searley, of the California Pharmaceutical Association :—

English glucose is almost free of sulphuric acid. Some American glucose is also good, but most of it is contaminated.

COLORADO.

From J. T. Flower, State Dairy Commissioner, Denver, Colo. :—

A national law covering the subject would, in my opinion, be beneficial, as it is a notorious fact that nearly every article in that line is more or less adulterated.

From J. W. Goss, president State Dairy Association, Hygiene, Colo. :—

We have since July 1, 1893, a law which aims to compel the branding of oleo so that it shall be sold for what it is.

A national food and drug law would, in my opinion, be of great benefit to the people.

From G. C. Miller, secretary of the Colorado State Dairy Association, Longmont, Colo. :—

At various sessions of the Colorado Dairy Association, the subject of a pure-food Bill has been discussed, and a Bill passed by Congress on the subject would meet the approval of our association, and also of all other good and law-abiding people.

We also have a beekeepers' association. Straight comb honey will bring 15 cents, while the strained honey sells for only 8 cents. The reason for this is because a spurious article is sold as pure honey, and beekeepers are compelled to meet this fraud in the market. I trust the pure-food and drug Bill will become law in the near future.

From J. H. Wheat, Black Hawk, Colo. :—

I know butter to be fraudulent. Oleo is sold here and called creamery butter; maple sugar is also adulterated; California honey is glucose; buckwheat flour is coarse wheat flour (shorts) mixed; some whisky is diluted alcohol coloured with burnt sugar. In beer the brewers use laurel leaves, fish berries and grains of Paradise.

CONNECTICUT.

From C. A. Rapelye, Secretary Board of Pharmacy Commissioners, Hartford, Conn. :—

In regard to preventing adulteration of drugs, I am of the opinion that that is largely done by wholesale druggists and drug millers, if at all, and there is not much doubt that it is. I don't believe the retail trade has the facilities or generally the disposition to adulterate drugs, unless it be possibly in the case of laudanum. Laws cannot prevent this thing without money and power to execute them, and in this State we have neither placed in our hands. I am of the opinion that United States laws cannot be passed that will govern this matter which can be made equitable. The Paddock Bill aimed to accomplish something in this line, but it was manifestly unjust and raised the opposition it deserved. The matter must be reached through the manufacturers and large handlers, who have the opportunities, and not through the retailers, who do not have them.

From Dr. George Austin Bowen, master Connecticut State Grange, and president State Dairy Association, Woodstock, Conn. :—

I believe that almost every item of our commercial foods is adulterated or contains injurious ingredients, but I have no case now in mind concerning which I could go into court and testify under oath. This has been going on for so long a time that the public have come to believe that adulteration is necessary. It is not only our foods, but the medicines and drugs which we depend upon for the restoration to health, when that health has been oftentimes impaired by these adulterated foods. It seems to me that, of all things that should be protected from adulterations and frauds, these remedies to restore us to a normal condition should be the best protected.

Thirty odd years ago, when I was a student of medicine, we were taught how to detect frauds regarding the various drugs then in use. It was as much a part of our education in materia medica to know the frauds as the true articles, and it seems to me that the frauds have been multiplying since then with a greater power than ever known in bacterial life.

We have no preventive laws of importance in our State that I am acquainted with. We endeavoured last winter to get through a pure-food Bill. It went through the House all right but got lodged somewhere in the Senate. We did, however, get through a splendid oleo Bill, based largely upon that in operation in Massachusetts, and taking some of the good points from Ohio. This is now in operation in our State and is having a good effect in obliging oleo to be sold uncoloured for what it is.

I can conceive of no more beneficial law than a national food and drug law which would compel a proper branding of all articles of food or drugs that are sold in our markets. It seems to me that these fundamental conditions for the health of the people cannot be too closely guarded. Agriculture is said to be the foundation of national prosperity. We do not go to the bottom of it, for food and health are the foundations upon which our whole social structure rests.

Our cities and towns are all beginning to understand the importance of the milk question, and are agitating for a proper inspection, but as yet we have nothing of the kind. Our daily milk supply is adulterated in many ways, to the great detriment of infant life, and needs a restraining influence from State authority.

The following is from the Connecticut Agricultural Experiment Station Report for 1887, pages 105, 106:—

IMPERIAL GRANUM.

CCLXXIX, as described by the proprietor, "Imperial Granum, the Great Medicinal Food." This justly celebrated dietetic preparation is in composition principally the gluten derived by chemical process from very superior growths of wheat. A solid extract. The invention of an eminent French chemist. It has acquired the reputation of being an incomparable aliment for the growth and protection of infants and children. The salvator for invalids and the aged, etc.

ANALYSIS.

	Imperial Granum	Wheat Flour (average of 25 analyses)
Water	11.10	12.56
Ash	.33	.56
Albuminoids, incl. gluten	10.13	11.28
Fibre	.10	.27
Nitrogen-free extract	77.58	74.13
Fat	.82	1.20
	100.00	100.00
Cost per pound	\$1.00	\$0.025-0.05

The Imperial Granum contains 77.24 per cent. of wheat starch, with possibly some dextrin. The quantity of dextrin and dextrose is not more than 1.8 per cent. The only wide difference between the figures given above for granum and wheat flour is in the cost per pound. The granum cannot be distinguished in chemical composition and properties from wheat flour slightly browned, which cooked as a porridge has long been used and prized as a food for infants and invalids.

It does not consist principally of the gluten of wheat, and is in no respect superior as food to good wheat flour.

From W. I. Bartholomew, secretary and treasurer Connecticut Dairymen's Association, Putnam, Conn. :—

The matter of the adulteration of foods and drugs has been several times discussed in the meetings of our association, and the consensus of the opinions was that such adulterations prevailed to an alarming extent, and that preventive laws were much needed. A Bill for this purpose was presented to our last legislature, but for some reason failed to secure passage. But we secured a law, about to take effect, that oleomargarine, if offered for sale, shall not resemble yellow butter. It is stated that in consequence of this but 5 dealers have taken out licenses as against 69 last year and over 200 in Rhode Island (which is in the same revenue district) this year. I think the brands of foods and drugs should honestly indicate their character.

(To be continued.)

GRIMBLE'S PURE VINEGAR

Guaranteed BREWED and free from ANY ADDED ACIDS.

GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

COLEMAN'S

"WINCARNIS"

OR

LIEBIG'S EXTRACT OF MEAT & MALT WINE

IS THE FINEST TONIC IN THE WORLD.

OVER TWO THOUSAND TESTIMONIALS

Have been received from Medical Men.

SEVEN GOLD MEDALS AND ONE SILVER MEDAL

Have been awarded.

Sold in Bottles 2s. 9d. and 4s. 6d. everywhere.

Sole Manufacturers:

COLEMAN & CO., Limited, NORWICH and LONDON.

A 2s. 9d. Bottle sent Post Free on receipt of 88 Stamps

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Food and Sanitation.

SATURDAY, NOVEMBER 23RD, 1895.

WHAT MEDICAL OFFICERS OF HEALTH ENDURE.

We had a few very necessary remarks in our last issue on the latest insanitary dodge in Islington. The following letters are further contributions to the new terrorism. O'Connell once, in speaking of the late Lord St. Leonards, whose family name was Sugden and his coat of arms a barber's pole, asked his audience if any of them would do a decent pig the indignity of calling him by so ugly a name as Sugden. What he would have said about such atrocious baptismal abuses as Nokes and Nokes and Gard we can only imagine. The first atrocity, we believe, belongs to the Landlords' Protection Association, the second has a warning in itself. The following is the method in which these "shent per shenters" back up their spokesman. The letters appear in the *Islington Gazette* of Nov. 11:—

"THE MODERN DRAIN QUESTION.

"Sir,—We are pleased to see that your correspondent, Mr. E. Edwards, has called attention to a

crying evil in the administration of the Public Health Department of the Islington Vestry. The Metropolitan House Investment and Agency Company, Limited, is not the only victim of the arbitrary use made of the unusual powers conferred by the Public Health (London) Act, 1891. Our firm manages for various clients a number of houses in Islington and other metropolitan parishes, but the sanitary notices are far more numerous in proportion in Islington (especially in district No. 12) than in any other parish. It has been suggested that the Local Government Board should be petitioned to institute an inquiry into the management of the Sanitary Department of the Islington Vestry. Perhaps some of your numerous readers who feel aggrieved in this matter would like to assist those who are agitating for this independent inquiry? We believe many strange things would come to light.

"We are, &c.,

"NOKES AND NOKES.

"67, Caledonian-road, N.

"November 8, 1895."

"SIR,—I have read the letter signed by Mr. Edwards in your issue of to-day regarding the 'modern drain question,' and I endorse his views that, owing to the fads of the Sanitary Department, property in Islington is hardly worth having.

"It is notorious amongst those whose business takes them frequently to Tokenhouse-yard, that Islington properties realise about 30 per cent. less than they did before the Public Health Act (1891) was passed. The reaction of this so-called vigilance will soon be apparent by reducing the assessments throughout the parish.

"A serious phase of the sanitary question is the dishonest method adopted by the department of serving notices to do work, which they know they cannot enforce by law. People receiving a notice signed by the Vestry Clerk naturally think that an official in such a lofty station would not demean himself by demanding work to be done outside the ample authority of Acts of Parliament and County Council regulations, but such is not the fact in Islington.

"Property owners observing the official-looking documents, unsuspectingly and ignorantly spend their money to comply therewith, and in so doing are, in my opinion, virtually defrauded. To obtain money by false pretences is a crime, but to make a man spend it by the employment of false pretences ranks amongst the virtues by the Upper-street authorities.

"I am, &c.,

"C. J. GARD,

"For the Central Property and Equity Investment Company, Limited.

"November 8th, 1895."

Now, let it be stated to the credit of these gentlemen that they do not allege that any of this work was not necessary for the health of the inhabitants, for they are not the sort apparently who would spend twopence for public health purposes if the law gave them the chance of getting out of it by spending a penny. Their great point is Tokenhouse-yard and interest. Well, thank God, although local bodies have many abuses to answer for, there is one thing that they are realising more day by day, and that "Jerry" and "Mr. Slum-Property-Owner," rage as they will, can no more arrest the progress of than they can the ebbing and flowing of the tide, and that one thing is that human lives are more precious than "shent per shent," and the more this is realised the better the health of the people.

PEANUTS FOR CONSUMPTIVES.

DR. BREWER has a new idea concerning food for consumptives. His treatment consists of the inhaling the fumes of vinegar and the eating of peanuts. He gives his patients as many peanuts as they can eat without injuring their digestive organs. Two young ladies, who had been the rounds of the doctors and taken cod-liver oil and tonics till they were nearly dead, were put on his treatment and recovered. Concerning these cases Dr. Brewer says: "I now commenced feeding (do not laugh) peanuts. One would think this a very indigestible diet, but they craved them, and it has always been my policy to find out what my patients desire to eat, and unless it is too unreasonable I humour them. Both young ladies have become quite plump, and after a year's inhalation have ceased coughing, and I pronounced them well. The peanut was long known as an excellent fat-producer, and much more agreeable than rancid shark-oil that oftentimes is sold for cod-liver oil. While not all can digest peanuts, a great many even with feeble digestion eat them without discomfort. It beats the Koch lymph, and is the most satisfactory treatment I have ever tried for these diseases."—*Journal of Hygiene*.

THE EXPERT WITNESS.

IF there be a filthy insanitary nuisance for which not a word of well-grounded defence can be urged, it is the two-gallon flush, but even it has its "expert" defenders. What a vast number of blessings we would be minus of did not these "expert" witnesses exist! Alum in baking powder, East London water famines, salicylic acid in wine, "malt" vinegar innocent of any acquaintanceship with malt, "the trail of the expert is over them all." But there is a way with respect to the two-gallon flush of being even with the water companies. Fortunately there exists no edict preventing a person using the flush twice—once on entering and again on leaving. It would be well for all householders were this easy method of making the water companies sanitary generally adopted in London. The companies would find that it would be cheaper to agree to the three-gallon flush, and they would save money and shield the public from exhibitions like those afforded by that hoary "expert" witness, Sir Frederick Bramwell, and that great professor of the "Smitheries." Of course a simpler way might be adopted for suppressing the "expert," but that rests with the societies honoured by the membership of the "experts."

THE ACTION OF MUSTARD AND PEPPER ON DIGESTION.

IN nearly all experiments dealing with the action of condiments or other like substances on digestion, the work done has been limited mainly to the influence of the substance upon the secretion of gastric juice, or to the effect of the presence of the substance upon the purely chemical process of gastric digestion. Dr. Gottlieb, of Heidelberg, however, has recently tried some interesting experiments on the influence of mustard and pepper on the secretion of pancreatic juice. The experiments were conducted on rabbits, a cannula being inserted in the pancreatic duct, after which the condiments were introduced into the stomach. The presence of either of these substances in the stomach led to a marked increase in the secretion of pancreatic juice, the volume of fluid being increased three or four times. As might be expected, the juice secreted under these conditions was somewhat more watery than normally, but showed the usual digestive properties on all three classes of food-stuffs.

ANSWERS TO CORRESPONDENTS.

B. I. P. H.—Not a particle of animosity is entertained by the editor of this journal against the "great man." The editor merely writes his opinions of walruses, ornithocoprosities, and noxious nuisances generally. It is no use saying Sir Charles Cameron is a friend of his, and producing that fact as a proof that the scientific curiosity has brains. Sir Charles Cameron is a friend of the editor of this journal, but that, though it is a pleasure to the editor himself, does not make a really estimable and lovable man answerable for the editor's follies, as you call them. This editor would be very much obliged if stupid persons would cease to believe that he is Mr. C—l, or Mr. H—r, or Dr. D—r. He is none of these persons, and they do not write the articles in FOOD AND SANITATION. The editor does not know what a tinker's curse is, but the probabilities are that it has no real value, so the B. I. P. H. can go on tinker's cursing him until they tire of the job.

POINTS FOR TRADERS.—II.

IN BUYING BUTTER INSIST ON HAVING A WARRANTY.

AT West Hartlepool Police-court, on November 18, Wm. Wilson, 103, Lynn-street, was summoned under the Food and Drugs Act, by Mr. Wheat, for having on October 12 sold butter which was adulterated. The Town Clerk conducted the prosecution.—Bridget Casey said that on the date named she purchased for Mr. Wheat half-a-pound of butter at the shop of defendant. She gave 7½d. for it. Mr. Wheat came into the shop at this point, and she handed him the butter.—Defendant: It was bought for butter and sold for butter.—Mr. Wheat gave evidence. He said he got a sample of the butter analysed. The certificate showed that the butter contained 56 per cent. of fat which was not butter fat. The price he paid for that butter was the highest he had paid that day. He got good butter for 10d.—Defendant said he had no guarantee. He took the traveller's word. With respect to the statement that good butter had been purchased for 10d., he might say that that day he paid 1s. 2d. wholesale for Danish butter. Defendant said he knew Mr. Wheat was coming, and if he had been wishful to deceive the public he would have removed the butter. The fact that he did not remove the butter showed he was acting in good faith. The Bench remarked that carelessness was apparent in the purchase of the butter, and a fine of £5 and costs would be imposed. The wholesale dealer may in such a case refund the fine and costs, but the opprobrium remains on the retailer.

WHAT ARE THE CHANCES OF A PROSECUTION?

IN some districts this would reckon out once in eternity—we now speak of enlightened places like Bedford, where, once upon a time, a local ass—we beg pardon, Mayor—put some arsenic, or prussic, or some poison, in beer, and chuckled because the public analyst did not discover it. It never struck his muddle-headedness that a public analyst does not analyse beer for poisons, but to certify if it is beer. It did not strike that quintessence concentrated of a sublimated mare's close relation that he could have done better with that beer than send it to Dr. Stevenson. He might have drunk it. But if anyone wants to sell any swindle, Bedford is a safe place. More enlightened places like Oxford and Cambridge, are, of course, safer, because it is a curious, but certain fact that culture and ignorance are inseparable, and the memory of no man is strong enough to bear the strain of going back to the time when anything was done to check fraud in food stuffs in those places.

Naturally the poor creatures grow up physically and mentally weak, which may explain why "Dismal Jimmy," unable to assert himself singly, "Colmanised" himself, which "compound" naturally weakens the pungency of the *Sar*. The trader looking out for a place where he can swindle with impunity, could not do better than locate himself in Bedford, Oxford, or Cambridge. He might do well in the Strand district, because, since a few months ago, all the food seems to have become pure, so a trader who wants to sell milk purified by water, and with the nasty eructative fat off it, might do worse than settle in the Strand. It is fifty chances to one that he would grow blue-mouldy before his honest game would be stopped.

BUT HE HAD BETTER KEEP OUT OF SKIPTON AND DISTRICT.

Mr. Arthur Randerson looks after adulteration, and he does it well, although his district covers as many miles as extend from near Bradford to Westmoreland. If there be one adulteration offence worse than any other, it is that of drug adulteration, for it may paralyse the skill of the ablest physician, and put a poor sufferer into a grave he would rather keep out of. There are so few drugs that are amenable to the Adulteration Acts, thanks to that model of indefiniteness, the British Pharmacopœia, that the average druggist has become a law unto himself. It is just as well for the public well-being that when the British Pharmacopœia can be used on him, it should be, even if it be only in the case of the stomach-distorting seidlitz. At Ingleton, John Thomas Baycliff, chemist, Ingleton, was summoned by Arthur Randerson, inspector under the Food and Drugs Act, for selling seidlitz powders (through his assistant, Arnold Wilkinson), on September 11th, not of the nature, substance, and quality demanded.—The Inspector said he purchased one box of Seidlitz Powders, for which he paid 1s. 2d., which he divided into parts; one part he left, the second he sent to the county analyst, who certified that their composition was not according to the British Pharmacopœia, and the third he produced in court. He labelled each part No. 221a.—The defendant said he did not make them up, and he had never seen them. His manager told him that the inspector did not ask for B.P. powders. Seidlitz powders were made in four strengths, and he did not see that they were far wrong. Until lately, seidlitz powders might be anything that the one who mixed them liked, and he maintained that the powders in question were equal to or superior to thousands that were put upon the market.—Arnold Wilkinson, assistant, said that in any shop that he had been in he had been accustomed to making four strengths. It was only lately that they were required to be made officially. He told the Inspector that they had none made when they were demanded, and that he had not weighed them as he (the inspector) was in a hurry. When making them up he always weighed them, but on this occasion as the inspector was in a hurry he measured them (measure produced in court). Measuring them was not so exact as weighing them. To prosecutor: You did not ask for B.P. powders, or you would have got them.—The Bench adjourned, after which the defendant was fined 1s. and costs (£1 13s. 1d.), the chairman remarking that they did not wish half Ingleton to run the risk of being poisoned.—A second charge in respect of bismuth lozenges was adjourned.

Now this is like Alma Tadema's interest in Epps's cocoa, grateful, and comforting, for

WHAT DID THIS SEIDLITZ POWDER ANALYSIS SHOW?

The contents of the four blue papers weighed respectively 124.3, 131.5, 149.3, and 158.2 grains, averaging 140.7 grains. Of this weight, 38.8 grains consisted of bicarbonate of sodium, the remaining 101.9 grains being tartarated soda.

The contents of the four white papers, consisting

of tartaric acid, weighed respectively 37.5, 39.3, 39.9, and 41.5 grains, averaging 39.6 grains.

An observation on the analysis by Mr. Allen was that seidlitz powders were constituted an official preparation by the additions to the Pharmacopœia of 1885 published in 1888, which direct that the contents of each of the blue papers shall weigh 160 grains, of which 40 grains shall be bicarbonate of sodium and 120 grains tartarated soda, and that each of the white papers shall contain 38 grains of tartaric acid.

This may mean Greek or Choctaw to the uninitiated, but it means, like alum in baking powder or sugar in beer, a thundering big extra profit to the wholesale man, who plays this game even in seidlitz powders.

A GOOD WORD FOR ADMIRAL FIELD.

We said some bitter things a few months ago about Admiral Field, M.P. We are glad to note that he has mended his ways. There is a breezy, splice-the-main-brace manner about the lovable old salt's utterances in the following case that almost leads us to pardon him his terrible backslidings on cocoa. At Gosport, on November 14, an important prosecution took place. The defendant was Edwin Bishop, of North-street, and the summons was instituted by Mr. A. W. Constable (Master of the Workhouse) on behalf of the Guardians, and alleged that on October 17, defendant did unlawfully sell, to the prejudice of the Guardians, a certain article of food—butter, which was not butter, but a compound, prepared in imitation of butter, containing 98 per cent. of foreign fat.

Mr. G. H. King prosecuted, and Mr. Graham Whitlock defended.

A brief opening statement by Mr. King showed that defendant, under his contract, was supposed to supply Normandy butter. On October 17, Mr. Constable, according to instructions from the Guardians, sent George Edney (the Labour Master) to defendant with an order for 66lb. of Normandy butter. The order was executed, and Mr. Constable then forwarded the package to the County Analyst, who found it to be not butter, but margarine.—Admiral Field: Margarine, is it?—Mr. King: Margarine, really.—Mr. Constable proved the order for the butter, its reception, and the despatch of a portion to Mr. A. Angell (the analyst), with the result as shown. The contract price was 8d. per lb., and the contract to last six months.—Mr. Angell (the analyst) was called, and declared the article was not injurious to health, but as an article of diet, speaking in the general sense, it was as good as butter.—The Admiral: As palatable?—Mr. Angell: I don't try it myself. (Laughter).—The Admiral: Do you think it is as nourishing as butter.—Mr. Angell: I think it is as easily assimilated in the system as butter itself.—Mr. Whitlock said he could not dispute the certificate. But a mistake had been made, and every investigation had been made to clear the matter up. His client had not wilfully done this kind of thing.—The Admiral asked if the Guardians really thought they would get pure butter at 8d. per pound? That rather told in favour of the contractor.—The reply by Mr. King was that Normandy butter was asked for—"Good and pure butter according to sample, description to be specified."—After a deliberation, the Bench, through the Admiral, said that the wrongdoers were the men behind who supplied the retail trade. No doubt the price was low, but that was for the defendant. If ever there was a case for the full penalty this was one. There were no extenuating circumstances whatever. Defendant was known to be a large wholesale dealer, and must be taken to know what he was supplying. Butter of this character, it was a fraud to call it butter—it was not butter at all. "This is the stuff," said he scornfully, "served out to the poor, under the system of contract!" The bench ordered defendant to pay £20 and the costs of the case £4 9s. 6d.—Mr. W. O. Field told the Bench the Guardians had given defendant notice they would hold him strictly to the contract.

The moral of this case is that you may sell starch for cocoa around Gosport without having a gun spiked, but don't run healthy margarine on paupers, at butter prices.

MARGARINE IS GOOD ENOUGH TO SELL ON ITS OWN MERITS.

It is really only interested persons and servant girls who object to it, and intelligent men show the folly of such objections as Mr. Angell did in the above case, and as Mr. Lane did in the following one:—

A young woman who had been in service in Sinclair-road, West Kensington, attended before Mr. Lane, at the North London Police-court, to complain of her mistress discharging her because she could not eat margarine.—Mr. Lane: Have you ever had it before?—Applicant: No, sir.—Mr. Lane: I am not at all certain you are justified, for there are thousands of people who eat margarine.—Applicant: I think I ought to have something better.—Mr. Lane: Margarine is a very wholesome thing. It is used by many people and in restaurants. So long as there is no deleterious element in it margarine can be eaten.—In answer to the Magistrate, the applicant said it was offered to her for breakfast and nothing more. Mr. Lane, in telling the applicant that she would have to go to the county court for her wages, thought that the lady had acted unreasonably in not providing sufficient for a morning meal, but said if she (the applicant) was not polite to her mistress the Judge might decide in favour of the lady.

If the judge were a judge of the mental fitness of Judge French, he would so decide, but if the case came before some judicial crocks we know Heaven only could tell what the decision would be. It would depend on the mummy's power of hearing, and which solicitor he preferred.

WHERE THE MARGARINE DEALER SCORES.

The Daily Driveller, of November 16, has this paragraph:—"Margarine dealers have not been slow to take business advantage of the recent magisterial utterance concerning the large consumption of the well-known substitute for butter—its wholesome character, and its use in restaurants—when a servant girl complained of having been given margarine for breakfast. A firm in St. Luke's have their windows covered with posters containing extracts from the learned magistrate's expressed opinion concerning the virtues of the article, and tubs of the compound are ticketed as follows: 'Better than butter. The servants' delight!' and 'No reasonable slavey could refuse to eat this!'"

We like a good romance, and we can always get it in *The Daily Driveller* if we miss a Dalziel's telegram. But a trader may do worse than this advertisement. He might go in for getting 10 per cent. of water out of

FREEDING COWS ON TURNIP-TOPS.

Since that famous case of Lloyd's cows, of which we have never seen herd or analysis, there has not been much in the milk world to make analysts grin like a Cheshire cat or to cause the Editor of FOOD AND SANITATION to laugh in his sleeve so hard as to wear its lining away. It was only the fact that he didn't know the case was coming on that kept him from St. Helens, on November 18, for he would have expected a real day of delight. Round about the court it might be supposed would be dotted Lloyd, De Hailes, Redwood, Lascelles Scott, Granville Sharpe, A. P. Luff, Salamon, and a few other choice spirits, and the unfortunate bench would have learnt something. As it happened, they were not there, so the turnip-top theory hung fire. William Parr, milk-dealer, 20, Broad Oak-road, and Councillor John Smith, farmer, of Ashton's Green Farm, were the victims summoned for selling adulterated milk. Mr. W. J. Jeeves (town

clerk), prosecuted; Mr. Garner, representing the St. Helens Milk Dealers' Association, defended Parr; and Mr. Riley defended Smith. On October 28, Sergeant Kerrigan purchased a sample of milk from Parr's vehicle, which was found by the public analyst to contain 10 per cent. of added water. Parr said he had got the milk from Smith's farm, and had not tampered with it. Two samples were taken at the farm on a later day, and they contained 7 per cent. of added water. Mr. Smith appeared distressed at the result of the analysis, and attributed the quality of the milk to the food given to the cows. The Chief Constable agreed to allow constables to watch the process of milking the sixteen cows on the farm, and after the whole of the milk was put together a sample was taken. That was found to be "genuine and of good quality."—Mr. Garner said Parr had placed the most implicit confidence in the farmer. The association which he represented were very desirous that the public should be protected against having milk which had been watered. Mr. Riley, in defence, said Mr. Smith's cows had fed on turnip tops in the fields, which were regarded as a very watery diet. The defendant's desire had always been to act honourably, and nothing had been known against him previously. He had, prior to the first sample being taken, recognised the poor condition of his cows, and had received two tons of a proprietary article known as "rapid fattening meal." It had acted with almost immediate results, and Mr. Smith had requested the Chief Constable to take another sample, which, he said, would show a further improvement in the quality of the milk. Mr. Smith bore out Mr. Riley's statement; and Mr. J. Hamilton, of Old Garswood Farm, said it was a well-known fact that turnip-tops did not tend to produce good milk. They produced quantity at the expense of quality. He had heard the whole of the case, and was of opinion that Mr. Smith's defence was an honest defence. The magistrates decided to dismiss the case against Parr, and in the case of Smith inflicted a fine of £2 and costs.

ALEXANDER DUMAS ADVISES OUR READERS.

Whatever Alexander Dumas *père* wrote was worth reading, and although his son lacks the leonine character of his father, he has brains. This is what he says:—

"Walk two hours every day; sleep seven hours every night; go to bed always alone, if you need sleep; get up as soon as you wake; work as soon as you get up; eat only when you are hungry, and drink only when you are thirsty; and eat and drink always slowly.

Never speak except when it is necessary, and never say more than half of what you think. Never write anything that you cannot sign, and never do anything that you cannot avow.

Never attempt to produce anything without a thorough understanding of that which you undertake, and destroy as little as possible.

Try to be simple, to become useful, to remain free, and before denying God wait until somebody proves to you that He does not exist.

To get married when a man is young is healthy; to choose, in no matter what class, a good, honest girl; to love her with all his heart and soul, and to make her a reliable companion and a prolific mother; to work to raise his children, and to leave them when dying the example of his life—that is the true meaning and object of life."

This, as far as it goes, is all right, but there is a something wanting. Why has he omitted Professor Smith?

TO SWEETEN RANCID BUTTER.

According to the *Bulletin d'Agriculture Constantine, Algérie*, rancid butter may be sweetened by working it

up with water containing 20. to 30 drops of solution of chlorinated lime for each kilo. of butter. Allow to stand, and the butter will lose its rancid odour and taste. Another way is to stir up the butter with water containing bicarbonate of soda. In either case, after treatment the butter must be well washed with cold water and then salted.

BAD MEAT AT SOUTH SHIELDS.

At South Shields, on November 4, Thomas Posgate, 95, Catherine-street, was charged with depositing unsound meat for preparation for sale on the 24th ult., on premises at Green's Hill, Thames-street. Mr. J. M. Hayton (Town Clerk) prosecuted, and Mr. C. W. Newlands defended.

The Town Clerk, in his opening statement, said that Posgate and a man called Carr purchased four animals in Newcastle Market on the 23rd ult. The cattle were brought to South Shields and slaughtered in a slaughter-house in Thames-street the same night. On the following day the inspector called at the place and found three of the animals already slaughtered. They were hanging up. One of them was cut in two. The beast had been suffering from tuberculosis. The carcase was very much emaciated, and there was an entire absence of fat. The lungs and livers were riddled with tuberculosis. Portions had been cut away, but there was sufficient evidence to show that the animal had suffered to some degree from tuberculosis. Another beast, hanging by the neck, had suffered from dropsy and tuberculosis. About noon on the 24th the carcasses were taken before a magistrate, who ordered their destruction. There was a third carcase hanging up, but it was in a fair condition. A fourth animal was in the adjoining slaughter-house, which Posgate and Carr gave up.

Mr. M. J. Pollock, inspector, gave evidence bearing out the opening statement of the Town Clerk. In answer to Mr. Newlands, witness said he visited the slaughter-house about once a week, generally on Thursday or Friday. The defendant said the four animals had cost £12 10s. Witness could not say whether the disease would be apparent when the cattle were alive or not. He did, however, detect the disease in the fourth one, which was alive. He knew the defendants kept a stall in the Market-place on Saturdays. There was supposed to be an inspector in Newcastle Market whose duty it was to examine the cattle as they were driven out.

Dr. Turnbull, Medical Officer of Health, said that one of the carcasses was comparatively small, and was extremely emaciated, there being hardly a scrap of fat about it. The lungs showed extreme evidence of tuberculosis. Part of the lungs and upper surface of the liver had been removed when he saw it. The second carcase was a good deal larger. It was much emaciated and very dropsical, water trickling from it on to the floor. The inside of the chest showed evidence of recent pleurisy. The lungs were considerably affected with tubercule growth, and the liver also to a slight extent. The flesh was totally unfit for food.

Mr. Newlands, in defence, held that the defendant could not have intended to offer a bad article for sale knowingly. He knew the meat would come under the eyes of the inspector before it was sold, and he had not himself detected the disease which was noticeable to an expert like Dr. Turnbull.

A fine of £5 and costs was imposed.

Robert Carr, of 93, Morton-street, was concerned in the same charge, but the magistrates ruled that, as the men were in partnership, one fine met the case, and the second charge was dismissed.

THE "CITY PRESS" ON THE WHOLESALE ADULTERATER.

There is a partly sensible paragraph in our contemporary of November 20. "The law of adulteration appears to require amending in a very material point.

At present, it seems, a wholesale grocer can sell adulterated goods and escape scot free, while the innocent shopkeeper, who fondly imagines he is acting honestly, is summoned and mulcted in a substantial sum. Surely the Inspectors should go at once to the fountain head and attack the wholesale merchant, or, if he is not the actual culprit, the manufacturer. As matters are now, the fine is imposed on the last man who can afford to pay it and the last who ought to pay it." But suppose the law did place the wholesale merchant in the dock. Imagination, choked in mephitic air, recoils from the prospect of the many philanthropists who would be missing from their places in Parliament were the summonses returnable on the opening day of our national talk-shop. With all respect to the *City Press* we fear it would not do. It would be very undignified to have the Speaker of the House of Commons running about police-courts to find sufficient members to form a quorum.

COFFEE.

At the same court, Thomas Richards, Bromfield-road, Prince's End, was charged with selling as coffee a mixture which contained 50 per cent. of chicory, and with having two lots of margarine unlabelled in his shop. With reference to the first charge, Mr. A. Whitehouse, who defended, said the question was whether the defendant had fraudulently increased the bulk, the paper wrapper bearing upon it the words, "A mixture of chicory and coffee." The Stipendiary said there was also a statement that it was fresh roasted coffee. He was as much entitled to regard the one statement as the other. The words "fresh roasted coffee" were part of a pictorial illustration on the paper, the prominent notice was that what the paper contained was a mixture. Proof of the purchase having been given, Mr. Whitehouse said the wholesale price of the coffee was 1s. 5d. per lb., the carriage and packing coming to another penny, and the price of the chicory was 4½d. per lb., so that the cost of the mixture would be about 1s. per lb., and it was sold at a profit of 25 per cent., which was not an excessive profit, the sales being very largely in ounces and two ounces. It was only good coffee that would mix with chicory. The Stipendiary said he would not decide this case entirely upon the label. Upon the top of the paper were the words in large type, "Fresh roasted coffee," and underneath in smaller, but not much smaller, type, was "This is sold as a mixture of coffee and chicory." It was, he thought, rather stretching a point in favour of the defendant to say that this label was within the meaning of the Act, because it said both things, and one had to guess which was right. But, assuming that to be a label, he had to consider whether the chicory was added fraudulently to increase the bulk of the article. The price which Mr. Whitehouse had named as that of the coffee was a high one, but that of the chicory was about the wholesale price. There they got a profit of 25 per cent.; and the effect, if they got half chicory and half coffee, of the way in which the label was compiled was to cheat the purchaser. It was part of the fraud, and an article was sold which was not fresh roasted coffee, but half chicory. Assuming it to be a label, and he was not sure that he was right, the chicory was added for the sake of fraudulently increasing the price of the article. Proof of margarine being unlabelled in the shop was then given; and Mr. Whitehouse admitted the offences, adding that in a short time the defendant was absent from the shop on the day in question a young man who was learning the business committed about as many offences as it was possible to commit within the time—selling bread without weighing it (for which a fine had already been imposed), neglecting to put labels on the margarine, and selling the mixed coffee. A fine of 20s. and costs (£1 5s. 6d.) was imposed in the case of the coffee, and 10s. and costs in each of the others.—Sarah Wilkes, shopkeeper,

Bilston-street, Darlaston, was fined 20s. and costs for not having the margarine in her shop properly labelled. —John Ryder, Wood Bank, Darlaston, shopkeeper, for a like offence, was fined 20s. and costs, making £2 4s. 6d. altogether, or fourteen days' imprisonment. —Thomas Lawton, New-road, Ocker-hill, shopkeeper, for having three defective weights in his shop, was fined 20s. and costs, or fourteen days' imprisonment. His defence was that the weights were not used in his business.

ADULTERATED DEMERARA SUGAR.

Frances Holgate, shopkeeper, of 9, Prince-street, was summoned at Bristol for selling sugar which was adulterated. Sergt. Beer, an inspector under the Food and Drugs Act, deposed to visiting defendant's shop on the 3rd instant, and asking for 1lb. of Demerara sugar, for which he paid 2d. This had been analysed, and was stated to consist of refined crystals dyed with a coal tar colour. Defendant said she had bought the sugar as pure Demerara, and gave the name of the firm who had supplied her. The bench considered that there was no blame attaching to her, and fined her merely 1s. without costs, advising her, however, to be more careful in ascertaining that she had the genuine article in future.

MUSTARD ADULTERATION.

Edward Hedges, a grocer, of Somerset-street, Redcliff, was summoned at Bristol, under the Food and Drugs Act, for selling mustard adulterated with not less than 45 per cent. of wheat, starch, and turmeric. Sergt. Beer said that he was served by the defendant's wife, having asked for half a pound of mustard. The city analyst had condemned it as being adulterated to the above-mentioned extent. The defendant produced a tin, from which he said the mustard was served, which bore the statement that it was a compound. The complainant said his attention had not been called to this, and the bench, while inflicting a fine of 1s. and costs, told the defendant that he should inform customers that it was a compound or else have the retail packets labelled.

FINES FOR ADULTERATION.

Dr. W. Sedgwick Saunders, in his annual report on the sanitary condition of the City of London, calls the attention of the Commissioners of Sewers to the remarkable differences that exist in the penalties imposed for offences against the Excise authorities (who are generably represented by the legal profession) and the insignificant and trumpery fines imposed upon milkmen and small general traders who are convicted of deliberate and fraudulent sophistication of their goods. He says: "It is a common experience that a publican may be fined £50 for adding half the quantity of water to his beer that a dairyman would add to his milk, at the cost, perhaps, of a shilling fine. The practical inference to be drawn from these differences is that, whereas, in the case of milk, a child or an invalid may be deprived of 25 to 50 per cent., and even more of nourishment, essential perhaps to the maintenance of human life, the publican who may add the same quantity of water to his beer, which injures no one, and may be a blessing in disguise, is mulcted in large demands upon his pocket in the shape of fines, while the dairyman too often escapes with a nominal penalty. The explanation of this may be that the publican is pursued by the restless activity of an Excise officer, aided by the best available forensic talent, while the milkman is prosecuted in a slipshod, half-hearted way by local authorities, who frequently appear indifferent as to the result. What a travesty upon justice!" Dr. Saunders adds that in the City it has not been deemed necessary to institute any prosecution, although some of the articles examined have been perilously near adulteration.

THE LAW UPON COFFEE.

At Bow-street, on November 6, Isaac Evans and Co., 175, Drury-lane, were summoned before Mr. Vaughan, for selling coffee adulterated with 55 per cent. of chicory without giving due notice to the purchaser. Mr. H. C. Jones prosecuted on behalf of the St. Giles's Board of Works; Mr. White defended. Mr. Jones explained that a man in the employment of the Board went to the defendants' shop and asked for a quarter of a pound of coffee, for which he paid 3d. It was wrapped in a paper on which was printed a notice to the effect that the contents were a mixture of chicory and coffee. It would be proved, however, that the man who served the purchaser did not draw his attention to the notice until he was told that the coffee was required for analysis. He (Mr. Jones) contended that the printed notice was not sufficient, and quoted cases to show that the vendor should give a verbal notice as to the nature of the stuff he was selling. Mr. White quoted cases with the object of showing that no verbal notice was required, and argued that the case came under the protective clauses of section 8 of the Sale of Food and Drugs Act. Mr. Vaughan said there seemed to be some difficulty in arriving at a conclusion as to what notice should be given by a person who sold a mixture of chicory and coffee, and he would adjourn the case in order to consider the matter. Whatever the result might be, he hoped that in future the defendants would print their notices as to chicory on plain paper. The paper in which this particular mixture was sold was coloured, and the notice was not very easily seen. Mr. White explained that it was a custom in the trade to use coloured paper for mixtures and white paper for coffee. On November 13, Mr. Vaughan gave his decision. He had, he said, looked into the case, and found that the printed label was quite sufficient notice. In his opinion there had been no attempt to defraud, and the case would be dismissed.

A HARD CASE.

David Parker, grocer, of Ecclesfield, was charged, at Sheffield, on Nov. 5, with unlawfully selling to Joseph Wilson one half-pound of coffee which was adulterated and not of the quality required. Mr. Brutton, of the West Riding solicitor's office, Wakefield, appeared to prosecute on behalf of the County Council; and Mr. A. Muir Wilson defended.—It appeared from the opening statement that Mr. Joseph Wilson, inspector of food and drugs, Rotherham, called at the defendant's shop on the 24th September and bought one half-pound of coffee, which was afterwards analysed. It then appeared from the public analyst's certificate that the substance contained 67 per cent. of coffee pure, and 33 per cent. of chicory. The price of coffee was 1s. 8d. per lb., while the price of chicory was only 4d. per lb., so that the great fraud practised would be readily perceived.—Joseph Wilson, inspector of food and drugs, gave corroborative evidence.—Mr. Wilson: You don't impute any bad faith to the defendant?—Witness: No.—Mr. Wilson, for the defence, urged that the present was a case in which the County Council might have acted handsomely. He said that the object of the Act of Parliament was to stop fraudulent trading. There were four conditions to be acceded to by a buyer of an article before he was exonerated from blame in the event of a case of this description, three of them being allowed by the prosecution. He proceeded to quote from the invoice sent to the defendant with the goods, the sellers being Messrs. Carter and Smith, of Sheffield. The entry with regard to the present case was as follows:—"3lbs. genuine coffee, at 1s. 4d. per lb." Was that document in law a written warrant?—Mr. Brutton: We are bound to proceed against this man. If fraud is committed we are bound to proceed against it.—The Chairman: You are quite right in bringing the case forward.—Mr. Wilson suggested that if the Bench ordered the defendant to pay the costs that would be

sufficient punishment for him. If they fined him 6d. even people in the neighbourhood would be able to point "the finger of scorn" at him as a man convicted of fraud.—The Chairman said the Bench were of opinion that they must be guided by the late decision of Justices Cave and Wright in the case of *Towns v. Van Tromp*, and had, therefore, decided to convict. The defendant would be ordered to pay the costs of the prosecution. At the same time they wished to say that there was not the slightest imputation against the defendant, and that he was not to blame in the slightest degree.

MILK AND TYPHOID.

A man, who by carelessness and filth spreads typhoid fever broadcast, and meets at last the just punishment of falling a victim to the disease himself, is not likely to get much sympathy. At St. Helens, on November 11th, Henry Winstanley, of Ravenhead Farm, Ravenhead, was summoned by the Corporation for failing to furnish the authorities with the names and addresses of all his customers, as infectious disease had been attributed to milk supplied by him.—The Town Clerk (Mr. W. J. Jeeves) appeared to prosecute, and Mr. H. L. Riley represented the defendant. When the case was called, the Town Clerk asked leave for the case to be withdrawn, as the list of customers had been supplied.—There was another summons taken out against the defendant, charging him with keeping swine in a cowshed used by him for keeping cows in. The medical officer visited his premises, and found the pigs and cows kept in the one shippon, contrary to the provisions of the Milkshops Order. The premises generally were in a filthy and stinking condition, and that, coupled with the notifications, made it clear that in all human probability typhoid fever was being spread by the defendant. Under ordinary circumstances he should have asked the bench to mark their sense of the very serious character of the offence by imposing the maximum penalty, but since Friday last a much heavier penalty had fallen upon the man than the magistrates could have inflicted. He himself was now down with typhoid fever, and his case made eight cases in the borough. Seeing that he was now suffering himself, he (the Town Clerk) felt that they ought not to go on with the case against him, particularly as his solicitor had undertaken on defendant's behalf that the offences should not be repeated. He had mentioned the matter fully in order that the public might understand how very seriously the Corporation regarded such offences, and the reason why the cases were withdrawn.—Mr. H. L. Riley said he could only say, on behalf of his unfortunate client, that although he might have had some representations to make in mitigation of the offence, he appreciated the position taken up by the Town Clerk.—The magistrates intimated their consent to the proposed withdrawal of the cases.

THE WATER-AT-SPIRIT-PRICE GAME.

This is a very profitable method of adding to one's income and encouraging temperance, and as the chances are about one prosecution in a lifetime, a fine of a few pounds can be recouped in a few days and leave a handsome margin of clear gain. The following are the proper sort of defences:—

Fanny Wallis, proprietress of the Green Man Hotel, Ashbourn, was charged, on November 14, with selling whisky over-adulterated with water, contrary to the Food and Drugs Act, on the 10th of September last. Mr. Paine (Hanley) defended. For the defence, it was contended there had been no wilful intention of committing the offence, and it was submitted there was no liability where the acts of a servant are done without the knowledge or authority of the principal, as laid down in "*Kearly v. Tonge*" (1891), 60 L.J. Mrs. Wallis explained the method of mixing the spirits, which she entrusted to her cellarman. Thomas Coxon said it was his duty to mix the spirits. He put three pints of water to one gallon of spirits. He was mixing a 12-gallon cask of whisky and at the

time was called off. Some of the water was spilled, and he added what he considered was the proper quantities. The analyst's report showed that the whisky was 17 degrees under the required standard. The justices, whilst absolving the defendant from any wrong intention personally, decided to convict.—Fined £2 and £1 2s. costs.—Mrs. Wallis was further charged with selling whisky on a subsequent date over adulterated.—As the justices convicted in the first case, no defence was offered to the second charge.—The justices considered this case was more serious, coming so soon after the first charge, and imposed a fine of £5 for this offence and £1 costs.—Rebecca Palmer, of the White Horse Inn, Ashbourn, was another licensed victualler charged with excessive adulteration of whisky with water, on September 19 last.—Half-a-pint of whisky was purchased for analysing by the public analyst, and it was found to contain 78 parts of whisky and 22 parts of water, the deficiency in alcoholic strength below standard allowed being 17 degrees.—The justices considered this a large percentage of adulteration, and fined Mrs. Palmer £5 and £1 costs.—Herbert John Shaw, of the Brown Lion, was another innkeeper charged with adulterating whisky unlawfully on September 19.—A previous conviction was proved against the defendant, and the justices fined him £5 and £1 costs.—George Cholerton, landlord of the Horse and Jockey Inn, Ashbourn, was also charged with a similar offence.—The justices, in consideration of the excess of adulteration being small, only imposed a fine of 10s. and £1 1s. costs.

WHEAT-FLOUR AT MUSTARD PRICES.

This game does not pay the retailer over well, but done on a wholesale plan it turns out philanthropists, newspaper proprietors, and millionaires. It is a great pity that along with the defendant in the following case the originator of the game was not produced.—James Osborne, of Ashbourn, chemist, was charged with selling mustard mixed with a percentage of wheat starch, together with a little turmeric. After hearing an explanation offered by the defendant, it was decided that the case should be withdrawn on the defendant paying £1 1s. 6d. costs.

"SPENT" GINGER IS NO LONGER SAFE.

It seems incredible, but we believe it is the truth that the Somerset House chemists have at last come to understand something. There was produced at Wednesbury, on November 12, a certificate from these hopeless Government incapables, stating that a sample of ginger contained 20 per cent. of spent ginger. How this astounding thing occurred we cannot understand unless some capable public analyst had an hour or two to spare, and gave the Somerset House scientists his help. But the case is beyond dispute, as John Lawrence, grocer, of Trowse-lane, Wednesbury, knows, for he was summoned for selling adulterated ginger. At a previous hearing it was stated that the defendant sold as pure ground ginger an article which contained 30 per cent. of spent or exhausted ginger. For the defence it was urged by the analyst representing the manufacturers that the article was pure. The Stipendiary directed a sample to be sent to Somerset House, and on Monday a certificate was received stating that the article contained 20 per cent. of ground or spent ginger. Mr. B. Shakespeare said the defendant purchased some ground ginger from Mr. Grainger, a well-known wholesale grocer, who received a guarantee from Messrs. Thorn, the manufacturers, that it was pure; consequently it could not be said there was an intentional fraud on the part of his client. After hearing evidence in support of Mr. Shakespeare's statement, the Stipendiary said he was bound to hold that the offence had been proved. It was very important that the rights of purchasers should be protected. The defendant was fined £3 18s.

After this miracle, we have nothing left to astonish

us, save Lloyd's eight per cent. cows. But they may have given up producing eight per cent. of water in their milk. No cow could carry on such a practice long and retain her self-respect.

DEMERARA SUGAR.

At Bristol, on November 13, Henry Norris, of 79, St. George's-road, St. Augustine's, was summoned under the Food and Drugs Act for selling a pound of sugar said to be Demerara, which consisted of pure crystals dyed with a coal tar colouring. Sergeant Beer, an inspector under the above Act, deposed to purchasing a pound of sugar as Demerara at defendant's shop, which, according to the city analyst's report, was not Demerara sugar, but dyed crystals. Defendant said that an assistant made a mistake in retailing the article. They kept the pure Demerara sugar in stock, and there was only a fraction of a farthing in the difference of the price per pound. Some people preferred the article which was served. The bench said it was not a serious case, and imposed a fine of 1s. and costs only, and defendant remarked that he would be more careful in future.

THE "LIBERTY REVIEW" HAS AN OPINION.

"The Sale of Food and Drugs Act," it says, "is interpreted in a very illogical and arbitrary way both by inspectors and magistrates. An inspector entered one of Spiers and Pond's establishments the other day, and called for a glass of milk. Engraved on the tumbler was an inscription to the effect that the vendors would not guarantee the milk to be new, pure, or possessed of all its cream. Notwithstanding this, the vendors were fined, on the ground that the milk was 17 per cent. short of its cream. Yet in almost every hotel bar is a notice stating that spirits are sold adulterated, and this is done in order to avoid prosecution. It shows how unnecessary these Acts are, and what power they put in the hands of inspectors."

Exactly, and it also shows how little sense is required in the production of the *Liberty Review*.

CHESHIRE ANALYST AND CHEESE ADULTERATION.

Mr. J. Carter Bell, county analyst, reported that out of 221 samples analysed by him during the past quarter thirty-one were cheeses. He, however, could not return one of those samples as adulterated. Some of the samples were of an exceedingly poor make, in some cases almost deprived of their fat.—The report was adopted.

HOW SPICES ARE ADULTERATED.

Some firms go so far as to advertise adulterated goods, and evade the law by calling them compounds. Ground ginger is adulterated with meal, rice, flour, starch, cayenne pepper, and manilla rope. The true ginger root has a very fine hair-like fibre running through it, and this is found in the ground article. Many people will not buy ginger unless they see the fibre and bits of ground rope are made to take their place in the adulterated article. The cayenne pepper gives the necessary pungency. Sometimes chrome yellow, a poisonous article, is used for colouring. Cloves are adulterated by an admixture of the dried and ground twigs of the trees from which the cloves are gathered; also with ground cocoanut shells and pepper dust. All spice is also treated in the same way. Considerable cleverness is shown in the adulteration of cinnamon and nutmeg. Stale and broken biscuits, or damaged and common flour, are baked in the oven, and afterwards ground up to a fine powder, and this is freely mixed with the ground cinnamon and nutmeg. In adulterating mace, Venetian red is mixed up with this baked dust. Cayenne pepper is adulterated with meal, farina, cocoanut shells, Venetian red, and salt, the whole being then ground up together. The salt gives a brighter colour than Venetian red, which

is itself poisonous. In some cases the essential oils are even extracted from the pure spices prior to the grinding.

THE PURIFICATION OF WATER.

INTERESTING DEMONSTRATION.

THE purification of our rivers and other water-courses is now so firmly insisted upon by the various conservancy boards that the demonstration held on Wednesday by Messrs. Mather and Platt, Limited, of Salford, cannot fail to be of interest to many of our readers. At the invitation of the above-named firm a goodly number of gentlemen representing leading newspapers and technical journals assembled at the Salford Ironworks, and under the genial leadership of Mr. Colin Mather proceeded by omnibus to the dyeing and bleaching works of Mr. Joseph Jackson, at Smedley, near Manchester. Here the first demonstration was held, the object of which was to prove the effectiveness of the Archbutt-Deely process of purifying trade effluents, Messrs. Mather and Platt being the sole licensees and manufacturers of the plant. A tank containing effluent from the dyeworks to the volume of about 60,000 gallons was operated upon. Lack of space prevents a description of the process in detail. After the effluent had been chemically treated with lime, previously slaked, and copperas, in such a way as to ensure equal and thorough distribution of the chemicals, a very ingenious method of accelerating the precipitation is effected. This consists in stirring up and mixing with the effluent the sludge at the bottom of the tank left there by previous operations. This is done by sending a current of steam through pipes lying at the bottom of the tank and perforated on the under side, the steam and air rises in bubbles, and stirs up the mud, giving to the contents of the tank the appearance of a seething mass of thick and dirty liquid. There seems to be something of the homœopathic principle, "that like cures like," in this process for it is by the aid of this mud, which attracts the new chemically-formed precipitate, that the speedy settling of the effluent is brought about within ten minutes of the steam being turned off. The surface water was as clear as whisky and water, with very little whisky in it. A sample taken a little later after Mr. Mather's party had left for luncheon was sent down for inspection, and found to be perfectly clear. The representatives of the press were entertained by Mr. Mather at the Victoria Hotel to luncheon, and afterwards proceeded by train to the works of Messrs. Davies and Eckersley, at Adlington. Here the process of softening hard water for boiler and other purposes was shown at the rate of 8,000 gallons per hour, and at a cost testified to by the firm of less than ½d. per 1,000 gallons. The water is reduced from 17 degrees to 3 degrees of hardness. After a very pleasant day the party returned to Manchester.

NORWICH.—PUBLIC ANALYST APPOINTED.

Sir Peter Eade, at the last meeting of the Town Council, moved the appointment of Mr. William Lincoln Sutton, of Norwich, Associate of the Institute of Chemistry of Great Britain, as analyst of water and all articles of food and drugs sold within the city, the vacancy having been occasioned by the death of Mr. W. G. Crook. Mr. Sutton's qualifications were very high, and he was taking over the duties on the same terms as those of his predecessor.

Mr. Labell seconded the motion, and it was agreed to.

It was further agreed that the fee paid to Mr. Sutton for every analysis made by him at the request of a committee or authorised officer of the Council should be 10s. 6d.

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Food and Sanitation.

SATURDAY, NOVEMBER 30TH, 1895.

POINTS.—III.

A PUBLIC ANALYST ON BEER.

We commend the following remarks on beer to those who placed any credence in Sir William Harcourt's official statement that there was no adulteration of beer. The remarks are to be found in a report to the Vestry of St. George's, Hanover-square, September 1895, by Mr. C. E. Cassal, public analyst. During the quarter, ten samples of beer were analysed, respecting which Mr. Cassal says: "These samples were all reported as having the composition of beers which must be regarded as unadulterated, and therefore as 'genuine.' At present, 'beer' can only be looked upon as a fermented saccharine liquid, of sufficient alcoholic strength, free from substances which could be positively certified as actually poisonous or injurious to health, and not containing an 'excess' of saline constituents. The beers under examination came within this definition, which is so far satisfactory, but their wholesomeness as beverages, and

their possession of a good standard of *quality*, cannot therefore be asserted. The quantities of common salt in the samples varied from 14 to 66 grains per gallon. A very wide margin must, at present, be allowed in this respect, in consequence of the large quantity of salt present in certain waters used for brewing, and in brewing materials."

An article of food, such as beer, may be of inferior quality, or it may even be unwholesome, without necessarily having been adulterated, and it may come within the only possible definition that can be applied to it under the existing law: careless manufacture, the use of damaged or inferior materials, non-maturity, commencing decomposition, and so forth, may render a food-product unwholesome or inferior; and while, as a consequence of such cases, adulteration may be constituted by the presence of certain specific substances, or the existence of impurity beyond a certain limit, it is important that careful distinctions should be drawn between *Inferiority*, *Unwholesome Inferiority* and *Adulteration*.

The loose state of the law upon these points allows an extensive sale and consumption of very inferior, and probably unwholesome, products, among which beer may be assigned a prominent place.

The adulteration of beer receives a certain amount of public attention from time to time, owing to the prosecutions instituted by the Revenue Authorities at Somerset House against publicans. These prosecutions are undertaken under a special Act, which is not intended, like the Sale of Food and Drugs Acts, to protect the public from adulteration, and which, for the latter purpose, is practically of no value. In this connection a striking comparison may be made as to the magnitudes of the fines inflicted for very slightly diluting and sugaring such a beverage as beer, and those commonly inflicted for the far more serious offences dealt with under the "Sale of Food and Drugs Acts."

It will thus be seen that the law permits a brewer a latitude it allows to no other manufacturer of articles of food. We may be wrong in assuming that this is because the House of Commons has always contained so many persons who profit by the fraud, but it would be hard for anyone to furnish any other explanation. Still, it is only the French and the American legislatures that are corrupt. Ours has ever been a pattern of honesty and unswerving devotion to principles. Some are in favour of legislation to compel the brewers to brew beer only from malt and hops, by not allowing an article brewed from other substitutes to be called beer, and some are not.

Dr. Schack-Sommer entertains

AN AFFECTION À LA PLATO FOR THE BASHFUL YOUNG POTATO.

But Dr. Gustav Schack-Sommer may have a reason for his affection in the fact that the acreage in Germany was in 1893, 7,501,061, whilst the United Kingdom only had 1,255,556 acres given over to the cultivation of the curse of Ireland. Said this gentleman at a recent meeting of the Liverpool section of the Society of Chemical Industry:—"In England raw materials used in starch factories were rice and Indian corn; for whilst potatoes gave 20lbs. of starch, wheat gave 60lbs., maize 66lbs., and rice 86lbs. for every 100lbs. weight. However, potatoes grown within a reasonable radius of the factory would compete favourably with rice and maize. On the continent these agricultural manufactures were encouraged.

The making of starch from potatoes was one of the simplest methods of manufacture conceivable, whilst the fibrous matter of the potato detached in the process (about 8 per cent.) was used for cattle feeding, and, mixed with a suitable proportion of oilcake to make up the albuminous matter, was a most nutritive food. The water from starch manufacture was run on to pastures as liquid manure, conveying phosphoric acid and nitrogen. Starch sugar, produced from starch by the action of malt extract or diluted acid, had become an important article of commerce largely used by confectioners, brewers, jam boilers, and others. As a preservative it was useful and cheap, and prevented crystallisation in sugar. In brewing it was largely used to replace malt. Its substitution was legal in this country, 28lbs. of it being equivalent to a bushel of malt. In Germany it was produced chiefly from potatoes. The glucose of commerce was a mixture of starch, sugar, and dextrine, the inventor of the present well-known high pressure process of making it being Mr. Manbré. There was a large field open for English capital and enterprise in this direction, for the imports of glucose in 1894 amounted to 1,062,074 cwts., of the value of £542,195 sterling.

AGRICULTURE AND DISTILLATION.

Turning to the manufacture of potato spirit, Dr. Schack-Sommer remarked upon the persistent resistance of the Excise authorities of this country to the introduction of new methods and improvements, because *Excise officers being in most cases without the knowledge necessary to understand the process, it was feared the brewer or distiller would hoodwink them.* One consequence of this was that brewers or distillers did not see the need of employing well-trained, scientific men to manage their undertakings, and rule-of-thumb management reigned supreme. In the whole of the distilleries of England and Wales not more than four scientifically-trained chemists could be found. On the continent, all large establishments employed two or three each. In England, the smallest size of still allowed was 400 gallons. The object of this was to restrict the manufacture to few hands, in order to make the revenue from spirits more secure and the expense of collecting and supervising it less. Moreover, the law at present practically prohibited farm distilleries, which were unknown. *They had it on the evidence given before the Royal Commission that the potato spirit imported into England was the purest that could be produced.* The popular prejudice against it was without scientific foundation, since for all practical purposes it was fully equal to that made from cereals. In 1894 the quantity of plain foreign spirit imported was 1,176,118 proof gallons. They might safely assume that most of this was distilled from potatoes. It was plain that the establishment of farm distilleries in this country would be an important boon to the agricultural interest. All the industries he had noted would help farmers to make both ends meet, give increased and more steady employment in the rural districts, and enable good use to be made of much land now lying idle."

There are two paragraphs which we have italicised in the above that are enough to bring tears to the eyes of a stone dog. Our readers know that the excise chemists have no knowledge, for we have proved it over and over again, but Dr. Schack-Sommer evidently did not know that it was these persons whom he accuses of having no knowledge, who gave the evidence before the Royal Commission that the imported potato spirit was the purest that could be produced. The popular prejudice against potato spirit, Dr. Schack Sommer says, is

WITHOUT SCIENTIFIC FOUNDATION.

There is a big, round-hand statement from the chemist's test tube point of view, and the chemist's test tube, to which all alcohols are alike, from whatever swipes or rubbish produced, is a far superior instrument to that inefficient and ignorant test tube the human stomach, so Dr. Schack-Sommer thinks. If any curious person wants

to test the value of Dr. Schack-Sommer's assertion he can do it by trying anywhere about a bottle of the potato spirit, plus flavouring and colouring matter called Scotch whisky, and noting his sufferings as compared with those experienced by drinking the same quantity of old John Jameson's. If he be unused to large quantities of ardent spirits Jameson's may cause him to feel some slight biliousness, but the potato spirit will make him feel about to die, and his only regret will be that he is so long about it. But there are others besides Dr. Schack-Sommer who are

AFFLICTED WITH MORE TEST-TUBES THAN EXPERIENCE.

William Bailey Bryant apparently has plenty of experience. In his recent book Mr. Bryant gives the spirit swindle away, telling us how to conceal the odour and taste of fusel oil by the use of aromatics; and he cautions us against the use of adulterated (?) ethers in adulterating the liquors which we desire to make. Irish and Scotch whisky can be made from common whisky—viz., Dr. Schack-Sommer's potato spirit—by the addition of grains of paradise, pellitory, creasote, catechu, etc., and they "should always be put up in the same packages that the genuine was imported in." The book is full of comments of the same ingenuous character, and we are told how to make old barrels look like new and *vice-versâ*, and how to brand and paint them to convey a certain impression. Red wine can be made of water, sulphuric acid, honey, alum, red beets, log-wood, oil wintergreen, and grains of paradise. As honey is the only article in the formula of value, we are informed that any bright sugar or syrup will answer in its place. We are also told that "a very fine champagne is prepared from fermented turnips and radishes, but nothing superior to some other formulas." In the matter of syrups we are told that, "like every other commodity in commerce, they should be manufactured to suit the views of all grades of purchasers." "Sufficient details," says our contemporary, the *Pharmaceutical Era*, to whom we are indebted for the above item, "are given to meet the requirements of all grades of depravity, but the author evidently forgot to caution his readers to carry on the practices which he suggests in a cellar with the aid of a dark lantern, but perhaps such precautionary measures will suggest themselves to those who have a leaning toward the preparation of fraudulent liquors.

What with Mr. Bryant and a few other scientific gentlemen, it seems to us that whisky drinkers are menaced with evils that will render them as extinct as the Dodo, or the Somerset House chemists' ability to analyse anything but their salaries.

BUT CARBOLIC ACID IS ALL RIGHT.

The *British Medical Journal* is looking after carbolic acid, so that criminals' days are numbered. Mr. Hart's paper says:—

"So far as carbolic acid is concerned the daily occurrence of deaths caused by it either accidentally or in cases of suicide affords strong evidence of need for protective regulation of its sale. It seems unaccountable that a poison, which occupies such a conspicuous position in the returns of the Registrar-General, should have been allowed so long to be supplied indiscriminately in all kinds of shops to children as well as adults, and without any provision against accident. The fact that carbolic acid is useful as a disinfectant for sanitary purposes cannot be urged as a justification of this laxity, since there are various forms in which it would be equally serviceable for such purposes, and at the same time unlikely to be swallowed in the way that so frequently happens with carbolic acid in its natural condition."

When Mr. Hart and the Pharmaceutical Council between them have that hardened offender, carbolic, into the Poison Schedule of the Pharmacy Act, they may have a little leisure in which to make the British Pharmacopœia respectable and intelligible, or they might

lead a crusade to have the beers and whiskies we have mentioned put on the Poison Schedule of the Pharmacy Act; they poison more persons than carbolic does.

"THE CATERER" AGREES WITH MR. SNAGSBY THAT THE LAW'S A HASS.

It says:—"Something really ought to be done to relieve the injustice towards caterers involved in the present working of the Food and Drugs Act. A leading firm of popular caterers were the other day subjected to a small but irritating fine at the Clerkenwell Police-court, for selling milk which was alleged to have lost 17 per cent. of its cream, 'without disclosing the fact to the purchaser.' Everybody knows the extreme difficulty of obtaining large supplies of milk always up to the standard, to say nothing of the possibility of error on the part of the official analysts. It was shown in this case, however, that notice boards were exhibited intimating that the firm could not guarantee the milk as new, pure, or with all its cream. And, further, to prevent the possibility of mistake the firm actually have this notice stamped on every glass in which milk is sold. If that is not sufficient protection for the customer we should like to know what is. Even if every restaurant had its own dairy attached, the proprietors could not guarantee their cows to always keep up the same standard of milk, whilst to suppose that any respectable firm would willingly sell an inferior quality for the infinitesimal profit which might accrue, is to argue utter ignorance of the catering business. It is, we consider, a serious hardship that such a notice should be required in cases where every effort is made to serve a first-quality article; but if, after all, the notice is not a protection from legal penalty, we are afraid we must in this respect adopt the opinion of Mr. Snagsby, that 'the law's a hass.'"

It wasn't Mr. Snagsby who was responsible for this opinion, but Mr. Bumble, and the correct quotation is, "the law is a ass," but that doesn't matter, it is as near accuracy as might reasonably be expected from a writer who knows as much about milk as the above paragraph reveals.

WHAT IS THE AVERAGE MILK OF A HERD OF COWS?

154,815 analyses made for the Aylesbury Dairy Co., from 1881 to 1894, showed an average of 4 per cent. of fat, *vide* Food Products Adulteration Committee's Report, pages 213-214, and even if a herd of cows of the "Lloyd's 8 per cent. of water" type which the Aylesbury Dairy Co. evidently do not contrive to discover, tried to account for a deficiency of 17 per cent. of cream they couldn't do it. The public analysts scarcely dare to condemn any sample that does not fall below the Somerset House limit of 2.75 per cent. fat. If a milk be minus 17 per cent. of this wretched amount, no herd of cows fit to be milked could produce it, seeing that the average percentage found in the milk of herds is about 4 per cent. The law has been ass enough to make fraud in spirit dilution legal by the notice game, but as milk is an important article of food it is to be hoped it will confine its asininity to that glorious piece of legal rascality.

LONDON WATER IS AGAIN IMMACULATE.

Professor W. H. Corfield may be strunk by the fact that an increase of 150 per cent. in enteric fever follows upon the delivery of insufficiently filtered Thames water when the river is in flood, which was especially noticeable last year, the samples taken in November being very bad indeed." Analysts' reports may corroborate these disclosures of the turpitude of the water we drink, but there are always, happily for the companies and the public mind, some altruistic Fellows of the Royal Society who are able to show as Dr. Pangloss would, that it is the best of all possible water.

Professors W. Crookes, F.R.S., and J. Dewar, F.R.S., reporting to the water examiner for the metropolis, on the composition and quality of daily samples of the water supplied to London last month, state that the whole of the samples (189) analysed by them were found

to be "clear, bright, and well filtered." They add:—"Compared with the corresponding month of last year, the quality of the Thames-derived waters shows a marked improvement in every respect. Our bacteriological examinations give the following results:—Thames water, unfiltered, 2,603 colonies per cubic centimetre; Thames water, from the clear-water wells of the five Thames-derived supplies, highest, 108 colonies per cubic centimetre; ditto, ditto, lowest, 30; ditto, ditto, mean, 68; New River water, unfiltered, 1,577 colonies per cubic centimetre; New River water from the company's clear-water well, 41; River Lea water, unfiltered, 3,018 colonies per cubic centimetre; River Lea water from the East London Company's clear-water well, 48. These results show that the water companies are able successfully to cope with the extra strain put upon them, their filtering appliances being in excellent condition."

It is really kind of these two distinguished F.R.S.'s to assure us that "the water companies are able successfully to cope with the extra strain put upon them," and it was, to say the least, very impertinent of the enteric fever patients that some of them did not make an effort to "cope with the extra strain put upon them," but foolishly succumbed to it.

A PUBLICAN, BUT A STAUNCH FRIEND OF TEETOTALISM.

Mr. A. Kindred, of the George Hotel, Shipton-on-Stour, wants a problem solved. In a letter to the *Evesham Standard* Mr. Kindred says:—

"Sir,—Will you be good enough to give me space in your next issue to ask your readers to solve a problem which has occurred to my mind with reference to a case in which I was summoned before the Shipston Magistrates on Saturday. Your reporter will undoubtedly send you full particulars, therefore I need only say that I was fined 40s. and costs for adulterating my whisky over and above the limit, to the extent of 1 per cent., the chairman remarking that the public must be protected. Now, if one gallon of whisky is diluted with 1 per cent. of water and there are one hundred four pennyworths of whisky to the gallon, how much would a customer who purchased four pennyworth of whisky be defrauded? Surely it would be infinitesimal, and to my mind the law respecting the dilution of spirituous liquors is a perfect paradox. *On the one hand, if we sell our spirits too strong, and our customers take too much and they happen to get into the hands of the police, they are summoned and fined, and on the other hand if we sell our spirits too weak we run the risk also of a summons and a fine, and in my case two pounds and fourteen shillings costs. Surely if we sell our spirits diluted to the extent of 1 per cent., our customers, in all common sense and reason, should look upon the dilution as a blessing in disguise rather than as a fraudulent transaction.*"

Now Mr. Kindred is at once philosophical, philanthropical and logical, and he has our heartfelt sympathy, for to be sure if one per cent. water at spirit price be a blessing in disguise, two per cent. would be two blessings, and 75 per cent. might bless all Shipton-on-Stour. There is only one little drawback to this generous showering of blessings. The inhabitants might prefer to secure them free, gratis, at the town pump, and Inspector Critchley might invite him to be "presented at court" again. It is a mean world, Mr. Kindred, and it doesn't encourage original thinkers.

"SEEKING MAXIMUMS."

This has nothing to do with the flying machine or guns, but is the Liverpool Stipendiary's way, heaven only knows why, of excusing himself for inflicting penalties which are far in excess of what he usually inflicts, and still far too lenient for any person who has been previously fined. On November 20, Peter Dixon, Kirkdale-road, was summoned for selling adulterated butter. Inspector Baker said he bought 1lb. of butter which he was informed was pure Irish. When it was analysed it was found to contain more than 70 per cent.

of fats other than butter. The defendant was also summoned for selling milk which contained 25 parts of water. A fine of £5 and costs was inflicted in each case. Robert Bentley, shopkeeper, of Marsh-lane, was fined 40s. and costs for exposing margarine which was not labelled as such. Frederick Williams, milk-dealer, Holt-road, was fined £10 and costs for selling milk—to every 100 parts, which were poor, 18 parts of water had been added. Mr. Stewart pointed out that the Act of Parliament empowered him to inflict a penalty of £20. The defendant had been previously fined, and it seemed as though he was anxious to reach the maximum amount.

A VERY COMMON MISTAKE SOLICITORS MAKE.

We know that no solicitor in any case ever said anything that he did not absolutely believe, so we must assume that in the following instance Mr. Lodge thought Somerset House had such a power.

Herbert Dyer, milk dealer, of Streethouse, was summoned at the Wakefield West Riding Court, on Nov. 15, for selling milk adulterated to the extent of 12 per cent. with added water.—Mr. Brutton, solicitor, prosecuted on behalf of the West Riding County Council.—Inspector McDonald said that on the morning of October 23 he was taking samples of milk at Normanton, when he met the defendant in St. John's-terrace and purchased a pint of new milk from him. The certificate of the analyst was to the effect that there were twelve parts of added water.—In answer to Mr. Lodge, witness said he had heard that the defendant bought his milk from a farmer named Barker, residing in the district.—Mr. Lodge submitted there was no added water in the milk, and argued that 9 per cent. variation in the quality of the milk was allowed by the Somerset House authorities. The milk was taken direct from Barker's farm, at Streethouse, and sold on the way to Normanton. His client was a victim to the impoverished state of the milk, due to the low condition of the cows.—Henry Barker said the milk was not interfered with at the farm, and Jane Barker and Herbert Hall (farm lad), gave similar evidence.—The defendant, who had been in the trade seven years, said that on the morning in question he went for the milk to the farm and took it straight away for distribution to his customers without adding any water whatever. In that statement Dyer was corroborated by his son.—The Bench inflicted a fine of £5, including costs.

Somerset House has really enough sins of incompetence and obstructiveness to answer for without this of sanctioning 9 per cent. of water in milk. A careful study of the department inclines us to believe they would like to do it, but, fortunately for the public, they have not got the power.

IRON IN FOOD AND BRASS IN CHEEKS.

A few weeks ago, we published Dr. Burge's investigations into the quantities of iron contained in foods. Dr. Stockman, of the Royal Infirmary, Edinburgh, has followed up these investigations by making analysis of the food of some ten persons. It appears that the quantity of iron in the daily dietary of healthy persons with good appetite, averages from 8 to 11 milligrammes. Four or five pints of sweet milk daily suffice, says Dr. Stockman, to maintain an adult in health, and this amount would contain from 6 to 10 milligrammes of iron. To supply the physiological needs of the body and to keep the individual in good health, it is needful that from 6 to 10 milligrammes of iron be present in the dietary, and Dr. Stockman's analysis show that the amount and quality of food taken by some do not come up to this standard.

This is another argument for the extended use of Oppenheimer's bi-palatinoids, which may or may not advantage that useful preparation of ferrous carbonate with ext. casc. sagr. and nux vomica, and it suggests the probability that Dr. Stockman, who seems to like out-of-the-way investigations, could do a work that would entitle him to the everlasting gratitude of all interested in public health. If a memorial were presented,

signed by all who are curious over the question, asking Dr. Stockman to investigate the amount of brass in the cheeks of the great professor of the "Smitheries," laborious as the investigation might prove, Dr. Stockman would possibly undertake it. But a difficulty presents itself at the outset. The memorial would be so many miles in length, and the signatures so like in number to the quantities of sand wept over by the walrus and the carpenter, that Dr. Stockman would grow hoary ere he got through it, and have no time for the illimitable investigation itself.

WHY NOT SELL MARGARINE PROPERLY?

This is a question many traders might with advantage consider thoroughly. It is a long time since we published a series of investigations into the relative merits of margarine and butter, and the result was that, the best of everything being quite good enough for us, we use margarine. The truth is, the objections to it are the outcome of ignorance and prejudice. If Ireland, for example, had the sense to treat its professional politicians to a brick and a pail as practical people do with obnoxious curs, and to cry "Erin go bread and cheese" instead of "Erin go bragh," margarine would furnish employment for thousands of its people and bring prosperity to its dairy farmers. This seems preposterous—but is it? Holland is a hive of industry, and, despite nature's niggardliness, has an enormous trade, is not menaced by death by starvation should a potato crop fail, and is not everlastingly sending the hat round and making its sons and daughters "fork out" and blush for their country. Margarine finds employment for its thousands, and out of it Holland makes plenty of money. But the margarine industry ought not to be in Holland. The Dutch have to get their oleo from America mainly, and it could be landed at Queenstown far cheaper than at Rotterdam, as any fool but an Irish professional politician knows. Round about Queenstown are the finest pastures in the world, and the best milk for working up that margarine. Cork has a good service of boats running to the principal provision distributing centres, and with all these natural advantages Ireland allows an enormous and a profitable trade to pass over to Holland, and Dutchmen send their margarine to Cork, to Dublin, to Belfast, etc. Ireland could, with its superior milk, produce a far finer flavoured margarine than the Dutch can do, for their cows are poor, and a considerable quantity of milk is required in margarine production. But Ireland does nothing so sensible and practical. It prefers to pose as the Niobe of nations, and wonder why the whole world does not want Cork butter.

BUTTER-EATING IS A DYING SUPERSTITION.

We showed, a few weeks ago, that Danish butter was a fraud—that in reality it was margarine—and it is only a common-sense question we ask now: Is pure butter sold generally to the public? Every practical man knows it is not. Here and there a few pounds may be sold by accident, because the retailer does not know whether he sells it pure or not. He buys it as pure, of course, but if Thomas Bradford and Company, of High Holborn, were to disclose how many butter-blending machines they have sold to large butter dealers during the past few years, we know a few firms of the highest repute who would feel very uneasy. Twenty per cent. of margarine can be safely put into a good-class butter, and it is; and as margarine costs about half the price of butter, it explains how large stores can sell pure butter at less than the wholesale market quotations. There is a *bouquet* about pure butter that will always endear it to the *gourmet*, but the average man or woman pays butter price for margarine, and enjoys it. Why not, therefore, frankly give margarine its due, and recognise that it is no use trying to stop its sale? Why does not the shopkeeper fearlessly announce that he sells "Le Dansk," for example, and prove from our investigations that it is equal in quality, and better value by fourpence or fivepence per pound than the finest

Danish butter? Why is not this enormous margarine trade taken up in Ireland? The "mene, mene, tekel" has been written by the finger of fate, and, lament it as we may, butter-eating is a dying superstition. The *gourmet*, as we have said, will always prefer it, but, save for *bouquet*, margarine serves all its purposes. The day may come when prosecutions will take place against traders

SELLING BUTTER AS MARGARINE,

and why not? There are butters made and sold to the public which, if sold as margarine, would, from their inherent vileness, seriously damage the good repute of a wholesome article of food. We commend these observations to other dealers besides Mr.

RICHARD PERCIVAL WHO WAS PRESENTED AT COURT on November 22. Mr. Mead received him at Worship-street, for selling as butter an article known as margarine. Evidence was given of the purchase in the defendant's shop of "half a pound of 1s. butter," and that on analysis it was found to be 85 per cent. "margarine," only 15 per cent. being butter fats.—The defendant said he could only account for the article supplied as being "a mistake in serving."—Asked by the magistrate to explain this, the defendant said there was a supply of butter on the slab on the counter, and also a lump of margarine. He supposed that the two had had their positions changed. Mr. Mead invited the defendant to give evidence on oath, and he, consenting, was sworn. Then, in answer to Mr. Mead, the defendant said the margarine was labelled, but not so that the label could be seen by the public. It was, he added, labelled on the counter side "for their own satisfaction." Being asked to explain how he came to serve the margarine in lieu of butter when the margarine was labelled, the defendant could not explain.—The sanitary inspector, Quelch, said that whilst he was in the shop several children entered and asked for small quantities of "shilling butter," but the defendant, the matter being then found out, said he had no "shilling butter."—Mr. Mead thought defendant had committed a deliberate fraud, and ordered him to pay half the full penalty, viz., £10, and 2s. costs. This sort of thing might damage Mr. Percival amongst the residents of Hoxton-street, Hoxton, but if he takes our advice about margarine, and sticks the following in his window in large letters he will be giving margarine its due.

MARGARINE IS CLEANER AND HEALTHIER THAN BUTTER.

The *Medical Age* says:—"An examination of the two products, butter and oleomargarine, for microbes, reveals an average in the former of from 700,000 to 1,500,000 to the grain, against 25,000 to 40,000 in margarine. Cold, moreover, reduces the microbes in margarine 33 per cent., and in butter but three per cent. Pathogenic bacteria are harboured by true butter, but not by its margarine imitation."

THE FRENCH BRANDY IMPOSTURE.

Is there any pure brandy? Dr. Laborde recently read a paper before the Académie de Médecine, of Paris, on the liquor supplied to the French Army under the name of "cognac." The best cognac is made of the cheapest and worst spirit, flavoured with oil cognac ("Bouquet de Cognac"), which in turn is derived from castor oil, coconut oil, and other fatty substances treated with nitric acid. "Pure Jamaica rum," sold by an English house, proved, on analysis, to be of much the same quality.

But, of course, Dr. Gustav Schack-Sommer will say this is the purest of all pure spirits. For our part, since we discovered some years ago the extra prices marine-store dealers pay for a noted firm's empty brandy bottles, *provided the labels are clean*, we have left brandy to itself, and there are only about three or four whiskies we care to brave the perils of. The medical profession also have long recognised the fact that there is no brandy in the market fit for medicinal use. But that fearful wild-fowl,

the *connoisseur*, will go on with his after-dinner nip confident he is sipping a pure and unadulterated article. We have often observed these *connoisseurs*, and wondered if they possess as much

BRAINS AS THE SENSITIVE PLANT.

It seems curious to speak of a sensitive plant having brains, but the *Eclectic Magazine* stoutly maintains that it has. Our contemporary says:—

"This, which is such a delicate house ornament with us, fairly enamels the earth in Ceylon, growing wild from Adam's Peak to Point de Galle, multiplying its dainty, bell-like pink blossoms, mingled with the delicate, feathery acacia. Growing so exposed and in weed-like abundance, it is natural to suppose that it would become hardened, as it were, to rough usage; but this is not so, as it retains all its native properties, in exaggerated form if possible. Our puny little hot-house specimens are not more delicate or sensitive to the human touch than is this Ceylon mimosa. It is the most impressive of all known plants, and is appropriately named. Curious experiments prove this. If a person will fix his eyes upon a special branch and slowly approach it the plant is seen gradually to wilt and shrink within itself, as it were, before it is touched by the observer's hand. It is endowed with an inexplicable intelligence, or instinct, and what appears to be a dread as regards rude contact with human beings. A few years since the writer was the guest of an English physician who was also a coffee-planter. While sitting with the family on the broad piazza which formed the front of the bungalow, a thrifty, sensitive plant was recognised and made the subject of remark. The doctor called his daughter of eleven years from the house. 'Lena,' said he, 'go and kiss the mimosa.' The child did so, laughing gleefully, and came away. The plant gave no token of shrinking from contact with the pretty child! 'Now,' said our host, 'will you touch the plant?' Rising to do so, I approached it with one hand extended, and before it had come fairly in contact the nearest spray and leaves wilted visibly. 'The plant knows the child,' said the doctor, 'but you are a stranger.' It was a puzzling experience, which seemed to endow the mimosa with intelligence."

The trader in search of a novelty for his shop-window ought to ask his Ceylon tea-provider to send a few of the wonderful plants to this country. The fame of such a plant would draw the public in shoals. We do not understand why Lipton, who apparently neglects nothing, has neglected this chance of a glorious and cheap advertisement.

THE NOTICE DODGE AGAIN.

Surely it is time that utterly indefensible imposition on the public, the notice dodge, was made illegal. The person who asks for rum, whisky, gin, or brandy is pretty certain to get a faked article, which in itself is bad enough, without the added infliction of having to pay spirit rates for water. The worst enemies of the drink traffic are those who advise publicans to practice the notice dodge. It is not a question of whether the law allows it or not, it is one of conscience, and the drink trade has ample profits without it. But every day brings its case like the following. At Lambeth, on November 21, Joseph Reading, of the Lord Clyde public-house, Auckland-street, Vauxhall, was summoned by Mr. H. T. Wiggs, on behalf of the Lambeth Vestry, for selling rum diluted with water to the extent of 8·7 degrees below the legal limit of 25 degrees under proof.—Mr. H. J. Sydney defended. The defence was that a notice, intimating that the spirits sold at the establishment were diluted, was exhibited in a conspicuous part of the bar.—Mr. Wiggs, however, declared that he did not see the notice from the portion of the bar at which he stood when he made the purchase.—Several witnesses were called for the defence as to the position of the notice.—Mr. Hopkins remarked that the question in this case was whether the notice was exhibited in such a way as to be a pronounce-

ment to everybody using all the bars that the spirits sold in the house were diluted. He came to the conclusion that it was not so exhibited, and, that being so, a penalty must be inflicted. The defendant would have to pay a fine of £5 and costs.

THE "LANCET" ON DRUG ADULTERATION.

Our contemporary the *Lancet*, whose admirable public work years ago in exposing frauds in food stuffs justly entitled it to the nation's gratitude, supports our plea for a stricter supervision over drugs. In its last issue, the following appears:—

"ADULTERATION OF DRUGS.

"Three druggists have been charged at the instance of the Islington Vestry, before Mr. Bros, of the North London Police-court, with selling unguentum hydrargyri not containing the full amount of mercury. The deficiency was in one case 66·2 per cent., in another 11·3 per cent., and in the third 13·3 per cent. In the first case, where the deficiency was so great, the druggist defended himself curiously. He said druggists were to use their discretion—that was the reason they pass examinations. Unguentum hydrargyri, according to him, is only used as a basis for other articles. Druggists, as a rule, sell the weak ointment, which in the older pharmacopœias was called unguentum hydrargyri mitius. In the third case, the ointment supplied was a mixture composed partly of some on hand and partly of some got from a neighbour. This neighbour was in turn asked for the same ointment, and had to apply to a third neighbour, who, it was said, had procured it from a wholesale druggist. Mr. Harris, the medical officer of health, would not acknowledge that the ointment was but rarely supplied by druggists. He said surgeons frequently employed unguentum hydrargyri for adults where mercury could not be given internally. One of the defendants had learnt from Mr. Martindale that in 25,000 prescriptions it had been mentioned only 13 times in the United Kingdom and 30 times in the colonies. In the first and the third cases Mr. Bros considered the druggists had given an ointment with less than the proper amount of mercury, and required them to pay the costs, 12s. The second druggist, or rather his assistant, had sent out for the preparation, and that was all he could do. The ointment was not of full strength, but it was no fault of his. Perhaps the magistrate was right in letting the druggists off easily. The latter do not seem to have acted dishonestly. The theory of discretion is not applicable here. The druggist should have supplied what was prescribed. There is but one unguentum hydrargyri in the Pharmacopœia, and a medical man's prescription covered the druggist's responsibility. In the other two instances the ointment was not of the full strength, and it is unsatisfactory that the real culprit has not been ascertained. Possibly the wholesale druggist was to blame. On the face of it he was so. But nothing is proved. It would be well for the sanitary authorities to give a little attention to their preparations as well as to those of retail druggists."

For a long time our contemporary has had little to say about adulteration, but when it does speak out it is on the side of the public and common sense. Unhappily, however, sanitary authorities can do little in the matter, although, many of them, as we know, would like to give it their attention. That charming illustration of haziness, the British Pharmacopœia, makes prosecutions impossible save for some four or five preparations, and throws its sinister protection over a form of fraud that is surely the most villainous that could be devised, for it despises suffering and paralyses the skill of the ablest disciple of the Mighty Healer of the Universe. It is hard to realise that after 1,895 years of Christianity there should exist persons who in cool calculation rob the sick man of the value of that medicine that may keep him out of the grave. It is a fearful thing to even imagine; how much more so must it be to do such a crime? But

in this Christian land it is done every day, and the law is powerless to prevent it.

DANISH BUTTER BUNKUM.

The Danish authorities have issued their annual report about the purity of Danish butter, and it is worth a little consideration, because a few weeks ago, a correspondent of the *Sunday Chronicle* said "the laws of Denmark prohibit the exportation or the importing of Margarine," and abused us roundly for exposing the Danish butter swindle. In the official report issued by the Danish Government, they deal with the year from April 1, 1894, to March 31, 1895. The report states that there were at the latter date seventeen margarine factories in Denmark, one in Copenhagen, eight on the various islands, and eight in Jutland. The aggregate production of margarine amounted to 15,504,938lbs. (Danish), against 16,779,374lbs. in the previous year. The bulk of the oleo-margarine used for the manufacture was imported from abroad. No change of any importance has taken place in the mode of manufacture; the percentage of butter has been stated to vary from nil to 20 per cent. *The aggregate imports into Denmark of margarine during the year ended March 31 last amounted to 2,313,316lbs. against 2,261,239lbs. the previous year; from Germany were imported 1,306,818lbs.* The percentage of butter in the imported margarine was stated to range between $\frac{1}{4}$ and 6 per cent. *The exports of margarine from Denmark were only 49,710lbs. in the year ending March last.* The number of persons dealing in margarine—wholesale and retail—in Denmark is about 8,500. All the premises of the dealers in the towns are inspected at least once during the year; outside the towns numerous inspections have taken place. The annual production of oleo-margarine in Denmark amounts to 700,000lbs. No manufacture of margarine cheese has taken place, nor has any been imported, with the exception of a small sample order. *Out of the numerous analyses of butter, only one sample has been found to be adulterated with margarine, and this was done by an old peasant under extenuating circumstances, so no criminal action was taken, a fine being inflicted.*" There is enough truth in the document to prove our statements, and enough lies in it to qualify its author for the post of a Cabinet Minister under any administration. Perhaps the *Sunday Chronicle's* correspondent can tell us what becomes of this 2,313,316 pounds of margarine imported into Denmark? They swear it doesn't go into the butter, so it must be wandering about seeking some Dane to devour, and eventually get lost. But what an example of public spirit and honesty these figures reveal! The thrifty Danes sacrifice two and a-quarter million pounds of imported margarine yearly, and allow it to stray away and lose itself—in Danish butter. It is only charitable to suppose that fifteen and a-half million pounds produced in Denmark were likewise allowed to get lost—in Danish butter. But the touch of the artist comes in the official statement that "*only one sample was found to be adulterated with margarine, and this was done by an old peasant under extenuating circumstances.*" Fancy that old peasant having the strength to use up all these million pounds of margarine, and what would happen to him if Mr. Harvey, of Newcastle, who bought 36 casks of the Danish butter, and was swindled by the same containing 75 per cent. of margarine, were to meet him." We fear Mr. Harvey would not recognise those "extenuating circumstances," and that the old peasant would suffer.

MR. J. C. LOVELL UTTERS SOME PLAIN TRUTHS.

There is no man living who could do more for English and Irish butter, if its producers would do anything for themselves, than could Mr. John C. Lovell. He is a clear-headed, clever man, who would rather sell his own country's produce than foreign stuffs, and to the Royal Commission on Agriculture he has just explained the amount of encouragement he gets to deal in English butter. Contrast the sound common-sense of it with the blatherumskite of the late Minister of Agriculture and

of the present one. His firm, he said, did business in Irish butter, but not in any other British produce; they exported butter in tins to South America, China, Japan, and other places. In his opinion English butter had lost its hold on the market because it was badly packed, lacked uniformity both in quality and colour, and was produced in small lots, and in the winter months its production almost ceased. Foreign butter, on the other hand, was better packed, was absolutely uniform in colour and quality, and shipments were regular throughout the year. Before 1870 no fresh butter was imported from Normandy. When Paris was besieged a quantity came to England; its good quality was at once recognised, and ever since the regularity and excellence of the supply had knocked out the English fresh butter. In Normandy the dealers attended all the markets and bought the butter brought there by the farmers. It was paid for on the spot according to its grade. It was then inspected at the factory and separated into four qualities, samples of the same grade being mixed. Dairying abroad was scientifically studied, and the methods adopted on the Continent were newer and better than those in vogue in this country. In his experience it had always been quite impossible to obtain large supplies of English butter of a uniform colour and quality, while from abroad the article could be secured in almost unlimited quantities. He was doubtful whether English butter would ever regain the premier position, for it paid dairy farmers better to sell the milk where they were able to do so, and the demand for milk had increased during recent years. By the factory system adopted in Normandy it was possible to obtain butters of uniformly good qualities, and it encouraged the farmers to improve their processes of manufacture, as those who produced the best article secured the highest prices. He objected to creameries, because they adopted the method of mixing the milk or cream from various farms irrespective of its quality, and, while much was perfectly good, occasionally some was undoubtedly inferior, with the result that the whole bulk was injured; hence the irregularity in quality which was so frequently observed in creamery butter. He admitted that dairy schools had done much to improve the make of butter, and he felt that the introduction of the factory system would tend to further develop the industry in this country. Much help would be rendered to the dairy industry by the introduction of more stringent measures against adulteration and the mixing and sale of margarine as butter. He did not consider the present Acts sufficient, and they were improperly administered; furthermore, the mixing of margarine and butter should be entirely prohibited. He ascribed the decline in the price of cheese in recent years to the enormous imports of mutton from Australasia and the River Plate. With good mutton at from 2d. to 4d. per lb., working men would not largely purchase cheese at from 6d. to 8d. per lb. So long as the present supplies of cheap mutton were maintained, the price of cheese could not advance to any considerable extent. The extremely low prices in the spring and summer of 1895 were in the main caused by the prolonged frosts in the early part of the year, as in intensely cold weather cheese was not consumed to a great extent. As a matter of fact, sales fell off more than 50 per cent. at this period; consequently there was a great accumulation of stock. In July and August cheese was sold in London at 28s. to 32s. per cwt., for which the importers had paid 45s. to 52s. per cwt. He was of opinion that the production and sale of filled cheese, such as was largely manufactured in Scotland, and which was an adulterated article, should be absolutely prohibited, as the sale of such cheese seriously injured the trade in the genuine article."

Our Government can vote millions to relieve hungry speculators in the Uganda Railway swindle for the benefit of Stock Exchange thieves and filthy, stinking savages, but it cannot spare twopence for light railways, or the organisation of English industries as those of our foreign competitors are organised. But English industries are naturally unworthy the notice of the cultured *ignorami*

who pass from Harrow or Eton to Oxford or Cambridge, and thence to the House of Commons or the House of Lords, and the mere trader, like Mr. Lovell, who pays his £10,000 at a time for a week's foreign produce, and would rather it were paid for native butter or cheese, is possibly given to understand he ought to regard it as a great honour to be allowed to talk to such asses. But of such is the beautiful system that ordains:—

"That every British boy or girl
Who's born into this world alive,
Is either a little Liberal,
"Or else a little Conservative."

There are parties we could spare, and one that is pressingly needed—a traders' party.

"TOUS LES MOIS" AGAIN.

Upon this vexed question of "tous les mois" being arrowroot we have no opinion, but we incline to the belief that it is neither fraudulent nor to the prejudice of the purchaser that it should be sold as arrowroot, for some excellent authorities class it as arrowroot. Prosecutions for this article strike us more as hair splitting and quibbling than as suppressing adulteration, and we are not sorry that Thomas Buggs, of Milton-on-Sittingbourne, was not convicted last week. The analysis produced by Superintendent Capps stated that a purchased pound of arrowroot consists entirely of *tous les mois* starch, which is an article derived from a plant belonging to the same order as that which yields true arrowroot. There is no objection to its sale in its proper name, but it should not be sold as arrowroot. Defendant said he purchased the arrowroot from Messrs. Arkcoll, of Maidstone, as arrowroot, and it was labelled "warranted genuine." He produced two tins from which he said the constable was supplied. One was labelled "Indian arrowroot, warranted genuine," and the other, "Natal arrowroot, warranted genuine." He sold the article in good faith, believing it to be as labelled. Defendant asked that he might be allowed to read an extract from "Lloyd's Encyclopædia" on "Arrowroot," with which he had come provided, but his request was not complied with. The tins were handed up to the bench, and their labels were examined by the magistrates, who said it was very clear to the bench that there was a violation of the law. When arrowroot was asked for, an article was being sold which was not arrowroot, but as the public did not seem to have been injured, they had decided to dismiss the case with a caution. If a similar case came before them again, there would be a conviction. Defendant thanked the bench, and said he would procure a different kind of article in future.

MORE DANISH BUTTER SWINDLING.

The Danes are being found out with a vengeance. Their latest victim is William Wilson, a member of the firm of Messrs. Wilson Brothers, grocers and provision dealers, 103, Lynn-street, West Hartlepool, who was summoned on November 18 for selling adulterated butter. Mr. Higson Simpson prosecuted on behalf of the local health authorities. He called Bridget Casey, who stated that she was sent by the food and drugs inspector (Mr. T. Wheat) to defendant's shop, where she asked for half-a-pound of butter. She was served from a quantity on the counter, and paid 7½d. for the half-pound. Mr. Wheat said that he entered the shop as soon as the purchase was made, and informed Mr. Wilson that he required the butter for analysis. He subsequently sent a sample of it to Mr. Stock, the borough analyst, whose certificate he now produced, showing that the sample contained 56 per cent. of fat which was not butter fat. In reply to Mr. Simpson, the inspector added that when the purchase was made good butter was selling at 10d. per lb., at which price he purchased a sample which proved genuine. He also paid 1s. and 1s. 2d. per lb., the latter being the top price for prime butter. Mr. Wilson, in defence, pleaded that the butter was sold by him as genuine Danish butter, it having been supplied to him as such by the wholesale dealer. He had three casks

of the same butter, two of which turned out genuine, as was proved by the samples taken by the inspector and submitted to the analyst. He did not take a warranty with the butter, believing implicitly in the integrity of the wholesale merchant. He acted in perfect good faith in the matter, as he knew the inspector was on his rounds on the day in question, and could have withheld the butter had he had any suspicion as to its genuineness. In regard to the price, all he could say was that on the very day the inspector called he had paid at the rate of 1s. 2d. per lb. wholesale for best Danish butter, and in charging 1s. 3d. per lb. he did not think he was over the mark. The Bench said that as defendant had no warranty he must take the consequences. He would be fined £5 and 16s. costs, or a month in default. The money was paid.

Perhaps Mr. Wilson and Mr. Harvey will favour us with their opinions about the Danish authorities' report, and that charming story of the one adulterating Danish peasant with his extenuating circumstances.

TERRORISING THE ISLINGTON MEDICAL OFFICER.

Retribution, like a poised hawk, has swooped down upon the "Shent per Shenters" whose letters we published in our last two issues. The bearers of the curious names, Nokes and Nokes, were, on November 22, fined £5 (costs extra) by Mr. Horace Smith, and ordered to at once carry out certain work that was necessary, and if it had been done without all the police-court farcicality, would have saved Nokes and Nokes about £50 which they (or their clients) may now be the poorer by. As for another terrorist, a heavier calamity has befallen him. The earth groaning under the weight of his structures could bear them no longer, and Westminster-road had a narrow escape. One of his houses grew so intoxicated with sanitary sanctity that it fell down. Unfortunately, the "shent per shenter" owning it was not buried in the *débris*. The merry game of "shent per shenter's" houses making frantic efforts to cripple or annihilate harmless passers-by is still going on, two more houses having fallen on November 25th. The road is blocked, and the Tramway Company have had to lay a temporary line to run their trams on. But the "shent per shenters" will be able to boast that, although their property falls in Westminster Bridge-road, it still ranks high in Tokenhouse-yard. The Islington Medical Officer of Health ought to be heartily ashamed of himself. We shall next hear of some wicked Sanitary Inspector being discovered looking very hard at some of the Islington structures, and the inmates finding their domiciles imitating the Westminster Bridge-road ones, and burying them incontinently.

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

BY ALEX. J. WEDDERBURN.

(Continued from page 355.)

DISTRICT OF COLUMBIA.

The *Washington Star* of April 8, 1893, contained the two following articles, which need no comment:—

INFANTS AND ADULTERATED MILK.

As shown by Dr. John S. Billings, in his recent lecture before the Sanitary League of the District, the death rate of coloured infants under one year of age in this city is 696 out of every 1,000, and of white infants of the same age 273 per 1,000. Right behind this appalling statement comes the almost equally startling statement of the superintendent of dairy products, Chemist J. D. Hird, that "90 per cent. of the milk coming into Washington is robbed of part of its cream, and 50 per cent. of it is coloured."

May not this be the explanation of the enormous death rate of infants during their first year, when milk

alone forms their sole article of nourishment? It seems to me that this is a vital question, and demands pretty serious consideration from the District Commissioners, and if not from them then from the Sanitary League.

The Chancellor of the Maryland Board of Health reports that 3,673 more infants died during the year 1882 in the city of New York, when there were no milk inspectors, than during 1883, when the milk inspectors were at work confiscating adulterated milk.

The city chemist of New Orleans, in his report to the Board of Health, shows that New Orleans has been paying \$300,000 yearly for the water to adulterate the milk supply of that city.

In addition to the evils of adulteration there are others connected with our milk supply which demand the most careful scrutiny. It has been conclusively proven that milk from a tuberculous cow may contain the bacilli of tuberculosis. From inspection, through the water added to the milk, or even from the water used in cleansing the milk cans, the germs of typhoid fever, diphtheria, scarlet fever, and cholera may be introduced into the human system. It has been demonstrated (see *Brit. M. J.* for January, 1893) that cows may contract scarlet fever and induce the disease in children through the milk.

M. Miguel, in *Chi. J.* of the Royal Microscopical Society, says he found in 1 cubic centimetre (about 16 drops) of milk, on its arrival at his laboratory only two hours after being taken from the cow 9,000 micro-organisms. In one hour more the number had increased to 31,750, while in twenty-four hours after leaving the cow the 16 drops contained over 5,000,000 germs.

Prof. Bang, of Copenhagen, observes that bacilli of tuberculosis found in milk, cream, and butter were not destroyed by scalding at a temperature of 150° F. Even 160° did not render milk free from disease-breeding germs.

These facts being undisputed, it would seem that no greater service could be rendered to the people of this city than for the proper authorities to thoroughly investigate this whole question of our milk supply and not trust to the analysis of an occasional pint here and there.

HARRY O. HALL.

April 7, 1893.

DRUGS IN MILK.

Would it not be well for the District authorities while investigating the quality of milk sold in the city to go a step further and inquire as to the use of antiseptics therein?

Some years ago I was, as an attorney, thrown in contact with the milk business, as conducted by retailers, and was astounded to find the use of antiseptics as one of the concomitants. One large firm went so far as to advertise "non-souring milk," and smaller dealers were compelled, in self-defence, to furnish the same quality. To me, who had been reared on a farm, where it is known that milk begins to sour at once upon being taken from the cow, the heresy of "non-souring milk" was simply horrible.

No matter what drug is used to prevent souring, the partaking of it in such small portions, as with children, can have but serious results through accumulation in the system, and I trust the health department will interpose their fiat. Watered milk is not injurious if pure water be used; but drugs of any nature should be peremptorily tabooed.

LAWYER.

FLORIDA.

From Prof. Norman J. Robinson, State chemist, Agricultural Department, State of Florida, Tallahassee, Fla.:—

Our State has only some general statutes against food and drug adulteration which, I think, are very imperfectly enforced, as there is no special officer whose business it is to investigate the matter or see to the execution of the law.

(To be continued.)

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GRIMBLE & Co., Limited, Cumberland Market, London, N.W.

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Food and Sanitation.

SATURDAY, DECEMBER 7TH, 1895.

A NOVEL POINT ABOUT MILK PROSECUTIONS.

THE following decision may raise the question, Is Mr. Pullen an imitator of the entertainer who has one side of him garbed as a man and the other as a woman, and presents each to the audience as demanded by the duet he sings. Is Mr. Pullen "skim" milk to Mr. Tyler and "new" milk to the average person? The bench evidently thought he was, as they asked him to pay 20s. fine under these circumstances at Brentford last week. He was summoned for having sold to Inspector Tyler new milk, which, on analysis, was found to be deficient of natural fat to the extent of 13 per cent. William Randall proved purchasing a pint of new milk from the defendant for which he paid a penny.—The defendant: And you expected to get new milk for that?—Witness: I asked for new milk. The milk was in a china vessel on the counter of the shop, and had new milk on it.—By defendant: He did not turn the pan round; he did

not see the inspector turn it round so as to expose the words, "new milk."—Defendant: Then you are a big liar. (Order.)—Inspector Tyler said that when he went into the shop he saw the words "new milk" at once. They could be seen from the street. Directly the milk was asked for defendant said it was not new milk, but witness replied that, as it was labelled "new" it was sold as such, and he was entitled to buy some. The sample was sent to the analyst, who certified as to the deficiency. Though only a penny was paid, witness thought that that was the charge made to him because he was known to the defendant. William Randall, recalled, said that the defendant told him it was "skim milk" before he served it.—Inspector Tyler said that if people were to label "skim milk" as new, and then change it about according to whom the customer might be, the whole object of the Act would be defeated.—In reply to the Bench, the witness Randall said that the defendant knew who he was as the Inspector was with him.—Inspector Tyler said that the milk was exposed for sale as new, and had the defendant refused to serve him, he could have summoned him for the refusal.—The Chairman pointed out that there was no refusal.—The Bench, after considerable deliberation, said that it was wrong for the defendant to expose "skim milk" in such a vessel. The label on the vessel was calculated to deceive the public. But for his declaration to the purchaser he would have been fined heavily, but he would have to pay a fine of 20s.—Defendant asked for time to pay.—Inspector Tyler opposed the application, and said that the clerk of the court would tell the reason why.—The Bench refused the application. Had Mr. Pullen engaged Mr. Ricketts,

THE PROBLEM MIGHT HAVE BEEN SOLVED,

for Mr. Ricketts is a wholesale slaughterer of prosecutions in milk cases. At Hounslow last week Mr. J. D. Cossa, milk-seller, of 71, Churchfield-road, Acton, appeared to answer a summons taken out by Mr. W. Tyler, the Inspector under the Foods and Drugs Act, for selling milk to the public which had 8 per cent. of added water.—Mr. Ricketts, solicitor, appeared for the defence.—Mr. Tyler produced the analyst's certificate, which stated that the milk was adulterated.—Mr. Ricketts said the defendant purchased the milk from an wholesale firm, and with the delivery he had a warranty that the milk was in a sound condition. This, he contended, exonerated the defendant from all responsibility, as he was only to receive the milk with the warranty. In support of this contention he read numerous decisions in higher courts. He thought the present case was a very strong one in favour of the defendant.—Mr. J. Gardner, the station-master at Acton N. and S.W. Junction, said in November he received six churns of milk from Mr. Verey, of Wolverton, consigned to Messrs. Wilcox and Co. The churns were never lost sight of, and were delivered to the defendant later on.—Cross-examined by Mr. Tyler: He was always present at the station; but, being pressed, he admitted on one day he was not present. He noticed the labels on the cans, because he checked his books by them.—A carrier in the service of the defendant deposed to receiving the milk from the last witness, and handed it to Mr. Barker. Cross-examined: What became of the milk after that he did not know.—Mr. Barker, the defendant's manager, said he received the milk from the last witness with the warranty produced, which he detached. Witness put the milk in the dairy, of which he had the key. Some of the

Enjoyed by Young and Old.

BIRD'S CUSTARD POWDER

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NO EGGS! NO TROUBLE! NO RISK!

milk was sold, and the other was put in the shop.—Cross-examined: He would go so far as to say that if the milk was adulterated, it had been done before it was received by him.—Miss Rawlinson, assistant in the defendant's shop, said she sold the milk to the Inspector's assistant. She served it from the pail, the counter pan being dirty. Mr. Barker was present.—The defendant was then called as a witness, and he said he traded as "Wilcox and Company," at Acton.—The magistrates dismissed the case, but, on the application of Mr. Tyler, granted a summons against the farmer at Wolverhampton.

PROFESSOR SMITH IS STILL GOING STRONG.

He has now taken the Metropolitan Asylums Board under his august protection, and as that body is the most hopeless insanitary nuisance in London, it wants somebody to do something for it. The Board declined to send representatives to a meeting of London Vestries, held on Tuesday, to consider what was the Metropolitan Asylums Board's excuse for existing, and, says *The Star* :—

"One member, however, Professor Smith, of Woolwich, was present, and Mrs. Evans challenged the members of the Asylums Board who might be present to declare themselves. 'No, no!' said Professor Smith, and his friends pulled him out of the hole by moving that there should be no differentiation of the delegates. Mr. Help (St. George's, East) moved an amendment condemning temporary buildings, and urging the Asylums Board to rapidly complete the permanent hospitals which it has in hand. This gave Dr. Smith an opportunity of championing the Asylums Board.

"He declared that it had experienced the greatest difficulty in finding sites for permanent hospitals, and would find it absolutely impossible to get localities to consent to have temporary hospitals established in their midst. Objection had been taken to the fact that the Board received well-to-do patients into its hospitals to the exclusion of the sick poor. The Public Health Act gave the asylums managers no option but to receive all comers, and Professor Smith, amid cries of derision and incredulity, declared that the most scrupulous care had been taken that the most urgent cases should be removed to the Board's hospitals first. As regards permanent hospitals, the Brook Hospital, at Woolwich, would be ready for 500 patients in March, and the Board were building two others at Hither Green, Lewisham, and at Tooting, which would each accommodate 500 patients. He therefore appealed to the Conference to abandon the idea of temporary hospitals and wait to see what the Asylums Board might do in the sweet by-and-by. Already, he consolingly added, the epidemic was subsiding."

When the sky falls we shall catch larks.

MORE TUBERCULOSED MEAT.

EVERY day affords some fresh illustration of the need for compensation to butchers for animals suffering from tuberculosis. It would save the public from grave

dangers, as the following case shows. At Portsmouth, on December 2, Robert Lane, butcher, of 20, Nelson-road, Landport, pleaded not guilty to a charge of having four pieces of mutton deposited in a slaughter-house, No. 107, Moore's-square, Landport, on September 26 last, for sale for preparation for human food, the said meat being unfit for the food of man.—Mr. G. Hall King, who prosecuted, said that on September 25 last defendant bought fourteen sheep in one lot at Chichester Market, and bought another sheep separately for some 11s. or 12s. He gave a man named Marsh instructions to take the sheep to Portsmouth, and told him that if one seemed likely to die before it got to Portsmouth he should kill it and take the entrails out. At Chichester Station the sheep "came over giddy," and Marsh accordingly killed it. Defendant told Marsh that he would send a man to meet him at the station, and when he got there he was met by William Jones, who took the carcase to the slaughter-house in question, and gave instructions to a butcher named Hodges to dress it. Inspector Billing saw the carcase of the sheep hung up and ready dressed. One leg had been cut off by the defendant himself, and he had ordered Jones to "chop it down."—Dr. Mumby (the Medical Officer of Health) on examining the carcase, found that the sheep had been suffering from a serious tumour on its neck and also from tuberculosis, and the meat was condemned by Mr. J. Carpenter, J.P., and destroyed. Defendant told the Inspector that he was going to send the sheep to Dowdney's to be boiled down, but it was for the Bench to decide whether that was likely when the animal had been dressed and cut up into joints as described.—Marsh, William Jones, James Jones, Inspector Billing, and Dr. Mumby gave evidence in support of this statement.—Cross-examined by defendant, Marsh said that his general instructions were that if a sheep seemed bad it should be killed.—Defendant said that he had not been present when the sheep came to the slaughter-house, and had left orders that it should be dressed, saying that he would call the next morning and see if it was all right. He called the next morning and found that it was all wrong and decided to send it to Dowdney's.—He had been a butcher in the town for fifty years, and had had no complaint against him before.—Chief Inspector Monckom corroborated the last statement, and said that defendant had called him in when he was doubtful about an animal.—By Mr. King: It would be possible to see the state of the sheep as soon as it was skinned and opened. It was unwise of defendant to have it "chopped down." He should have sent it to Dowdney's in carcase.—Defendant was fined 10s. for each piece—£2 in all, and £1 6s. 6d. costs, Mr. Lancaster saying that it was only his previous long and honourable career as a tradesman that had made them reduce the penalty.

POINTS.—IV.

FACTS ABOUT MILK.

DR. M. A. ADAMS, Medical Officer of Health for Maidstone and Public Analyst to the Kent County Council, can speak upon milk with an authority few can claim, inasmuch as he revolutionised milk analysis. In view of the encouragement the Somerset House chemists give to the fraudulent adulteration of milk, it being a fact that they recently testified that milk having only 2.69 per cent. of fat was unadulterated, the Kent County Council are to be congratulated on having an analyst who is able to show the dishonesty of such a standard as clearly as Dr. Adams does in the following report. He says:—"Milk is a watery fluid containing from 11½ to 13½ per cent. of solid matter, consisting of two sorts of material. One sort of the nature of *fat*, which is insoluble in the water of the milk, the other of a kind that is *not fat* and which is soluble. With milk as with all animal secretions, the relative proportions of its constituents is not a fixed

quantity, it is subject to a range of variation just, for example, as man varies in stature, and in the same way as there are limits to the variation in the human stature so there are limits to the variations in milk. Naturally the first and most important business, in the application of analysis to the discovery of fraudulent adulteration, is to ascertain beyond all possible doubt what the relative proportion of the several constituents in genuine milk may be, that is to say, of the water, total solids, solids-not-fat, and fat. To furnish this information, *vast labour* has been bestowed, systematic analysis of milk produced under every conceivable condition of breed, age, period of lactation, food, climate, period of the day of milking, for milk derived from individual cows, and from the mixed produce of dairies, in every variety of circumstance that the wit of man can suggest; one set of researches, the best extant, embrace the analysis of no less than 120,540 separate and distinct samples, another instituted by the Government Department at Somerset House, 328 samples. These latter having been executed with the express object of supplying justices with data for their guidance in the exercise of their functions in relation to the Food and Drugs Act, the result of these researches are practically identical, and they have once for all settled:—(1). The *average composition* of milk to be in parts per cent. as follows:—Fat 4.1, solids not fat 8.9, total solids 13.0, water 87.0, total 100.0. (2). *The range of variation* from the average under all possible circumstances and conditions of breed, age, period of lactation, diet, climate, etc. (a) For single individual cows:—Fat maximum 5.91, minimum 2.43; solids not fat maximum 9.83, and minimum 7.52. (b) For dairy samples, being the mixed produce of a number of cows:—Fat maximum 5.61, and minimum 2.89; solids not fat maximum 9.70, and minimum 8.40. Naturally enough extreme departures from the averages are exceedingly rare; in the case of the fat, for example, which is by far the most variable constituent, only 2 per cent. of all the dairy milks that can possibly be found yield less than three per cent. of fat, and not one less than 2½ per cent. So that analysts and justices alike may rest assured in the belief and act with the utmost confidence in the certain knowledge that a dairy milk with less fat than 2.89 per cent. must have been deprived of a portion of its cream."

THE DANISH BUTTER HUMBUG.

The rubbish about the purity of Danish butter is now being exposed almost every week. A few weeks ago 36 casks of Danish butter were proved at Hetton Downs to contain 75 per cent. margarine; following that came the prosecution recorded in our last issue of William Wilson, at West Hartlepool, for selling Danish butter containing 56 per cent. margarine; and on November 22 another of the Danish victims had cause to lament his belief in the *bona-fides* and purity of Danish butter. This was John Day, manager of the Danish Butter Company, at Hindley, who was summoned at Wigan for selling margarine as butter. Mary O'Neil deposed that she went to defendant's shop and asked for a pound of butter at 1s. 1d. The article she was served with was analysed, and found to contain 11 per cent. of water and 60 per cent. of fat foreign to butter. Mr. Lees, who appeared for the defence, said the company had been established half a century in Worcestershire and the neighbourhood, many clergymen being prominently connected with the company, and it was not likely that they would lend themselves to such practices as they were charged with. A fine of £10 and costs was inflicted.

But the anti-English fiction that there is no butter so good or so pure as Danish will still find its enthusiastic eulogists in the English press, and our newspaper editors do their utmost to aid Danish produce against English.

PILLORING ADULTERATORS.

The Camberwell Vestry have, on the motion of Mr. Coward, agreed to publish the names, addresses, offences, and convictions of persons under the Food and Drugs Acts on the Vestry notice-board, the depôts, and on the other public buildings, etc., belonging to the parish. We must confess we do not like this procedure. It savours of the contemptible meanness of the Railway Companies, who take the price of a return ticket from a traveller, and, unless he can use it within a specified term of days, will not allow him to travel a distance for which he has paid, and will not return the money they obtained, and for which they have given no equivalent value, but who, whilst daily practising this mean thievery on the public, and receiving their money without allowing them to travel over the line, have the impudence to placard the names and convictions of persons who treat the companies to the same measure of honesty by travelling over the line without paying the fare. The publishing of convictions seems to us to be mean and vindictive, because, as the law stands, what does it suppose the retailer to be? It practically demands that he should be a capable public analyst, and know the exact constituents of each of the myriad articles he vends. He cannot do so, and the utmost that in reason and fairness can be expected of him is that he should exercise all possible care to avoid selling adulterated articles. But he does not manufacture the articles he vends, and however careful he be he may be victimised by the wholesale dealer or manufacturer and punished by a fine and costs, added to the wrong of being so badly treated. But this resolution means that such a trader, already unfairly treated, should be still further punished by being held up to public opprobrium. Even if he were a flagrant offender, guilty of intentional adulteration, he has paid the penalty of his offence. Let us have that act strengthened, and imprison the persistent rogue on whom fines do not act as a deterrent; let us enable the wholesale or manufacturing rogue, who now pockets the plunder and lets his scapegoats suffer, to be proceeded against, but a grave wrong and an undeserved stigma may fall on many an honest trader by this procedure of the Camberwell Vestry, and the sooner it is rescinded the better.

CHEMICAL ALE.

Since we commenced the crusade against chemical swipes being sold as beer or whisky, there has been a little rallying to the side of common sense and public health. The "dock wollopers" of Liverpool still take their aperient "long pull," but the Welsh colliers are in revolt against the swindle. Several colliers and farm labourers in Holywell, Bagillt, and Flint have decided not to drink the ale of certain brewers because the latter decline to purchase barley from the local farmers, who maintain it is high time for M.P.'s to insist upon the Government bringing in a Bill to stop the sale of chemical ale. Of course, we should bear in mind that the Welsh colliers are to blame, and that it is far better that beer should be produced from rice, sugar, etc., employing niggers in their growth and manufacture, than that

ENGLISH BARLEY AND HOPS SHOULD BE USED.

We feel that the Welsh colliers are foolish to object to brewers reducing the strength of their beers as they choose, using an appalling list of chemicals and any trash they like, and selling such "swipes" to the public as English ale. We find, however, baser ingratitude in Cork, where a band of persons have solemnly sworn to boycott certain distilleries, because they produce their whisky from Indian corn and potato spirit instead of home-grown grain. It is time a society was established to secure justice to brewers and distillers. It is an intolerable scandal that colliers and farm hinds should object to Lords and M.P.'s making an extra thirty per cent. profit by honest, legalised adulteration.

But the farm hind who, by reason of land going out of cultivation for the benefit of niggers growing the rice, maize, etc., is forced on the parish rates naturally becomes an intolerable, grumbling nuisance, and ought to be very rigorously squelched. There is, of course, another point of view from which one might regard our brewers and distillers, Lords and M.P.'s, viz., from that of the treadmill; but the aim of the prison reformer ought to be ever to keep away corrupt influences from our criminals, and the brewery and distillery Lords and M.P.'s may be doing less harm in their present work of poisoning the public.

BUT DON'T DRINK LAGER BEER.

for if you do you will annihilate the beneficent bacteria that are engaged as nature's scavengers in our "innards." Some time ago Dr. Maclaughlin, of Clough Jordan, co. Tipperary, sent us a sample of lager beer that bore the following label:—"Frankfurter Bierbrauerei, Gesellschaft, Vormals, Heinrich Henninger & Sohne," which a Mr. J. S. Dudley, of Middle Abbey-street, Dublin, was supplying. An analysis of the sample revealed the fact that salicylic acid was present in considerable quantity. Pretty nearly all lager beer is in the same interesting drugged state, so, bad as we are at home, it is perhaps better to suffer the swipes we know than fly to the amateur German beer druggist.

"GENUINE" COD LIVER OIL.

The *Pharmaceutical Era* says:—

"Some of the readers of this journal have been favoured with a proposition which reads as follows: 'I have discovered a very simple method to discolour Newfoundland oil to the finest, light colour of new, pure Norwegian oil; taste and smell are greatly removed also. According to the present price of Norwegian oil, it should be advisable for you to take a-hold of my method. I use no acid, ether or heat, but a very simple thing, like the egg of Columbus. The price of my formula is \$10, or, if sold to one party only in your city, \$25. Hoping to be favoured with your order soon, I am,

"It should not be necessary to caution the drug trade against such a fraud as this, but there are, in all lines of business, individuals who are only too ready to pursue illegitimate and fraudulent practices for the sake of a little gain which they may secure, and it is for this reason, among others, that we refrain from giving the name of the proposer of the above fraudulent scheme, and from exposing him as he should be exposed and denounced. We do not wish to advertise him, but to caution our readers, for there is undoubtedly some of this fraudulent, misnamed Norwegian oil on the market, and they should be careful in verifying and inspecting their supply. We cannot observe the swindler's request that his communication be kept 'confidential.'"

It would be interesting to learn if English druggists have had such offers.

JOHN BULL AND HIS PILLS.

Between six and seven million pills of one kind or another are estimated to be daily consumed in the United Kingdom. The estimates are based on the actual daily sales by druggists of ordinary pills, prescription pills, and patent-medicine pills. The average of these estimates, which came in from all parts of the country, showed that the daily consumption was considerably over five and a-half millions, which would give one pill per week to every man, woman, and child of the population. Taking the average pill to weigh three grains, the year's supply for the United Kingdom would weigh not less than 178 tons, or enough to fill thirty-six ordinary wagons, and making a train load which would require two powerful engines to pull.

FASHIONS IN QUACK NOSTRUMS.

Patent Medicines have their fashions like bonnets or ties. There was a time when plasters were all the rage, but after sticking to them for some years the public taste changed, and then kidney and liver medicines came into vogue. People who never knew they had kidneys began to take stuff that they had heard was good for them, and the men first in the field got rich.

Bitters were in vogue universally at one time. A man whose sideboard was not provided with half a dozen different varieties of bitters was considered old-fashioned and destitute of enterprise.

Then there was the craze for pads. There were lung pads, and liver pads, and kidney pads, and foot pads. No man who wished to keep up with the times failed to go to his druggist and be measured for a pad. With a full quota of pads, properly adjusted, undershirts were superfluous.

Cough remedies are having their innings now, there being something like 300 in the market.

The sarsaparilla humbug was universal twenty-five years. It went out of fashion, but has just been revived.

HARVEY W. WILEY ON "NITROGEN-FREE EXTRACT," ETC.

"Not of less practical importance to agriculture has been the recent progress in our knowledge of that indefinite complex which has so long passed under the misnomer of 'nitrogen-free extract.' With the exception of the facts that it is not nitrogen-free and that it is not an extract, the name may do well enough. At least some agricultural chemists have an idea of what the term signifies, and to others it serves the purpose of the physician's 'malaria,' permitting to designate, in a fairly mysterious way, a something of which nothing is known. The constitution of the greater part of this complex body is now known, and the proportions of cellulose and of pentosans which it contains can be determined with a fair degree of definiteness. We should deem it a matter for congratulation to be assured that the day is fast approaching when the agricultural chemist will no longer be called on to determine 40 per cent. or more of a cattle food 'by difference.'

"In late years not only has organic chemistry helped us in the way of a better understanding of the composition of the carbo-hydrates, but it has also pointed out to us some of the main points in the constitution of those most valuable products, the vegetable proteids.

"We are away behind our digestive organs in our understanding of these bodies, and have been accustomed in practical work to place all proteid matter together in a single class. But there is no doubt of the fact that the vegetable proteids differ as much among themselves as those of animal origin, and at last the chemist is able to distinguish between them. Even if it should prove that there is little difference in their food value, yet it must be conceded that a knowledge of their structural differences, together with the several contents of nitrogen found therein, will prove in the end of the greatest advantage to the agricultural chemist."

SHORT WEIGHT AND THE PUBLIC.

The late John Bright, when President of the Board of Trade, defended "adulteration as a form of commerce which should not be interfered with." Naturally, after such testimony from the people's tribune in favour of selling china clay and six threads per yard as cotton for savages, a sort of thing that is bound to enhance our good repute in Darkest Africa and wherever else these delightful fabrics have penetrated, some friendly public morals would naturally arise who would enlarge upon the benefits the publican who puts an excess of 10 per cent. of water into his spirits confers upon the

society by inducing sobriety and all its moral advantages. If short measure in spirits be a blessing, why not short weight in butter, cheese, and the like? Mr. Smith, the Wiltshire Food and Drugs Inspector, objects to such blessings when dispensed at the Home and Colonial Stores, Swindon. He caused butter and cheese to be bought by different persons, and in each case found the articles deficient in weight. The attention of the store manager had been called to a previous case of a similar kind. On behalf of the stores, Mr. George Elliott, barrister, made a very able defence, and secured the dismissal of the case as against the Home and Colonial Stores Company, who have some 270 shops in various parts of the country, but the bench considered it proved as against the assistants at the Stores, and fined Hann 5s. and £1 19s. 2d. costs, and Read 5s. and £1 19s. 2d. costs in one case, and 5s. and £1 2s. 8d. costs in another case. It was pointed out that not sufficient allowance was made to the branches for leakage by loss of water by evaporation and the like, and that the company allowed only 15s. in each £100 for such leakages. It was suggested that the employees had to give short weight or they would have to pay some part of their wages to make up the loss.

A NICE CHRISTMAS BOX.

Dr. F. J. Allan, Medical Officer of Health to the Strand Board of Works, has rapidly gained the confidence and goodwill of the members of the Board. They have just increased his salary by £200 per year, which is the best of all tributes to Dr. Allan's skill and the Board's appreciation of it.

INFANT FEEDING IN FRANCE.

In France this is regulated by very strict laws. A severe penalty is incurred by any one giving infants under one year any form of solid food unless such be ordered by a written prescription signed by a physician. Nurses are also forbidden to use nursing bottles provided with rubber tubes in the feeding of infants.—*Exchange.*

A MODEL INDUSTRIAL VILLAGE.

Mr. George Cadbury, of Birmingham, has just entered upon a novel experiment for the benefit of his workpeople. He recently purchased nearly 200 acres of land adjoining the works at Bournville, near Birmingham. The estate has to be divided into 800 plots for building purposes. Semi-detached villas will be erected, and a sixth of an acre will be apportioned to each residence. A 999 years' lease of the ground at a nominal rental will be given, and the £250 necessary for building purposes will be advanced on mortgage by Mr. Cadbury's solicitor. A park, a public building, baths, and several playgrounds will be established. The tenants, by weekly instalments, repay the cost of building, and become the owners. This is a vast improvement, from the workers' point of view, upon the methods of that model village Saltaire.

HOW SMALL SHOPKEEPERS ARE DUPED.

We are not sorry that Patrick Snee's snicker did not go down at Salford, on November 29. He is a wholesale provision dealer, living in Hodson-street, Salford, and has been selling to several small shopkeepers in the borough margarine, which he represented as pure butter. Inspector Marriott, of the Health department, proved the offence, and the defendant pleaded that he did not know it was margarine. He could not, he said, tell the difference between best mixtures and butter unless he saw the brand. Mr. A. Holmes, deputy town clerk, said he had told one of his customers that his father, who lived in Ireland, supplied him with butter, and he got such large supplies that he could afford to sell it cheap. The stipendiary said he had better give up the business if he did not understand it.

Mr. Holmes said there were three persons of the name of Snee who went about supplying shopkeepers in the borough with margarine for butter. Defendant was fined £7 and costs or a month's imprisonment.

THE METROPOLITAN ASYLUMS BOARD'S BREAKDOWN.

The unfitness and mismanagement of this Board has reached a point at which an enquiry is really necessary, and the vestries and ratepayers who are taxed to support it, but have to sue in vain to have infectious cases removed to hospital, ought to have power to build hospitals for their own requirements, or direct representation on the Board. Every day sees its scandal, of which the following is a specimen:—At Worship-street on Nov. 30; Alfred Smith, 27, described as a porter, living in Usher-road, Bow, was charged with stealing about three pints of milk, the property of Richard Evans, dairyman, of Roman-road.—At half-past seven that (Saturday) morning a police-constable of the K division saw the prisoner go to a churn of milk which a cart had a short time before deposited at the prosecutor's door, and, dipping a jug into the milk, walk away with a jug full. The constable pursued, and chased the prisoner, who threw the jug away. When he was caught he asked for forgiveness for the sake of his wife and children.—In answer to the usual question, the prisoner, who did not dispute the evidence, said he had been out of work for six weeks past, and had three children at home ill.—The prisoner was then asked if he wished the magistrate to deal with the case, and, on his replying that he did, Mr. Bushby sentenced him to a month's hard labour.—After being removed from the dock the prisoner exhibited great concern as to his wife and family, stating that his three children, aged nine, seven, and four years, were all down with scarlet fever, and he had taken the milk to give to the children. He made further statements showing that the Asylums Board had been expected to remove the children, but had not done so; that, although he shared the one room with the sick children and the wife, who was nursing them, he had gone about day by day looking for work, as there was no food in the house, and that even that morning, after a night spent among fever-stricken patients, he had come out with the jug to get them some milk. The police had not inquired as to the illness, and had locked the prisoner up with others in the cell, brought him to court with other prisoners, and now he has gone to Pentonville Prison, reeking, as he says, with fever infection.

Of course the Board has explained, but the explanation is, as usual, beneath serious notice. Less explanations and more efficiency is what the Metropolitan Asylums Board needs.

CHARGES OF BRIBERY AGAINST FOOD AND DRUGS ACT INSPECTORS.

Mr. James Hudson made these allegations to the Select Committee of the House of Commons on adulteration, but he brought no proof. Mr. Arthur L. Bridge furnished the best of all answers to Mr. Hudson at North London Police Court, on December 2nd, when Harold Ray Abbott, a partner in the firm of Abbott Brothers, milk contractors, of Ilford and Southgate, was summoned before Mr. Paul Taylor for attempting to bribe Mr. A. L. Bridge, an inspector to the Middlesex County Council under the Adulteration of the Food and Drugs Act, contrary to the provisions of the Public Bodies Corrupt Practices Act of 1889. Mr. Bridge had purchased a sample of milk for analysis, and he accuses Mr. Abbott of trying to bribe him with a £5 note.

Mr. Matthews, for the defence, stated that the note was offered to Mr. Bridge to pay his expenses to go to the country to test the milk of farmers supplying Mr. Abbott. Mr. Paul Taylor committed Mr. Abbott for trial to the Central Criminal Court, his own bail being taken.

QUININE AND THE PHARMACOPŒIA.

THE case that was heard at Keighley on Nov. 29th, in which John and E. Dawson were summoned for selling quinine wine not of the nature and substance required by the British Pharmacopœia, was of more than passing interest. If the defence that was raised, and raised with a successful result, is to be relied upon, the learned men who are responsible for the drawing up of the various formulas which the Pharmacopœia contains are liable, like ordinary mortals, to err. The point for the prosecution was that this wine was deficient in quinine, and the defendant met the point by saying that he had put in the exact quantity prescribed; and he proceeded to show that the subsequent filtration, which was made imperative, had the effect of displacing some of the quinine, and hence the deficiency. To put it plainly, it was contended that the Pharmacopœia had left no margin for filtration, and hence a maker must exceed the prescribed quantity, or be prepared to be hauled before the justices for selling a deficient article. The case was dismissed.

"BEER AND SWIPES."

THERE being no prosecutions possible for beer adulteration, save for dilution, as the Inland Revenue allows any trash to be used for beer brewing, in substitution of malt and hops, no prosecutions, save Inland Revenue ones, can take place. The following case is instructive. At North London, Matthew Horne, beer retailer, of 103, Wick-road, was summoned for diluting beer, whereby he became liable to a penalty of £50.—Mr. Alpe prosecuted for the Inland Revenue. George Searle, an officer of Inland Revenue, said he went to the defendant's cellar on Sept. 23 and took a sample of beer from a barrel. He subsequently saw the brewer, and ascertained that the gravity of the ale when it left the stores was 100.55. He then took his sample and handed it into the laboratory at Somerset House.—Mr. Robins, one of the analysts at Somerset House, said he had discovered that the gravity of the sample was only 100.39, which showed eight gallons of water in the barrel of thirty-six.—The brewer was not in attendance to prove this, but the defendant, in reply to the magistrate, said he did not ask for an adjournment. He went away to Edinburgh for a couple of days, and left the cellar in charge of a man who had previously done the work. He understood that the beer had run short, and they were waiting for a delivery, and all that had been added was waste beer.—Mr. Alpe: You are not allowed to use waste beer.—Mr. Paul Taylor: Do you allege that the beer was tampered with in transit between the brewery and your house?—The Defendant: No.—Mr. Paul Taylor: Do you plead guilty?—The Defendant: I must.—Mr. Paul Taylor: I look upon this as a very bad case.—The Defendant: I am a poor man.—Mr. Paul Taylor: Nothing to do with the matter at all. You have sold water at the same price as beer, and I shall fine you £25, or two months' imprisonment. It is curious that it should be a crime for Mr. Horne to use waste beer, whilst the brewer is allowed to doctor it and use it with impunity. It shows in what a disgraceful muddle the scientific department of the Inland Revenue is.

"SPENT" GINGER.

THIS exceptionally paltry fraud upon retailers by some unscrupulous spice firms has been very rigorously proceeded against. The pity of it is that the wholesale dealer cannot be punished for it, because it is not the small shopkeeper who buys the worthless fibrous matter from which ginger-beer makers have extracted its properties, and grinds and mixes it in 30 or 40 per cent. with genuine ground ginger. On November 27th

another victim of the swindle was summoned at Liverpool. Michael Somers, Stanley-road, sold to Inspector Baker a quarter of a pound of ground ginger. He afterwards had it analysed, when it was found to contain 30 per cent. of spent ginger. The defence was made that the article belonged to a former tenant of the shop, and all that the defendant knew about it was that the canister was labelled "Ground ginger." A fine of 10s. and costs (£1 5s.) was imposed.

MILL-DUST AND DAIRYMEN.

THE Dundee dairymen are up in arms because the sanitary authorities object to the use of mill-dust as bedding for dairy cows. When we consider that the mill-dust suffers all kinds of contaminations from sputum, etc., we must conclude that the dairymen are very ill-advised, and they would do better to use clean straw or moss-litter. In dairying, cleanliness is the first golden rule.

THE EXTENT AND CHARACTER OF FOOD AND DRUG ADULTERATION IN AMERICA.

BY ALEX. J. WEDDERBURN.

(Continued from page 371.)

GEORGIA.

From John M. McCandless, chemist, Atlanta, Ga.:—In my opinion, a law providing for a close and stringent inspection of food and drugs is very necessary all over the country. I believe, however, that to be of any vital force or effect the law should be national in its character, so that adulterators in one State cannot hide behind the laws or the lack of laws in another State.

From R. J. Redding, director of the Georgia Experiment Station, Experiment, Ga.:—

I am of the opinion that a national food and drug law, if properly administered, would conduce to the health of every consumer.

From E. M. Wheat, president of the Georgia Pharmaceutical Association:—

You will see from the Georgia pharmaceutical laws that this State has a very good law upon the subject of drug adulteration, and the officers are very vigilant in having those laws carried out; therefore, I hardly think that we have any adulteration in drugs.

So far as I know, there is very little adulteration in food articles in this State. There is a great deal of so-called cider manufactured here—that, of course, is adulterated, and, I think, very injurious.

ILLINOIS.

From Dr. Samuel Kennedy, Ph. G., secretary, Board of Health, Shelbyville, Ill.:—

As to your question regarding the adulteration of children's foods, dairy and pharmaceutical products, I hardly know how to answer, as it seems to me impossible to draw the line distinguishing between what is and what is not an adulterant. I know of a large number of pharmaceutical products which are made up by our (so called) pharmacists, but they are not properly prepared. It does not seem, however, that I would be justified in saying they are adulterated.

From A. W. Hutchins, secretary Board of Trade, Elgin, Ill.:—

Lard is used to adulterate cheese.

From L. R. Bryant, president Cider and Vinegar Association, Princeton, Ill.:—

I do not think spurious cider is manufactured to such a noticeable extent as vinegar is. There is no doubt,

however, that in some seasons large quantities are sold in bulk. The so-called champagne cider sold by soda-water vendors does not contain any cider.

The adulteration of vinegar is mainly in two ways:—

(1) By colouring spirit-vinegar to imitate cider-vinegar, and (2) by the use of injurious acids in weak vinegar, to give it the appearance of greater strength.

The imitating of cider-vinegar by colouring spirit vinegar is very largely done, and it not only defrauds the consumer, but works great injury to the genuine cider-vinegar maker. I have no doubt that more than four-fifths of the vinegar sold in Illinois as cider, apple, or fruit-vinegar is nothing but coloured spirit-vinegar. As to the extent of the use of injurious acids in vinegar, I am not prepared to say, but think they are used more or less by makers of very cheap vinegar.

State laws regulating the manufacture and sale of vinegar have been passed in a number of States, and where properly framed and enforced have been effective, as in New York and Minnesota.

In this State there is no vinegar law that is of any value. In 1891 an effort was made to pass a law, but it was not successful. I understood the same Bill was introduced this winter, but I do not know what prospect there is for its passage.

The efforts to secure national legislation have taken two forms. First, the Paddock pure food Bill was generally advocated by the cider makers as being in the line desired; second, the repeal or amendment of the vinegar law of 1879, which permits the distilling of a low grade of alcohol for vinegar without payment of any tax, and without Government supervision.

What cider-vinegar makers specially complain of is that the spirit-vinegar men are allowed the exclusive privilege of distilling free alcohol, and then take the liberty of colouring and branding it and selling it on the superior reputation of cider-vinegar.

INDIANA.

From George W. Benton, chemist of the Health Department of Indianapolis, Ind.:—

Our city has not as yet considered it important to carry on any systematic study of adulterants. Our Board of Health, however, feels the importance of it, and we hope in time to establish such investigations.

As to laws relating to foods, etc., we are poor indeed. It is next to impossible to make a case in even a plain matter of adulteration of milk, as the law requires that we not only prove the fact of adulteration, but that the violator knew the article was adulterated, and that it was intentional to defraud, etc. We have won only three cases in a year on that basis, and lost many others on failure to prove the last two clauses.

We have done nothing with cheese, but I have detected the presence of refined lard in some quantity in several cases in the examination of butter.

In the way of milk, at least one dairy company uses, or has used, a milk preparation which, without ultimate analysis, seemed to be mainly dextrine, or something closely resembling it. Our crusade on milk dealers in the autumn and winter of 1892, although not resulting in many convictions, has resulted in giving us a season almost free from trouble of the kind.

From Mortimer Levering, La Fayette, Ind.:—

There are no State laws, no local laws, but laws preventing the sale of bogus food and drugs would be eminently beneficial to the credulous masses of Western farmers.

From William L. Mollering, pharmacist, Fort Wayne, Ind.:—

No butter and cheese adulterants have come under my observation, with the exception of butter colours, which are usually prepared from turmeric.

From Dr. J. A. Muret, Madison, Ind.:—

I have found it necessary in my practice to recommend a change of milkmen for selling adulterated milk to the people and sick babies.

From Ernst Stahluth and Co., druggists and pharmacists, Columbus, Ind.:—

I have made no examination of butter recently. Some butter is sold which is a mixture of all grades churned with milk and coloured with some proprietary butter colour.

Impure baking-powders are sold here.

Some time ago I made an examination of cream of tartars and found more specimens of it adulterated than I did pure. I found no adulterated cream of tartar in drug stores, it being the usual kind found in groceries. The adulterants consisted of starch, chalk, alum, plaster of Paris, and acid phosphate of lime.

The most of the cayenne peppers sold here by druggists in the powder is mixed with corn-meal, as is also the prepared mustard sold by grocers. Adulterated saltpetre is also sold.

IOWA.

From R. W. Crawford, wholesale druggist, Fort Dodge, Iowa:—

I am and have been actively engaged in the drug business for twenty-five years, and use care in the drugs I dispense. I find but few adulterations. The worst lot I ever received was from Detroit, Mich., which I returned, the goods being powdered goods—black pepper and others—loaded with terra alba. The capsicum of commerce is said to be very impure, loaded with something, and presumably before it is imported.

KANSAS.

From H. W. McKinney, M.D., health officer, Hutchinson, Kans.:—

Our State Board of Health recommended the enactment of more perfect laws governing the practice of medicine, collection of vital statistics, and other good things, but it seemed our legislature was so busy in fighting for party supremacy that nearly everything that was pre-eminently needed was ignored or forgotten. I have made some investigations in a general way, and have reason to believe that many, perhaps very many, articles of food are adulterated, notably in the spice line. You can purchase a pound of ground mustard, spice, cloves, or cinnamon, or a pound of cream of tartar from a greengrocer for one-half what a reliable druggist of our city will charge for the same article. I can say for the druggists of our city that you can seldom find on their shelves what is termed commercial drugs (cheap drugs), although they sell black pepsin, as they say their trade demands it. It is my candid opinion that the enactment and rigid enforcement of a national food and drug law, such as you speak of, together with laws by the States governing their own trade, would be productive of much good.

KENTUCKY.

From Dr. Wiley Rogers, Ph.D., commissioner of public charities, Louisville, Ky.:—

I have not made any special investigation relative to food and drug adulterations for several years. I was then sanitary inspector for the city. I am now a commissioner of public charities, and we have pure food and drugs for our city hospital, which I visit once a week, for there I examine the food that is given to the sick. I know that food adulteration is largely on the increase, and all that is necessary to prove it will be a thorough investigation. As to drugs, in which I am most interested, my opinion is that you can get pure drugs if you pay for them. I have been in the drug business since 1858.

From E. Y. Johnson, pharmacist, Louisville, Ky.:—

The only experience I have had in food and drug adulterations was in making an analysis of several samples of cream tartar, about two years ago. I tested samples from four or five groceries, and found in one

sample as much as 75 per cent. sulph. calcium. In the others I found calc. sulph., as well as tartrate calcium, instead of the bi. tart. pot. My reason for conducting the tests was to ascertain why the groceries could retail cream tartar for about what I paid wholesale.

LOUISIANA.

From Erich Brand, 847, Magazine-street, New Orleans, La.:—

The only adulterant I have ever seen used in milk was water, and lately I have seen some specimens of cream cheese adulterated with some amylaceous substance, most likely corn starch.

From R. N. Girling, New Orleans, La.:—

The Board of Health of this city, of which Dr. L. F. Salomon is secretary and Dr. A. L. Metz is chemist, has for several years been actively engaged in preventing the adulteration of milk, by vigorously prosecuting the dealers. The only form of adulteration has, I believe, been the addition of water. A great improvement has been effected in the sanitation of the cow stables, and in the quality of the water supplied to the animals.

From Dr. R. J. Mainegra, 84 Washington-avenue, New Orleans, La.:—

I am perfectly satisfied that a great deal of butter is consumed in this city which contains large proportions of beef tallow and cotton-seed oil, with colouring matter.

MAINE.

From W. H. Jordan, director agricultural experiment station, Maine State College, Orono, Me.:—

The only adulterant I personally know to be used in this State in dairy products is boric acid, or the so-called preservaline, which is used by those who are sending cream out of the State as a means of preventing fermentation.

MARYLAND.

From Dr. James A. Stuart, secretary of the State Board of Health:—

The amount of information the State Board of Health is able to give in regard to the adulteration of food and drugs is very meagre, owing to the very limited appropriation made by the State legislature for this purpose. Since my appointment in April I have employed two inspectors, one for marine and the other for animal foods. The general results of such food inspections as we have been able to prosecute have been remarkably good for such limited opportunities. There are local laws, both State and municipal, but too vague, and without support of inspectors.

A national food and drug law would be of great use and benefit to this as well as all other communities in this country.

From Dr. Tonry in the *Baltimore Sun*:—

If you really want a fruit jelly which is made wholly and entirely from raspberries, strawberries, or currants, do not expect to find it commercially, but procure the fruit and make it for yourself. The best commercial jelly imitations are made from good apples, to which is added glucose, sugar to sweeten, tartaric acid to give tartness, and the composition is transformed into fruit jelly by the addition of the syrups after which it is named.

A common article is made from the cores and parings of apples and the addition of glucose, tartaric acid, aniline colours, and a little salicylic acid, and the compound is converted into a fruit jelly with the addition

of a little of the fruit syrup to help the illusion. The cost of this article by the bucket will not be over 4 or 5 cents a pound, while the better quality will cost 12 to 15 cents. In this line of goods, when you purchase in the market or at the grocery store an article to which the maker is ashamed to attach his name, you may expect to find, as I did in an article purchased in one of our markets, very much glucose, no sugar, aniline enough to give colour, and no raspberry-syrup. The article cost 15 cents a pound and had on the package a printed label with the words, "Raspberry-jelly." Only that and nothing more; but the vendor assured me that the article was really a pure raspberry jelly, and as I find it not always advisable to appear to know too much I did not express my doubt of the manifestly false assertion. Personally, I do not object to pure apple butter with a little pure glucose and some raspberry syrup, sugar, and tartaric acid. It would be easier and better to adopt a name which would give a more correct idea of the compound, but I think I would draw the line, between good and suspicious articles of this class, at apple skins and apple cores, second or third grade glucose, and aniline colours.

From Dr. E. T. Duke, secretary of Board of Health, Cumberland, Md.:—

There are some adulterations in certain essences, laudanums, paregoric, etc., sold in the country stores. These goods are purchased in large cities. The adulterants are not injurious to health, I think.

From Columbus V. Emich, druggist, Baltimore, M.D.:—

I am unable to give you any reliable statement as to adulterations of foods, drugs, etc. That it prevails to a very great extent is, I think, clearly the case, and the evidence of that is to my mind the advertised rates at which many goods are offered and sold. As men do not work for work's sake and glory, it is reasonable to suppose that goods offered far below rates at which goods can be bought at first hand, are prepared for the special rates at which they are offered. This, however, is not the information you wish, but the general condition is all that I am aware of so far as direct evidence will go.

Dr. Chancellor, secretary of the Maryland State Board of Health, in an address before the convention of the National Food and Dairy Commissioners of 1892, held in Washington, D.C., March 30 and 31, 1892, said: "Now, sir, in accordance with a suggestion or resolution I do not remember which—that was introduced here yesterday that each member of this association should, as far as possible, see a member or members of the delegation from his State, and urge the passage of this Bill, I happened yesterday afternoon to meet with a prominent member of the Maryland delegation on my way home, and I took occasion to bring this matter to his attention, and he said he was entirely in accord with the object of the Bill, but he doubted very much the constitutionality of it, and his doubts were based upon its possible interference with State's rights, I told him thirty years or more ago I thought as he did, but the logic of events had convinced me that the proper thing to do now was to keep the States right, and, above all things, to keep these people right who were poisoning our people and our children, and who will continue to poison our children and our children's children unless some action is taken by the National Government.

I am very well satisfied, sir, notwithstanding the success which Massachusetts and New Jersey have had in this matter, that all States that will follow the course which they have pursued will have great difficulty in getting to the point they have reached, and if we reach that point by one single bound I think it would be much better, and the only way to do it is through national laws."

(To be continued.)

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PARISH OF ST. MARY, NEWINGTON.

The Vestry of the above Parish, as the Sanitary Authority under the Public Health (London) Act, 1891, is prepared to receive Applications from Candidates for the office of SANITARY INSPECTOR.

The salary will commence at £110 per annum, payable monthly, with an annual increment of £5 to a maximum salary of £150.

The person appointed must reside in the Ward for which he is appointed, and will be required to devote the whole of his time to the service of the Vestry, and will not be permitted to engage in any other occupation.

Candidates must not be less than 30 years of age nor more than 45, and canvassing is strictly prohibited. They must also be holders of a certificate from a sanitary examining body, and competent to discharge the duties as defined by the Sanitary Officers (London) Order, 1891.

Applications to be made in Candidates' own handwriting, on forms to be obtained from the undersigned, accompanied by not more than three Testimonials, and must be sent in by Wednesday, the 18th instant. Candidates will not attend unless requested.

The appointment will be subject to the approval of the Local Government Board, and the selected Candidate will be required to commence his duties upon such sanction being given.

By order,

Vestry Hall, Walworth, S.E.
December, 1895.

L. J. DUNHAM,
Vestry Clerk.

FOOD AND SANITATION is Published Weekly, and the Subscription is 6/6 per Annum, post free.

ADDRESS—

M. HENRY,
Neva Grange,
Loat's Road, S.W.

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Food and Sanitation.

SATURDAY, DECEMBER 14TH, 1895.

THE NUTRITIVE VALUES OF MEAT EXTRACTS, ESSENCES, AND JUICES.

THE worst thing, from the point of view of the public, about proprietary foods is that their manufacturers, like the Bourbons, learn nothing, whilst they forget not one of their prejudices. We showed, nearly three years ago, the practical worthlessness as nutrients of nearly every meat extract, essence, or juice on sale for invalids' use. As long ago as July 8th, 1893, the late Sir Andrew Clark wrote us, saying:—

"Dear Sir,—Some months ago you published in one of your issues an account of some of the condensed and other food preparations, such as Valentine's Fluid Meat and some others, showing their comparative worthlessness from a nutritive point of view. I am anxious to refer to the facts given in that article for the instruction of my pupils, and will be much obliged if you will forward me two copies."

In the face of facts like these, it might be thought the manufacturers would earnestly set to work to bring their Invalids' foods into line with the latest knowledge in dietetics; but no, they allow the preparations to remain in the same condition that they were when we first analysed them. Our investigations surely showed the necessity for improvement, because it would be difficult to conceive a more dangerous condition of things for invalids using meat extracts, etc., than those analyses revealed. There are countless thousands who know nothing of the true value of the meat foods, but take them on the faith of glowing testimonials that have no scientific justification whatever. If these foods were not proprietary articles upon which large sums of money have been expended in flooding the medical profession with worthless eulogies of their virtues, and for which enormous sales to the public have been secured, it would be no one's interest, once they were shown to be of very little real value, to continue the manufacture and sale of substances as invalid foods that are dangerous delusions. An attempt would be made to make them valuable articles of food or they would fall into deserved disuse. It is a very grave question and shows how sorely we need a Ministry of Public Health, having ample powers, and a skilled body of expert chemists and medical men, who would analyse regularly all proprietary food and medicinal preparations, and warn the public against those that were misleading, and prohibit the sale of those found dangerous to public health. The claim that the public must take care of itself is barbarism. We have legislation guarding it against accidents in mines and by dangerous machinery, we have a Truck Act and milkshop orders, etc., showing that we recognise the need for guarding the public from the effects of their own folly, carelessness, and want of knowledge. But we allow a state of things to exist with respect to quack nostrums, foods and medicines that is a disgrace to our civilisation. The amount of money the public spend in rubbishy pills and the like would soon furnish us with a formidable navy, whilst the hard cash wasted by invalids in various Meat Extracts must have added much to the density of the population of our graveyards. The gullibility of the public may easily be gauged when we mention that it is

over twenty-three years since Dr. Edward Smith, F.R.S., dealt with Baron Liebig's frank acknowledgment that his extract of meat was not nutriment in the ordinary sense (*Vide Times*, Oct. 1, 1872). In the same journal of Oct. 16, 1872, Dr. Smith closed the controversy, saying: "Let it be clearly understood that at length the Baron is in accord with other scientific men, and that all may adopt the words of Liebig; 'Neither tea nor extract of meat is nutriment in the ordinary sense,' and all that I have contended for is accomplished. *Then we shall no longer have sick and dying men, women and children fed with it under the delusion that it is nutriment in the ordinary sense.* Liebig's extract is meat flavour, a nervous stimulant, and has good qualities, but it is not food." Dr. Smith's hope was a vain one, for more dying men, women and children are to-day fed with this phantom food than was the case when Liebig declared its worthlessness as a food. But there are foods sold for invalids, and lauded with encomiums from medical men, that do not possess one-quarter the meagre value Liebig's Extract can claim, as the following analyses demonstrate:—

	Brand's Essence of Beef (3 ounce equals 12)	Liebig's Extract of Meat.	Valen- tine's Meat Juice	Mason's Essence of Beef, cost.	Armour's Extract of Meat.
Quantity equals	2 ozs.	2 ozs.	2 ozs.	2 ozs.	2 ozs.
Cost (Store price) .. at	9½d.	1/2½	3/-	11d.	1/1½
	pr cent.	pr cent.	pr cent.	pr cent.	pr cent.
Water	91.23	16.87	55.24	77.07	15.85
Ether Extract	0.18	3.04	4.80	1.34	2.63
Albuminoids and Peptone with a small quantity of Gelatine (flesh formers) ..	3.79	9.55	2.48	3.03	10.89
Creatin and Meat Ex- tractives (almost non- nutritious)	3.96	47.32	18.27	7.47	43.23
Mineral matters, Salts of Flesh Phosphates, etc. ..	0.84	22.54	11.13	9.51	25.91
Non-nitrogenous Extrac- tives	None	0.68	8.08	1.58	1.49
	100.00	100.00	100.00	100.00	100.00

Heaven, the medical journals and a certain portion of the medical profession only can tell why some of the above preparations should sell for the use of invalids. Some of the Liebig's and Armour's extracts contain about 8.50 per cent. of peptone, whilst the total gelatine and albuminoids vary from 1.35 to 2.16 per cent. Gelatine is now pretty generally looked upon as worthless from a nutritive point of view, and it is a pity that chemical science is not in a sufficiently advanced stage to enable the matters from which the peptones are derived in meat extracts to be scientifically determined. There is reason to believe that a considerable proportion of the peptones disclosed by analysis are peptone of gelatine—i.e., a non-nutrient peptone, that might more properly be called disorganised gelatine.

Nutritive peptones must be derived from albumen. Albumen coagulates at 160 Fahr., meat extracts are concentrated at 212; the albumen is therefore, as Liebig admitted, "lost to nutrition," but 212 is the temperature suited to the production of Gelatine from the tendon and connective tissue of the meat. It is therefore evident that what tests as peptone in the analysis of meat extract is peptone of gelatine which cannot possibly reproduce flesh in the human system. Another analytical error resulting from imperfect study of the subject is the calculation of all nitrogen as proteid material. It is well known that the nitrogenous extractives of flesh are non-nutritious, and this point has been ably treated by Professor Atwater, of the U.S. Government, in his investigations on the chemistry and economy of food (page 13). He writes of the nitrogenous non-albuminoids of flesh: "The nitrogenous extractives (*viz.*, meat extract) can neither build tissue nor serve as fuel." Also, "They do not appear to serve any purpose

as building material in the animal body." Again, "The Albuminoids are the building material of the body; the bodily machine is made from them." "Gelatinoïds cannot, according to the best evidence now at hand, be transformed into albuminoids."

Peptones of Gelatine therefore are not food, and the nitrogen of meat extractives is not more available for the repair of the muscles than the nitrogen of the atmosphere; moreover, even artificial peptones of albumen have some serious disadvantages, which account for their being so generally disfavoured by physicians.

Substances like Liebig's and Armour's Extract have, however, some justification, for they are useful as flavourers for gravies, soups, etc.; but of what use are the other preparations? The highest priced of them—Valentine's Meat Juice—is not a meat juice pure and simple. It contains less than one per cent. of combined gelatine and albuminoids and 18.27 of the practically useless creatin, etc. If it were a meat juice, the proportions would be very different from those the analysis disclose. It appears to be merely an ordinary meat extract diluted with water. As far as nutrient value goes, the water in which dinner plates are washed would be about as valuable, but it can boast of glowing eulogies from representative medical journals like these here given:—

"VALENTINE'S PREPARATION OF MEAT JUICE.—Not only is the flavour of the meat admirably preserved, but the albumen of the juice is retained in perfect solution, as is proved by the ease with which it coagulates on boiling or mixture with dilute nitric acid. The preparation is, therefore, most valuable both as a stimulant and food, and we have no hesitation in recommending it highly."—*The Lancet*, London, December 25, 1878.

"VALENTINE'S MEAT JUICE.—This preparation, as its name implies, is the juice of meat expressed by a powerful hydraulic press. Unlike simple extracts of meat, it contains a large quantity of albumen in solution along with some hæmoglobin. Altogether, we think that this Juice will be of great service to the physician as affording a concentrated and easily assimilated form of nutriment."—*The Practitioner*, London, June, 1878.

Editorial from *Atlantic Journal of Medicine*, October, 1883.—"What patients and physicians need is a fluid holding in solution the nutritious principles and salts of the beef—a concentrated, fluid extract of meat, which will, alone, not only sustain life, but afford material for strengthening the patient, and at the same time be welcome to the most delicate stomach. . . . Our senior editor bears witness to the adaptability of Valentine's Meat-Juice to yellow fever patients, whose digestive organs are, we might say, entirely incompetent to perform their functions."

Editorial *Virginia Clinical Record*.—"We can, from a fair experience of this preparation, recommend it to the profession as possessing all of the qualities requisite in a concentrated form of nourishment, without the unpleasant taste which belongs to those we have hitherto been using. Mr. Valentine has conferred a great boon upon us by making his essence pure and strong, and yet so palatable that the most delicate stomach will not be offended by it."

It can do more than this, for thousands upon thousands of invalids pay 3s. for two ounces of it, and its makers, in a pamphlet now before us, state:—

"Valentine's Meat-Juice is the pure juice of the best beef—concentrated. Extracted from the flesh by a special process, it holds all of the important soluble constituents in an unchanged condition; the albumen, along with hæmoglobin, being preserved unaltered in the solution.

"It can be retained and digested without an effort, and absolutely, by the most delicate stomach.

"When a highly concentrated and energetic nutrient is demanded, in an emergency, the Meat-Juice can be prepared immediately, merely by the addition of cold water—one teaspoonful in two or three tablespoonfuls of water.

"That the Meat-Juice may be relied on, for its power and

safety in restoring and sustaining the sick, and in maintaining the convalescent, is made to fully appear from the endorsements of eminent physicians and surgeons of Europe and America, who have thoroughly and critically tested it with their patients."

The pamphlet contains testimonials more or less glowing of this "highly concentrated and energetic nutrient" (which, be it noted by the reader, can proudly disclose 0.93 of gelatine and albuminoids combined, and an entire total nutrient matter of less than three per cent.) from the following members of the medical profession—R. Mortimer Yule, M.D., Lerwick, Scotland; Gustavus Geo. Gidley, L.R.C.P., etc., Cullompton; A. J. Cross, M.B., C.B., Dalton-in-Furness; J. Arthur Cardew, L.S.A., etc., Cheltenham; Frederick Charlton, L.R.C.P., Salisbury, Allan J. Swallow, M.B., etc., London; W. Loch-Stuart, M.D., St. Romans, Scotland; Richard Waring, L.R.C.P., etc., Sudbury; A. H. Boys, L.R.C.P., etc., St. Albans; Hubert McKeon, L.R.C.P., etc., Brighton; J. Stewart, M.B., etc., Batley; J. H. May, M.R.C.S., etc., Plymouth; Geo. H. Barton, M.R.C.S., etc., Market Rasen; T. Lambert Hall, M.R.C.S., etc., Dilwyn; J. J. de Z. Marshall, L.M., etc., Hastings; W. M. A. Anderson, M.B., etc., London; E. Augustus Harbord, L.R.C.P., etc., London; Jane Russell Grant, L.R.C.P.I., Richmond; T. P. Cowan, L.R.C.P., etc., London; Geo. H. L. Rickards, M.R.C.S., etc., Poole; John Kershaw, F.R.C.S., Manchester; R. Sidney Marsden, M.B., etc., Birkenhead; Geo. W. Thomson, M.D., etc., Lanark; Geo. N. Robbins, L.R.C.P., etc., London; G. S. Walker, M.R.C.S., etc., London; C. B. Smith, L.R.C.P., etc., Rosehearty, Scotland; John J. Atteridge, M.D., etc., London; Rowland Pollock, L.R.C.P.I., etc., Tunbridge Wells; H. C. P. Masser, M.R.C.S., etc., Coventry; Robt. E. Gaye, M.R.C.S., etc., London; J. Wickham Barnes, F.R.C.S., London; David Lloyd, M.B., etc., New Castle, Emlyn, Wales; Robt. Sterling, M.R.C.P., etc., Stoneyford, Ireland; H. T. Nettleton, M.R.C.S., London; Edward Woakes, M.D., London.

The pamphlet containing copies of letters said to be written by the above gentlemen is scattered broadcast amongst the medical profession. The following is a specimen of the eulogies :—

"My little girl, aged eight years, and myself were on the invalid list; she from incipient hip disease, with temperature of 102, and I with *Debility from a severe attack of Influenza*. We were taken with the clear, nice-looking appearance of Valentine's Meat-Juice. She, seeing me try it, asked for it also, which she drank and enjoyed, although for some days previously she had taken no nourishment but milk. I am thankful to say she is getting better and still taking Valentine's Meat-Juice, which she likes very much. I am well, and will be certain to recommend to my patients this nourishing preparation, which has done my child and myself so much good. I certainly consider it by far the best preparation of meat I have yet seen."

We have underlined the remarks *no milk*, because it was very fortunate for the little girl that she had the sense or instinct to previously take no nourishment but milk, and we are safe in assuming that she varied her love for Valentine's less than 3 per cent. of nutriment with the common and cheap lacteal fluid, which, assuming that Valentine's Meat Juice is worth 3s. per two ounces, would be worth per pint an almost incalculable amount of money. Why do medical men thus testimonialise? It is not wise, as Lily Langtry's experience shows. Her signature was published everywhere in connection with a washing adjunct, and one day it struck a person to copy it and get £40,000 of jewels from her bankers.

We have written again and again on this subject of meat foods for invalids, hoping that our facts would be taken to heart, and the helpless invalid get a fair chance of escaping with his life, and the hopeless pity of it is bitterly revealed in these analyses.

Examine them as you will, there is not one that has

a justifiable reason for its sale as an invalid food, and yet we all know that hundreds of thousands of invalids stake their lives on the non-existent nutrient value of these preparations. It may be because Lord Playfair has given his declining years to the production of a real invalid food that we find only one firm engaged in the manufacture of meat extracts imbued with the true spirit of progress.

When we last analysed Bovril for invalids its composition was as follows :—

	Bovril for Invalids.
Quantity (equals)	2 ounces.
Cost (Store price) at	1 rd.
	Per cent.
Water	16.46
Ether Extract	2.72
Albuminoids and Peptone, with a small quantity of gelatine (flesh formers) ...	23.87
Creatin and Meat-Extractives (almost non-nutritious)	31.94
Mineral Matters, Salts of Flesh, Phosphates, &c.	19.48
Non-nitrogenous Extractives	5.53
	100.00

showing that Bovril was worth 30s. per two ounces if Valentine's was worth three shillings, seeing that Bovril had some ten times Valentine's albuminoidal value. Then, of the Bovril preparations, we said: "Our analyses, the reader may remember, threw a sinister light upon this question of Meat Extracts and Essences, the only preparation which really approached the requirements of a nourishing food being Bovril. With this exception, all the meat extracts offered to the public failed most lamentably in justifying their existence or sale. Bovril is evidently made on more rational principles, and its producers have apparently endeavoured to put some nourishment into their preparation by conserving, or adding, albumen and fibrin in moderately fair proportions. We cannot, therefore, deny that it is a distinct and valuable advance, and deserving in this of praise, but we think the preparation might be made even more valuable to the physician and the invalid, and the makers of Bovril would do well to consider if they could not improve upon what they have already done, by increasing that fibrin sediment against which the public are so ignorantly warned."

Analyses of Bovril for Invalids, we have just made, disclose the very gratifying fact that this and more has been done. In point of fact more than we believed could be achieved has been accomplished to make Bovril for Invalids a real invalid meat food. The confidence the medical man can place in it is shown in the following analysis just made for us by a public analyst having the most intimate knowledge of meat extract preparations, and whose reputation is European.

Analysis of Bovril for Invalids :—

	Per cent.
Water	17.41
Total Organic Matters	67.21
„ Mineral „	15.38
	100.00

Matters precipitated by Alcohol :—

		Per cent.	
Containing 5.78 of the total 15.38 of Mineral Matters.	{	Meat Fibre	14.87
		Albumin	7.60
		Albumose	9.56
		Gelatin	8.50
		Peptones	2.61
		Total	43.14

Matters not precipitated by Alcohol :—

	Per cent.
Gelatine soluble in Alcohol ...	0.95
Creatin and Meat Extractives ...	15.79
Mineral Matters ...	9.60
Non-Nitrogenous Extractives ...	13.11
Total Matters not precipitated by Alcohol! ...	39.45

Our previous analysis showed that Bovril for invalids contained a total of 23.87 of nutrient matter. The improved preparation just analysed shows a total nutrient value of 43.14 per cent., which speaks for itself as to the worth of the preparation. The improvement appears to be attained by the addition of albumoses of meat and albumen crystals, the latter coagulating when heated, and, to our mind, improving the flavour. Comparing this improved Bovril for invalids with the highest-priced meat food on the market—Valentine's Meat Juice—if two ounces of that preparation be worth 3s., the same quantity of Bovril would be worth 52s.; and *pro rata* for the other preparations, the analysis of which we have given. But we have said enough to prove the need for a Ministry of Public Health and a censorship of foods. How many invalids know anything of these questions, and how many thousands of victims will sink into their graves starved by so-called meat extracts, essences and juices, because the examination into these substances is left to chance.

INFANT MORTALITY AND INFANT FOODS.

THERE must be a cause for the terrible slaughter of the innocents under one year which, despite all our boasted civilisation, showed in the last twelve months that more than one-fifth of the total deaths were children under one year. If it be the Herod of ignorance that thus exterminates the innocents, it is time a stronger effort was made by all concerned with public health to dispel that ignorance than has been heretofore attempted, for although we have sent the Sanitary Inspector abroad and appointed Medical Officers of Health throughout the land, it must be frankly and humiliatingly owned that the frightful tale of infant death is to-day but little smaller than it was in 1840-41, when, out of a total of 350,101 deaths in England and Wales, 76,328 were children under one year of age. Milk, no doubt, plays a prominent part in this horrible array of sacrificed infants, for, despite sanitary supervision, every day sees milk become more dangerous, for reasons which we shall presently make clear.

Starch poisoning by improper feeding with bread stuffs, etc., is responsible for more deaths than milk is; because, despite warnings again and again received, mothers persist in giving their infants substances actually poisonous for babies—such as bread, biscuit, arrowroot, gruel, cornflour, maizena, rice, sago, potato, etc.

Altogether, when we examine what science, fraud and folly have done for infants, there is little cause for wonder that they should fall so easy a prey to death. The first striking fact that confronts us is the one that the mortality is the most terrible in artificially-fed infants.

In Berlin the death certificates of children under one year must state whether the infants were brought up at the breast or upon artificial foods. In 10,000 deaths it was discovered that three-fourths, or 7,646, were artificially fed.

Minert, of Bavaria, has shown that out of 400 deaths of children from summer diarrhoea that came under his observation, 96 per cent. were nourished artificially, and in England, Hope's investigations disclosed that only 3 per cent. of one thousand deaths were breast-fed infants. To arrive, therefore,

at a true understanding of the question we have to consider, first, what are the artificial foods used for infants, and in how far they are suitable for infant nutrition. We have first that universal substitute for human milk—cows' milk. It is not straining a point to say that a great deal is done to unfit this article as a substitute for human milk. It is only a few weeks since milk from an infected Derbyshire farm scattered disease broadcast in Hornsey, and our issue of a fortnight ago disclosed the following nauseating origin of this food :—“ At St. Helens, Henry Winstanley, of Ravenhead Farm, was summoned for failing to furnish the authorities with the names and addresses of all his customers, as infectious disease had been attributed to milk supplied by him. There was another summons taken out against the defendant, charging him with keeping swine in a cowshed used by him for keeping cows in. The medical officer visited his premises, and found the pigs and cows in the one shippin, contrary to the provisions, of the Milkshops Order. The premises generally were in a filthy and stinking condition, and that, coupled with the notifications, made it clear that in all human probability typhoid fever was being spread by the defendant. Under ordinary circumstances he should have asked the Bench to mark their sense of the very serious character of the offence by imposing the maximum penalty, but since the summons a much heavier penalty had fallen upon the man than the magistrates could have inflicted. He himself was now down with typhoid fever, and his case made eight cases in the borough.”

The practice adopted everywhere by milk-vendors of physicking their customers without the customers' knowledge or consent by the use of the powerful drugs they add as preservatives, raises another very grave question. Scientifically, there is but little known of the effect of these drugs upon the consumer, but the investigations already made point to its being a pernicious one in the case of so delicate an organism as that of an infant of a few months old. From what is known of boracic acid, the preservative chiefly used, three and three-quarters grains per pint are requisite as a milk preservative. The maximum dose of this drug for a child three years of age is six grains. The grave danger of giving an infant only a few days or weeks old milk containing three and three-quarters grains per pint requires no emphasis, and as this is continued for months, it is not difficult to realise that it must act injuriously upon the child.

Dr. Robinson (Dover) recorded last week the following dangerous boracic acid poisoning by milk :—“ Of a household of seven adults five were attacked with severe colic and vomiting, lasting from two to four days, and accompanied, in the worst cases, by suppression of urine. Much prostration and irritability of the stomach persisted for some days. On the day of seizure it was found that some milk which was partaken of by the five victims had been treated with “glacialene” as a preservative. This glacialene was found to contain boracic acid. In addition to this, boracic acid had been added to the milk, with the same object, before delivery. The milk in question, mixed with some blanc-mange, was given to some fowls, and, out of nine, five died; the others showed signs of poisoning, though in a less degree. There were no other circumstances to account for the outbreak. Dr. Robinson dwelt on the necessity of precautions in prescribing this drug, and of greater restrictions in its use as a food preservative.”

There is, further, the very grave question of tuberculosis. Principal Williams, of the New Veterinary College, Edinburgh, has recently stated that his own wide and varied experience has convinced him that tuberculosis is infinitely more prevalent among cattle than it was twenty years ago, and a Royal Commission has just reported on the communicability of this disease by means of milk. How extensively cattle are infected it is impossible to state with reason-

able accuracy, but the Jews, whose rigorous inspection of flesh for human consumption is well known, find 40 per cent. of the oxen they slaughter in London are diseased, and in this percentage tuberculosis plays a prominent part. When, therefore, a Royal Commission says:—
 “No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter,” and investigators like Principal Williams and Professor Wallace discover that tuberculosis amongst animals is increasing alarmingly, it is reasonable to suppose that a considerable part of this terrible infant mortality is due to the ordinary milk of commerce, dosed as it is with powerful drugs and liable to so many infections by the diseases of animals from which it is drawn, by insanitary dairying conditions, and by all the impurities that enter it whilst it is being carried through crowded and dirty streets by the vendor. Tuberculosis might be stamped out as pleuro-pneumonia was if the Government gave compensation to owners of tuberculous cattle, but this objectionable modern practice of drugging every perishable article of food with salicylic, boracic and other drugs cannot be stopped without fresh legislation, and much of the milk sold to the public is thus surreptitiously drugged.

Sir Wm. O. Priestley, M.D., has recently pointed out that the researches of M. Budin and of his assistant, M. Chavane, have shown conclusively that one of the chief difficulties in the artificial feeding of infants is in keeping the milk of the cow or other animal free from contagion of bacilli which are always floating in the atmosphere, and which, when introduced into the digestive organs, produce green motions and diarrhoea. Milk of every kind is found to be an admirable medium for the cultivation of these microbes, and its exposure to the air for even a short time, more especially with a warm temperature, is sufficient to favour their very rapid development. The result of imbibing these organisms, even in small quantity, is that the child is seized with diarrhoea and vomiting, and these unchecked speedily exhaust vitality and extinguish life.

Along with these grave disadvantages to the use of cows' milk, we have the fact that there is a widespread adulteration which is at its worst in the poorer districts of our large cities and towns. The ordinary habit is to add one part water to two parts of milk, and when this is done with milk already skimmed and watered by the dishonest vendor, starvation is the result. With dirty feeding-bottles and those murderous nostrums called soothing-syrups, we need not here deal at length, for education can remove the one, and legislation is urgently needed for the other; but, despite findings by coroners' juries, the traffic in soothing-syrup and teething-powder abominations goes on, and they afford an easy method for many unnatural mothers to send unwanted infants into everlasting sleep. All these facts explain some of the infant mortality, but the main one, we believe, is starch-poisoning. It is well known how difficult it is to induce mothers to adopt scientific teaching in the feeding of their infants, and the substances given to some hapless babes are astonishing. One mother was recently asked what she fed a four-months' infant upon, and replied, “Oh, he has a bit of what we have—a bit of herring, haddock, bacon, steak, potato, bread, and a sup of tea now and again, and, of course, I give him pobbies.” There was scant cause for surprise that the infant had the appearance of being about to enter death's door. It would have been more merciful to have fed him on tin-tacks, as his sufferings would have been of shorter duration. But thousands upon thousands of mothers adopt methods of feeding their babes that are almost as barbarous as the above. Dr. Variot finds the women of France cling as obstinately as do English mothers to the belief that the sooner their babies receive solid food the quicker they will grow, and they are given starchy foods at an age when the salivary and intestinal glands are powerless to saccharise the starchy substances.

Cornflour, sago, arrowroot, etc., are crammed into the unfortunate infants, raising irritations of the mucous membranes and undergoing injurious fermentations. The baby can derive no nourishment from such feeding, and might just as well be fed on cocoanut fibre or cinders. It should be the duty of every doctor to warn mothers that “no farinaceous food, and that includes bread, biscuit, gruel, arrowroot, cornflour, maizena, rice, sago, potato, etc., should under any circumstances be given to a child until it has full dentition unless it has been previously malted.” To meet this objection to promiscuous feeding with injurious foods, a number of Infants' Food, have been devised of varying degrees of merit. As is naturally the case with all articles of food prepared on a large scale, there are found slight differences in their respective constituents when analysed on different occasions, but the differences are of no real importance, nor do they reflect in any way upon the good faith of the various manufacturers, inasmuch as everyone conversant with mixing foodstuffs knows that to mix, for example, 25 per cent. of chicory with 75 of coffee, and ensure every part of the mixture containing those precise percentages is quite impossible. In the case of some of the Infants' Foods, Dr. John Clark made in October, 1893, the following analyses for the Glasgow Health Committee:

	Allen and Hanbury's.	Savory and Moore's.	Benger's Food.	Ridge's Patent Food.	Mellin's Food.
Nitrogenous Compounds	11·96	9·81	9·24	7·96	7·94
Starch, etc.	68·48	74·75	76·36	80·57	...
Sugars	...	4·30	4·25	1·50	...
Maltose and Dextrine	8·98	...	...	...	...
Fat	0·74	1·24	0·95	1·10	0·20
Salts	0·44	0·71	0·94	0·77	3·73
Carbo-hydrates	...	...	...	...	74·95
Water	9·40	9·19	8·26	8·10	13·18
Phosphoric acid in the Salts	0·19	0·12	0·08	0·11	0·55

Remarking on these analyses Dr. Clark says:—

“Benger's Food, in my opinion, consists chiefly of wheaten flour, and it is said to be pancreaticised, or mixed with some pancreatic material which will help to digest the nitrogenous compounds. It is intended to be used along with milk.”

“Savory and Moore's seems to be a mixture of wheaten flour and some kind of malt, which will help to convert the starch into maltose, in which form it is more easily assimilated.”

“Ridge's Patent Food is similar in character to Savory and Moore's.”

“Mellin's Food is an extract of cereals, in which all the starch has been converted into maltose and dextrine. It is for the most part soluble in cold water, and I am of opinion it is a good infants' food, although its appearance is not attractive.”

“Allen and Hanbury's is a malted farinaceous food, similar in character to Savory and Moore's and Ridge's, but I am of opinion it does not contain quite so much malt.”

The nitrogenous or proteid elements in a food rank of the first importance, as nitrogen is essential to every vital process. Dr. Cheadle, a well-known specialist in foods, says deficiency in this element is felt by children very quickly. He further says; “Fat, or the hydrocarbons, are of the very highest importance for the generation of heat and energy, and especially for forming brain and nerve cell, and for the narrow cells. *Special stress should be laid on the proportion of fat. Artificial foods too often are destitute of this vital element.*”

Our own investigations show that unconverted starch is present in some of these preparations, but that may be accidental. Our analysis of these and other foods gave the following results, and in several points—notably in the case of Ridge's Food—did not agree with Dr. Clark's remarks:—

The analyst who investigated the preparations said:—
 "Mellin's Food requires milk, and in the analysis given (by Professor Stutzer, with the preparation) the added milk is taken into account, although the composition of the milk *per se* is not given. Practically the whole of the starch has been converted."

	Allen and Hanbury	Savory and Moore.	Benger's Food.	Ridge's Food.	Mellin's Food.	Neave's Food.	Horlick's Malted Milk.
Water	7.10	4.74	9.03	6.22	4.38	3.09	2.00
Mineral Matter containing Phosphates	0.54	0.71	0.89	0.82	3.63	0.95	4.00
Albuminoids	14.02	12.64	12.53	9.05	5.78	14.15	22.03
Carbohydrates	78.34	81.91	77.65	83.91	86.21	81.81	64.07
Fat	Traces	Traces	Traces	Traces	Traces	Traces	7.90
	100.00	100.00	100.00	100.00	100.00	100.00	100.00

"Savory and Moore's Food requires milk, and is malted as claimed."
 "Allen and Hanbury's is a malted food which requires milk."
 "Neave's Farinaceous Food is an unmalted cereal preparation which requires milk, and is not so easily digested as the malted or pancreatised preparations."
 "Benger's Food requires to be made up with milk, and would prove very suitable for children whose digestive organs are weak."
 "Dr. Ridge's Food does not appear to possess any very high qualifications as a food for infants. It requires milk, and is an unmalted preparation."

"Horlick's Malted Milk is a food which requires no additional milk, and on this account would prove more convenient to use than preparations requiring the use of fresh milk. Its freedom from starch causes it to be a food which is easily digested, and it is malted as claimed."

In examining these foods in the light of either series of analyses there is one fatal defect from the point of view of an ideal infant's food that is common to them all with the exception of Horlick's Malted Milk, *i.e.*, the absence of what Dr. Cheadle calls "that vital element" fat, and herein lies an important danger attending their use as infants' food. They require to be made up with milk, and thus run the risk of the many contaminations, etc., by milk to which we have already referred. Further it depends entirely on the honesty of that most notorious and persistent of all adulterators, the milk vendor, whether the proportion of fat be what it ought to be, which is about four per cent. in average cows' milk. It may be three or even two per cent., according to the honesty of the vendor, but the gravest objection is, that by the medium of this milk, infants using the foods may be dosed with salicylic, boracic, benzoic, etc., or formalin, the latter so strong a poison that the manufacturers in Germany warn their customers against its use in any articles of food or drink. It is both shameful and injurious to health that there is no punishment for this amateur drugging by any ignorant or unscrupulous milk vendor who chooses to experiment as he pleases on his customer's health, and it is as well that the fact should be

recognised and its significance understood. How general is the drugging may be gathered from the statement by Mr. Cassal, F.I.C., that out of 34 samples of milk analysed last quarter for the Kensington Vestry no fewer than 13 contained boric acid.

The problem of infant nutrition is, therefore, one beset with difficulties, for, however well-intentioned the makers of infants' foods may be, those using their preparations are at the mercy of unscrupulous adulterating milk vendors, and it is a grave scandal that the law should for so long have permitted such a state of things

to exist. Any attempt to give us that vital element, the fat in an infant's food, in a form free from any contamination or noxious drugging is, therefore, important, and as our analyses show that Horlick's Malted Milk is the only one containing fat it is worth serious consideration. The *Lancet* some time ago published the following comparative analyses of Horlick's Malted Milk and human milk, assuming that human milk were dried:—

	Water.	Sugar.	Dextrin.	Fat.	Albuminoids.
Malted Milk (Company Analysis) ..	3.27%	46.63%	17.16%	6.78%	22.26%
Malted Milk (The <i>Lancet</i> Analysis) ..	2.21%	63.59% (and dextrin)	—	8.40%	21.85%
Human Milk..	4.00%	46.78%	—	23.39%	23.39%

Our contemporary adds:—

"The analysis made in our laboratory substantially confirms this, and it will be seen that chemically the composition of malted milk resembles that of human milk (for which it is offered as a substitute), supposing all but 4 per cent. of water had been removed. Important differences, however, consist in the presence in the prepared milk of a less quantity of fat; while, of course, the dextrine owes its origin entirely to the malt. The flavour of malted milk is excellent, and it will be interesting to watch the results accruing from the practical use of this product, which is likely enough to prove an important contribution to food supply."

Added to the advantages of making infection or unknown drugging of the infant impossible, this preparation contains muscle, flesh and bone-forming material in the proper proportions and the most simple form. Cows' milk fresh, and produced all under sanitary supervision, is combined with wheat and barley, the caseine in the milk forming a light flocculent curd, which renders it more easy of digestion than ordinary cows'

milk, and the starch in the wheat and barley being entirely converted or predigested, so that the infant, with its imperfectly developed salivary and pancreatic glands, can derive full nutrition from the food taken. This food requires no peptonising and no cooking. Compared with the infants' food prepared on old-fashioned lines it has two or three times more nutritive value than the best of its rivals, from an analytical point of view, without taking into account that it possesses what the old-fashioned foods do not contain—a fair percentage of fat.

The process of manufacture and its composition give it a greatly increased assimilability and nutritive value over the ordinary infants' foods. There has been far too little investigation into the question of the relative nutrient values of various infants' foods when given to average infants. Dr. Max Einhorn, Physician to the German Dispensary, New York, has contributed something to the knowledge of this subject by a series of experiments made in the children's ward of Randall's Island Hospital, New York, and published in the *New York Medical Journal*, of July 20, 1889. A number of infants fed upon artificial foods were selected, all of them healthy as regarded their stomachs. Several food materials were given the infants on different days, and examined to discover the amount undigested. During the days of examination the infants were given the usual food of the institution, but three hours after the last feeding, usually about five or six a.m., the infants were fed with the various foods that were to be investigated, and examinations were afterwards made with the stomach tube. These investigations showed that Horlick's Malted Milk was more rapidly digested than any of the tested foods.

It must be conceded, in fairness to the other foods we have examined, that when they were first offered as infant foods salicylic, benzoic, boracic, and formalin villainies in milk for infants were not known. Professor Odling had not given to mankind his curse of food preservatives, and tuberculosis amongst dairy cows had not assumed its present alarming proportions. Helpless infants might be fed without the danger of being drugged to death. What this drugging means anyone who is curious can tell by taking up a copy of *The Lancet*, or the *British Medical Journal*, which he will find swarms with peptonised this and pancreatised that. Unless something be done, and that promptly, to make this dangerous drugging by the milk vendor, the wine merchant, the beer seller, the buttermilk dealer, butcher, and everyone who supplies food for young or old, a criminal offence, another twenty years will see more of the peptonising and pancreatising, that is to-day so rapidly extending itself, and a healthy stomach performing its functions properly and thoroughly, will be as rare as a four-leaved shamrock. We may sanitize and sanitize and go on sanitating. but whilst we permit these murderous practices we shall see little diminution in the slaughter of the innocents.

DISINFECTANTS.

For the sake of a guinea occasionally saved instead of being expended in analysis, London and country Vestries, Town Councils, and Local Boards lose many guineas, and are supplied with disinfectants having two or three or so per cent. of carbolic instead of the ten or more per cent. contracted for. If it were only for this crime, for somehow or other the bulk of the dealers in carbolic cannot be got to honestly supply the strength of powder or fluid they contract to supply—carbolic deserves to be scheduled as a poison. As Dickens said of bird fancying, it corrupts nearly all who have any dealings in it. Holborn, Islington, Camberwell—amongst other victims—can tell their tale of woe, *re* carbolic. It has been recently denied by some investigators that carbolic has any valuable disinfectant properties, so perhaps the vendors

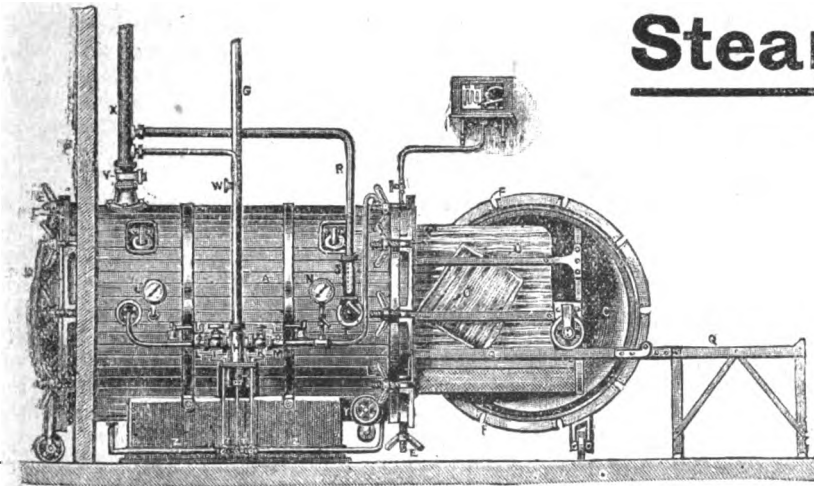
of the spurious supplies believe their frauds do no real harm, but this happy-go-lucky purchasing of disinfectants has its very dangerous side. A disinfectant that does not do the work thoroughly which it is intended to perform is worse than none at all, for it deceives those responsible for disinfecting in cases of dangerous diseases. Until the publication recently of Dr. S. Rideal's book on "Disinfection and Disinfectants," there has been no systematic attempt in any work in our language to give the composition of disinfectants. Those interested in the subject can procure the work from Charles Griffin and Co., Limited, Exeter-street, Strand, price 12s. 6d., and they will find it in many respects an excellent manual on this important subject. In a few instances Dr. Rideal has used our thunder without acknowledging its source, as, for example, on page 149, where Dr. Rideal says: "A striking example of the absolute necessity for carefully examining all such powders before use, is furnished by the recent exposure of the Victoria Carbolic Disinfectant Powder. Dr. Barwise found in an epidemic of typhoid at South Wingfield, in 1892, that excreta well mixed with the powder and buried, polluted the drainage so that the infection was carried to a large number of people lower down the hill. Although the powder was stated to contain 15 per cent. of carbolic acid an analysis showed that it had barely any odour of carbolic acid, and only the merest trace of tar oil." The analysis referred to was made by us, and the swindle that caused the deaths of five persons was exposed in FOOD AND SANITATION, but we will forgive Dr. Rideal for omitting to give us credit for our efforts to prevent the sale of rubbish as disinfectants, and take some slices of his book to answer a few questions recently put to us, which will save us some trouble and may help to make Dr. Rideal's valuable book more widely known than it is. One correspondent wishes to know the value of Burnett's Fluid, Condy's, Ferric Chloride, Calvert's Carbolic, McDougall's, Izal, etc. Burnett's Fluid is made by allowing chloride of zinc to deliquesce to a syrup, then adding water, if necessary, till the strength is 46 to 50 per cent. of zinc chloride. It is highly poisonous, but Koch says that zinc chloride does not act as a germicide, and that even a 5 per cent. solution was utterly useless (pp. 109 and 110). As to Condy's Fluid, Dr. Rideal is of the usual opinion that it is practically permanganate (p. 310). Ferric Chloride is a feeble oxidising agent, absorbing ammonia and sulphuretted hydrogen. It checks fermentation and the growth of bacteria without killing them, unless it is concentrated (p. 121). Bleaching powder, or chloride of lime, when good, contains 24 parts of available chlorine, and is best used in the proportion of one part to 10 or 12 parts of water. It should be freshly prepared and kept from light and air, as when old it becomes damp and of inferior value (p. 64). Its charnel-house smell is very offensive to many persons, and it is contended that its continued use in hospitals leads to lung diseases in the patients and attendants. Koch obtained unsatisfactory results with it, although it is regarded by some as the most powerful of disinfectants. Calvert's Carbolic Powder is guaranteed to contain 15 per cent. of carbolic and cresylic acids. It is prepared by adding crude carbolic acid to the residue left from the manufacture of aluminium sulphate from shale or kaolin (p. 154). Of McDougall's Powder Dr. Rideal says it is prepared by adding crude carbolic acid to impure sulphate of lime, obtained by passing sulphurous acid over ignited limestone. Professor Corfield remarks: "Carbolates of lime and magnesia and sulphites, such as McDougall's Powders, merely assist in delaying decomposition, but do not prevent it ultimately" (p. 154). Of Izal Dr. Rideal says that compared with carbolic it has not the caustic action on the skin that that antiseptic has, and that it remains on the part requiring disinfecting once it has been there deposited. Heat, instead of deteriorating it, only tends to concentrate it, and it mixes readily and well with water in all proportions. Dr.

THE EQUIFEX DISINFECTION APPLIANCES.

(GENESTE-HERSCHER, &c., PATENTS.)

For the Disinfection of Wearing Apparel, Bedding, Furniture, &c.

Steam Stoves.



The only stoves complying with the recommendations of the International Sanitary Congress (Budapesth, 1894).

Only Medal, Sanitary Institute Congress, Liverpool, 1893.

Only Highest Award wherever exhibited.

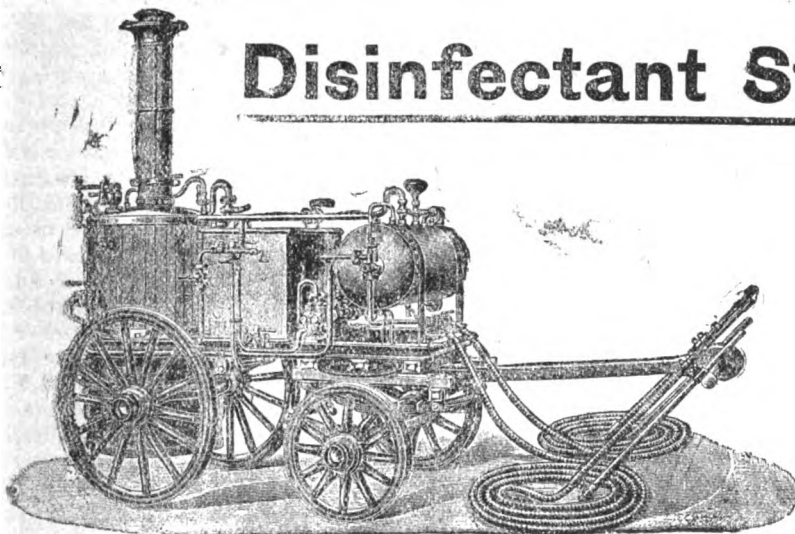
Adopted at the Royal Victoria Hospital, Netley.



Sprayers.

Cost a fraction of the time and expense required in the use of SO_2 , render disturbance of inmates unnecessary, and disinfect with certainty. Exclusively used by the Municipality of Paris and elsewhere.

Disinfectant Steam Scraper.



The cheapest, quickest, and most efficient method of cleaning and disinfecting cattle markets, trucks, vans, etc.

Particulars of Other Appliances on Application.

SOLE LICENSEES AND MAKERS—

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Klein, who bacteriologically investigated Izal, reported that it had "a quite remarkable bactericidal effect." "An exposure for five minutes to Izal, in the strength of 1 in 200, completely destroys the vitality of the microbes of diphtheria, typhoid, fowl cholera, swine fever, glanders, cholera, suppuration, erysipelas, scarlatina, and other non-sporing pathogenic and non-pathogenic species." As to Spores, Dr. Klein found it also resulted favourably. Dr. Bruce Clarke found it answered admirably in surgery, and Dr. Rideal says that Izal seems, in a strength of 1 in 200, to be a disinfectant, and in 1 in 1,000 to be more antiseptic than phenol (p. 170).

Dr. Rideal is not so interesting on disinfecting.

The practice of disinfection by heat has advanced in this country during the last year a good deal more than is indicated by Dr. Rideal's views on the subject. Dr. Rideal's information is, we should say, for the most part, second-hand. It is becoming more and more a matter of orthodox opinion that the only reliable means of heat disinfection is by the use of saturated steam, of which the best example is the well-known Equifex stove, such as has recently been adopted for Netley hospital. Want of means has reduced many of the smaller local authorities to disinfection by steam at pressures (*i.e.* temperatures), sufficient for many contagia, but not reliable for all. Such disinfection is infinitely more valuable than the discredited processes of hot air or fumigation. The condition of its being applicable is that the pressure should be limited without the use of any mechanical contrivances. Experience with foreign low pressure stoves recently introduced has shown the liability of such contrivances to derangement; and if a low pressure stove is to be used, it ought to be as independent of mechanical contrivances as the Equifex pattern for such pressures, which regulates its pressure simply by a water seal. The use of some pressure is necessary, not only for the enhanced temperature which it gives, but also to enable an automatic record of the extent to which disinfection is carried to be presented daily to the responsible officer. In the disinfection of rooms the steadily increasing use of the spray process, by which a disinfectant of known value can be positively applied to the surfaces and injected into the crevices likely to harbour germs, marks a great improvement over the inefficient placebo of sulphur fumigation. Not only does it give a reliable disinfection in place of an imperfect one, but it enables the whole process to be carried out in an hour or two, without ejecting tenants from their premises, and incurring the expense of shelters to receive them.

Our readers will see, therefore, that Dr. Rideal's book meets nearly every demand as a work of reference, and is a very rich mine of information on the subject of disinfection and disinfectants, and it should be on the bookshelf of every public health office in the Kingdom.

Professor Sheridan Délépine, professor of pathology, Victoria University, has more recently investigated Izal on types of the most important forms of pathogenic bacteria found in ordinary practice. He conducted, in conjunction with Dr. F. Coutts, over one hundred and fifteen experiments with the four bacteria bacillus tuberculosis (*hominis*), the bacillus coli communis, the staphylococcus pyrogenes aureus, and the bacillus anthracis in the sporing stage. His conclusions are as follows:—

"Among the most remarkable features of this compound are its comparative insolubility and non-volatility at the ordinary temperature, properties which it seems difficult to associate with an active disinfectant, but which numerous experiments have proved not to be incompatible in this case. If we add to these the facts that Izal can be freely administered internally, used over extensive wounds, or injected under the skin without bad effects, and, finally, that it does not damage surgical instruments, there are sufficient grounds to justify the impression that Izal is a substance of considerable scientific and practical interest.

"Izal mixed with ten parts of water will disinfect in 45 minutes dried tuberculous sputum or other tuberculous matter, and fresh tuberculous products of great virulence when mixed with about an equal quantity of Izal of the same strength as above, and allowed to dry at the ordinary temperature for twelve hours, are also completely disinfected.

"Izal diluted with 200 parts of water is a safe germicide for micro-organisms as resistant or less resistant than the bacillus coli communis.

"Izal diluted with 100 parts of water is a reliable antiseptic for the dressing of surgical wounds, made with the usual antiseptic or aseptic precautions.

"As an antiseptic it is more powerful than carbolic acid, and, if it be remembered that it causes very little irritation of living tissues, that in moderate doses it is not poisonous, and that, practically speaking, it is not volatile, there can be little doubt as to the immense advantages which Izal possesses over carbolic acid in many directions."

Our correspondent need not therefore have any doubts as to the value of Izal. It is being now used for injecting into a tuberculous lung of a young lady of 18 years of age by a Richmond practitioner, who states it has shown very beneficial effects, and sores and ulcers have yielded rapidly to its treatment in several cases recently brought to our knowledge. The Midland and the Great Northern Railway Companies are using in their stables a preparation of Izal named Noxona for antiseptic dressings, etc., respecting which the companies' veterinary surgeon report as follows:—

"Midland Railway,
"Derby,

"November 13, 1895.

"Dear Sir,—I beg to inform you that after having given Veterinary Noxona a careful trial, I found it to be an exceedingly good disinfectant, and beneficial also in cases of skin disease.

"It is also valuable as an antiseptic dressing. I may say, with regard to the latter, that one of our horses in London, which met with a severe injury last May through being run into by a vehicle, causing a very deep and lacerated wound, was treated by Mr. Rogerson, the assistant veterinary surgeon, who is in charge of our London stock.

"The wound was daily syringed with the Noxona diluted to its proper strength, and then externally covered with a sheet of linen saturated with the fluid.

"Under this treatment for several weeks, I am pleased to say, the animal recovered, and was able to resume work about the end of September. Mr. Rogerson also states that, as an antiseptic, his experience is the same as mine.

"Yours truly

"(Signed) JOHN TAYLOR, V.S."

THE AMERICAN OIL GANG, AND WHY THEY ROAST ALIVE HUNDREDS OF ENGLISH PEOPLE YEARLY.

CORONERS' juries who know nothing of the question, and interested "expert" witnesses who know more than they care to reveal, have been very successful of late in hocussing the public into the belief that the roasting alive of so many hundreds of people yearly by oil explosions is due to common, cheap lamps. More than three hundred people are burnt alive annually, but their deaths are not due to faulty lamps. They are victims to a gang of American oil monopolists who control the bulk of the American oil supply, and who have hesitated at no crime, from bribery to arson and murder, to secure their millions of dollars, as we shall presently clearly prove from United States Government documents. Nearly one fire out of every five in London, and one in eight in Liverpool, is caused by oils, as the principal insurance companies well know. The insurance companies had experiments made a

PREVENTS TYPHOID FEVER, CHOLERA,

And all Water-borne Diseases.

IS THE ONLY FILTER WHICH DOES SO.

Some of the authorities on which the above statements are made are quoted in the margin.

A precis of the evidence will be forwarded on application.

Professor Sir HENRY E. ROSCOE, M.P., Ph.D., F.R.S., says:—"Ordinary filters are no good at all. The only filter that protects the water drinker from the germs is the Pasteur Filter."

Dr. G. SIMS WOODHEAD, M.D., F.R.S.F., Director of the Laboratories of the Royal College of Physicians and Surgeons, reports to the British Medical Association:—"The Pasteur Filter does prevent the communication of water-borne disease. Almost all ordinary filters materially increase the risk."

Dr. H. H. JOHNSTON, D.Sc., M.D., C.M., F.L.S., from experiments made in the Public Health Laboratory of the University of Edinburgh, says:—"The Pasteur Filter is the best and the only one on which reliance can be placed."

Dr. STEVENSON, M.D., F.R.C.P., Official Analyst to the Home Office, says:—"The Pasteur is the best of all domestic filters. It is very simple and most efficacious."

The *Lancet* says:—"The Pasteur Filter is a real preventative of water-borne disease."

The *British Medical Journal* says:—"Our report has demonstrated the hollow worthlessness of most of the popular filters in use. The present state of things is a public danger, and has to answer for the loss of many lives. The demonstrated standard of efficient filtration is the Pasteur Filter, and its use is effectual in preventing epidemics of Typhoid Fever, Cholera, Diarrhoea, &c."

The *Hospital* says—"The only form of domestic filter which the profession can recommend."

The *Medical Times* says:—"The Pasteur Filter, and no other, affords reliable protection against water-borne disease."

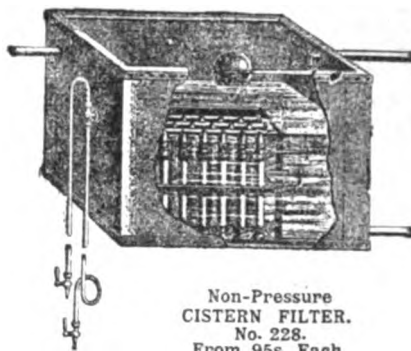
The practical result of the use of these filters in 245,000 quarters of the French Army is summarised by two Ministers of War in reports to the President of the Republic.

(a) M. DE FREYCINET (1892) says:—"Wherever Pasteur Filters have been applied, Typhoid Fever has disappeared. Wherever an epidemic has occurred, it has been in barracks where Pasteur Filters were not used."

(b) General ZURLINDEN (1895) confirms these conclusions, and gives figures in illustration.



No. 21 and 216a, same as 215, but with Reservoir, From 31s. 6d. Each.



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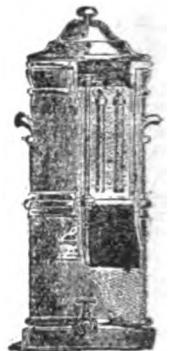
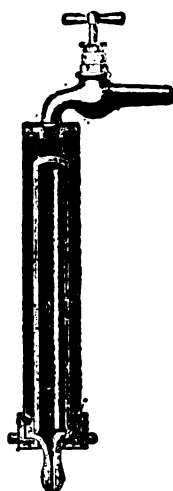


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Made to work with or without Pressure, and to give any required Output.

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little over a year ago with American and other oils, when the American oils were found the most explosive examined. Some flashed as low as 69 degrees. Lighted matches thrown into various oils proved that American oil heated to 88 degrees blazed immediately, but thrown into Scotch oil the matches were extinguished. How did this happen? For the simple reason that Scotch oil is sold at no lower than the hundred degrees test. But our Government allows American oil to be sold at 73 degrees test, because Professor Abel reported that 73 degrees was safe. Let our readers remember the one fact that in Glasgow, where the oil used is mostly Scotch of a hundred degrees flash point, the fires by oil are 17 per cent.—*i.e.*, less than one in two hundred—whilst in London, where the murderous American oil is used, fires by oil come out at over 19 per cent.—*about forty times as many*. We wish we could brand on the memory of every man and woman who reads this article the following remarks by an American writer, Henry D. Lloyd, in "Wealth v. Commonwealth," published by Harper Bros., New York, this year.

Mr. Lloyd says: "*Out of every hundred barrels of various kinds of products from the distillation of petroleum forty are of an illuminating oil not good enough to be burned in this country (America). It must be sold in Europe, or not sold at all.*" It is "not good enough for America," so we allow it to pursue its devastating course in England, causing fires, raising insurance premiums, and roasting alive hundreds of our men, women and children yearly. The Testimony Trusts Congress, 1888, pp. 818 to 873, record how the oil gang bribed an employé of an oil distillery at Buffalo antagonistic to them to cause an explosion. This employé weighted down the safety valve with heavy iron and packed it with plaster of paris, and then ordered the fireman to

put coal into it until the fire-box was cherry-red. When this was accomplished he went away from the works, leaving the unsuspecting victims of this infernal work to explosion and roasting alive. Fortunately, the dastardly work was not well enough done, and the safety valve lifted itself, for, despite weights and plaster, the unusual pressure blew it open, and it did not keep the gases in to explode as had been planned by the American Oil gang. For this villainy some members of the gang were put upon their trial and convicted, but they were powerful enough to bribe the law, and, although the jury on May 18, 1887, brought in a verdict "guilty, as charged in the indictment," an accommodating judge fined the criminals *two hundred and fifty dollars each*. He got his reward later in preference to a supreme judicial position in America. The *New York World* said of the sentence: "It is calculated to make men, of more boldness than morals, blow up factories." We commend these facts to the attention of Lord Dunraven, as it may interest him to know them, and give him cause for thankfulness that he even got his yacht home again.

When these gentlemen were not organising such means of making competition impossible, they had persons employed cutting or plugging the oil pipe lines of the honourable men who would not join their combination. This sort of thing is not unique on the part of American millionaires. It is what they call "smart," as the records of the American Whisky Trust affords evidence. Every important distillery in the Northern States, save two, were in the Trust, and the larger of the two was in Chicago. These two would not join the Trust, so on Feb. 3, 1888, the Trust had a private meeting. In April following, the Chicago distillery caught a spy of the Trust in their works who made a confession. In Sept. it was discovered that the valve of a vat in the

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THE "EXCEL" STERILIZED MILK CO., LTD.,

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The IMPERIAL BOARD of HEALTH of GERMANY have pronounced this process to be the only one known to them which can be safely recommended.

THEY FURTHER STATE IN THEIR REPORT (PAGE 70):—

"For the production of Sterilized Milk on a large scale, this process was found to meet every requirement and to be absolutely safe."

Dr. A. WYNTER BLYTH

(Medical Officer of Health and Analyst for St. Marylebone), several years ago publicly made the suggestion that the solution of the problem of an absolutely safe milk supply was sterilization on a large scale.

OPINION OF PROFESSOR RAOUL PICTET:—

"It is certain that all microbes capable of producing disease are killed in this process. Milk sterilized by this process will allow of being exported and kept in stock for a considerable period if the temperature is kept low."



"EXCEL" MILK is pure fresh English Milk subjected to heat, under pressure, and bottled in vacuo by a Patented Process which is extensively applied in Switzerland and Germany and France.

SPECIALLY RECOMMENDED
FOR THE USE OF INVALIDS
AND INFANTS.

NO SUGAR IS ADDED.
NO CREAM IS
ABSTRACTED.
NO CHEMICALS ARE
USED.

PURE COW'S MILK, PURE CREAM, PURE "SEPARATED"
MILK from Selected English Dairies.

Sold by, and obtainable from, the leading Dairymen, Stores, Grocers, and
Provision Dealers, etc., throughout the Kingdom.

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distillery had been tampered with in such a way that an explosion would have occurred had it not been found out in time. The owners even after that attempt refused an offer of over £200,000 from the Trust for their works. Three months later the distillery was exploded by dynamite, one dynamite package, which had failed to explode, though the fuse had been lighted, being found by the Chicago police. In Feb., 1891, the secretary of this Trust of American gentlemen was arrested by the United States' authorities for attempting to bribe a Government gauger to blow up a distillery that would not join the swindle. If the explosion had been carried out 150 men would have been destroyed. The gauger was offered 25,000 dollars for the job, and straightway told the Government officials of the plot. By his superiors' instructions he went so far as to receive from the secretary the bomb for the infernal work to place in the distillery, to which in his official position he had access. He was told he would have ample time to get away, but on being examined by the Government authorities it was disclosed in congress that even the gauger's death had been planned, as the bomb was made to explode instantaneously. But the power and money of the Trust was so enormous that although their secretary's trial began, it lapsed. These are but a hundredth part of the infamous practices for which Mr. H. D. Lloyd, in the work we have quoted, gives the name and date of every Congress paper and court procedure proving their accuracy. The Oil gang are many of them Church elders, but they can vary prayer with arson or dynamite, ruin their thousands, and cause the roasting alive yearly of hundreds of persons in this country, and our Parliament has no time to make the crime impossible. We have shown cause sufficient for the question we ask, "Why should England be the dumping-ground for murderous refuse oils which are not permitted to be sold in America?" It is one we ask particularly of every member of both Houses of our Legislature, because they have the power to stop forthwith these American oil atrocities.

JAM SATIS.

THE correct thing now is to advise the farmer to grow fruit, because what we import averages about £4,500,000 per year, but those who give the advice may be doing the farmer more harm than good. Mr. Gladstone's rosy imagination could picture enormous fortunes in jam, but the late prolific season saw tons of fruit sold at practically less than the cost of gathering. The general public, however, reason very little, and there is a breezy bigness about such a sum as £4,500,000 paid for foreign fruit. We doubt if, despite preferential railway rates, the last fruit season profited foreign growers much, but it is certain that the abundant season greatly benefits jam consumers, for jam was surely never so cheap as it is at present. The average man or woman who sees a 7lb. jar of jam marked below 1s. retail price, and roughly calculates the cost of fruit, sugar, jar, and labour, and the fact that the retailer must make a profit on its sale, can realise how cheap the fruit itself must have been, and see that its culture does not present so rosy a future for English agriculturists as some enthusiasts pretend. If the average person knows little about the question, the belief usually suggests itself that the substance the jar contains is neither pure nor wholesome. It is, however, in the main, excellent in quality, and made from really fine fruit. There is another aspect of that question of the extension of fruit growing to which the *St. James's Gazette* gives prominence.

It says:—

"How much are we English prepared to stand in the name of Free Trade? Last June we were able to give timely notice of an intention certainly then entertained by the Belgian Government to subsidise Belgian agriculturists in sending fruit and vegetables to the

English market. The aid of the £50,000 a year for three years, which the Belgian Government was prepared to lose, would, they hoped, enable Belgian growers to get a firm footing in England by underselling English producers, and so knocking them out of the market."

But with all this, some of the largest jam and pickle makers use almost entirely English fruit and vegetables. Some weeks ago a correspondent wrote us saying:—

"I have read your article of Sept. 14 respecting the doctoring of cheap pickles, and can certify to the truth of it, as I have had to leave off business because I could not compete with firms who only deal in refuse. Should you want an article on the filthy muck that does duty as pickles, I can give you some insight that I have had in a thirty years' experience." What we write we prefer should be from our own investigations. Two years ago we wrote *re* cheap jams, and we asked certain jam, pickle, etc., manufacturers if they had any objection to allowing us to see their processes of manufacture. Messrs. James Keiller and Sons sent us a curt refusal. Messrs. E. and T. Pink said they would be pleased if we would examine their factory from floor to ceiling. We, therefore, decided to see Messrs. E. and T. Pink's place, but we thought we would rather examine the articles first from our own point of view. We did so to a certain extent two years ago and satisfied ourselves that jam and pickles could be cheap, and pure, and wholesome. Seeing the *St. James's Gazette* paragraph about the evil designs of Belgium, we asked Mr. Thomas Pink the other day how much sense lay in the fear that foreign fruit would permeate every pot of jam produced in England. Contrary to our expectations, we found Mr. Pink a rabid Englishman. "Not a particle of foreign fruit for me. I make my money in England, and the least I can do is to buy English fruit and employ English labour." To the next question Mr. Pink's reply was equally a staggerer. We asked how much fruit he used for jam. He answered in a very off-hand manner, "About 5,000 tons each season, the bulk of which is grown in Kent." Then we thought we had a chance of cornering Mr. Pink, so we asked him how he could possibly deal with such an enormous amount of fruit. But he was equal to us here, and said, "I don't believe in spasmodic work; my aim is to find employment for as many as possible all the year round. I have appliances for sugaring 80 tons of jam per day but I get 120 or more tons of fruit daily. Supposing all the processes were gone through of boiling, bottling, labelling, etc., that fruit, there would be a rush of extra workers for the season, without the opportunity of regular employment during off seasons. The extra fruit is pulped and put into stone bottles after boiling for some three hours. "I have a quarter of a mile of basement crammed with pulp. I use no antiseptics—if a jar goes wrong it must not be used—and by thus keeping a supply of pulp I am able to have jam-making going on regularly."

The same far-sighted principles govern every branch of the business. Hundreds of workers were busy making candied peel, and boxes in which to pack it. The syrup that splashed from dipping pans on to the floor was summarily disposed of by an army of sanitary floor-cleaning experts, who go from floor to floor of the enormous factory and do nothing, year in, year out, but wash. We saw pickles, and the methods of packing them, and the vegetables were undeniably good. Confectionery, groceries of every kind, brushes, corn-chandlery, and a whole universal providery, are to be found in the many acres Messrs. Pink's works cover. But of all the things that pleased us most was one that showed Mr. Pink recognised that workpeople are more than "hands"; that they are not "Josiah Bounderbyied." A separate building in the works had rows and rows of clean tables and chairs; hundreds of lockers, each with its separate key, for the workers to keep food in, cooking stoves, food-warmers, etc.; and it, like the works, was

STOWER'S LIME JUICE

Best,
Strongest,
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As supplied to the Royal Household, both Houses of Parliament, and all the principal Hospitals. Samples post free to the Medical Profession.

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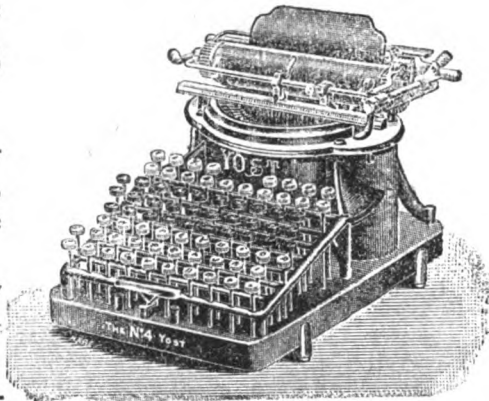
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TEA (Pure Blends).

A—1s. 6d. lb.; B—2s. lb.; C—2s. 6d. lb.; D—3s. lb.; E—4s. lb.

PURE CHINA. HT (1) 2s. lb. HT (2) 2s. 6d. lb.

Packed in ½lb Bags, 1lb., 2lb., 3lb. and 5lb. Tins; in Boxes 10lbs. and 20lbs.; Half Chests 50lbs. and Chests 100lbs.

See that all Articles are marked “Kurruwa,” and if there is no Agent near please write direct to:—

THE “KURRUWA,” ASSOCIATION, 2 and 3, IDOL LANE, LONDON, E.C.

DELICIOUS SOLUBLE COCOA.

Prepared and manufactured in England on the popular Dutch principle.

Packets—6d. Tins—½lb. 8d., ¾lb. 1s. 4d., 1lb. 2s. 8d.

FINEST CHOCOLATE ALMONDS, ½lb. boxes 6d. and ¾lb. boxes 1s.

spick-and-span. And so, being unable to find a sanitary defect, we came away.

It requires some brains to control such an enormous business, and Mr. Pink seems to have them. He apparently makes no notes of anything, but he forgets nothing. His sort of memory is very extraordinary. Magliabechi and Bidder were types of this kind of abnormal mental reservoir. In the jam season some 1,900 persons are employed. It is organisation of labour, absence of waste, and business acumen that enables Pinks' to send out pure, healthy jams and pickles at the absurdly low prices we see them ticketed. The small maker cannot buy his fruit by the thousand tons, nor his bottles and jars by the million; he cannot save intermediate profits by making his own boxes, etc., and the consequence is that he has no chance of competing, unless he adopts the practices to which our correspondent calls attention. It is a question of the survival of the fittest, and the public benefit by the gradual extinction of the hole-and-corner firms who use unsound fruit, vegetables and doctored materials.

POINTS.

KURRUWA TEA.

That the rough, astringent Ceylon teas have rapidly grown in public favour must be admitted, but they do not please a tea expert. The largest dealer in these teas once remarked: "I sell Ceylon tea, but I do not drink it." Nor does any one who knows what "bouquet" in tea means, and has a palate for the fine shades. Sir Andrew Clark, speaking of tea at the London Hospital, said: "If you wish to have, either for yourself or your patients, tea which will refresh, get pure China tea." The Kurruwa Tea Co., of Idol-lane, sell what they guarantee to be pure China tea. We have tasted it, and find it delightful in fragrance and flavour.

COLOUR THERAPEUTICS?

"A writer in one of the semi-scientific papers has been discoursing pleasantly on the relation between health and colour. Whistler's yellow room, we are told, may have been artistic, but it could not have been healthy. Yellows are best suited for halls and vestibules, but should not be used extensively in the dwelling. Being non-absorbents of light, and acting as strong reflectors, these colours will be particularly trying to weak eyes, besides affecting the brain and spirits, and creating a distinct disturbance of the nervous organism. On the other hand, we are told, buff and creams are recommended for the nursery and children's sleeping rooms, because of their tonic qualities. They are better than white, which is apt to disturb the young optic nerves by its brilliancy, and are calculated to impart a cheerful but not too boisterous temperament as well as a good complexion to the youngsters. For the library or workroom there is no colour like coffee. Coffee, in fact, is the most soothing thing in the colour world, it seems. It induces a most pleasant nervine feeling, such as nothing else does; it conduces to habits of speculative thought; it produces a philosophical calm, and it is eminently successful as a mild incentive to literary efforts. Indeed, there seems to be some delicate and abstruse connection between coffee as a beverage and coffee as a colour for domestic decoration. The coolest of all colours is red—not the flaring, glaring red, but the dull Pompeian red and terra cotta. These are cool because of their peculiarly absorbent qualities. It is almost impossible to light or warm them, and while the cool white room of the Wordsworthian poem is all very nice to read about, and does at first sight impress one as being such, it does not compare in coolness with one in dull red. It is possible, however, that a terra cotta town would be considerably cooler than a whitewashed one. If so,

the old Pompeians were right when they cooled off their atria and patios by painting the town red. The only other colour which approaches Pompeian red for coolness is dark green, but it has been found to have so depressing a mental effect on most people that it is very sparingly used."

So says the *Paint, Oil, and Drug Review*, but how much of the above is justified by common-sense and considerations of health? We are not amongst those who regard Whistler's yellow room any more than his painting as artistic, although we are prepared to admit its advertising impertinence, but in his flippant vanity Whistler nearly got a sensible idea. The value of light as a disinfectant has of late years become more and more recognised. Esmarch showed it has, however, only a surface action, and the darker the material on which it acts the more feeble is its disinfectant power. The Dutch, in their houses take care to use the lightest of papers and paints on their walls and doors, for they know that the lighter the paper or paint the greater will be the light in their rooms. Everyone knows that when the walls of a room are papered with a light paper it looks much more cheerful, but we hardly realise the great difference between dark and light papering. Suppose the room is covered with black cloth and requires 100 candles to give it a certain degree of light. If you take away the black cloth, and paper the room with dark brown paper, 87 candles give the same amount of light. With blue paper 72 candles will do, with fresh yellow paint 60 candles give as much light, and with clean deal board walls 50 candles are sufficient. But if the room be painted in white, 15 candles make it as light as 87 candles with the dark brown surroundings. The conclusion is evident. Not only is it bad for the eyes to have a sudden contrast of dark and light, but it is also much more expensive to light 12 candles where two or three would be sufficient. Terra-cotta, Pompeian red, and dark green are simply insanitary atrocities. But there will always be some poseur to talk about "repose" and the like, even if he does not happen to know anything about it.

THE VALUE OF A "SCIENCE SIFTINGS" CERTIFICATE OF MERIT.

Since Balzac's famous "Ho! Ho! beard of flies' legs," we have seen nothing to equal the following, which appeared in *Science Siftings* on November 16:—

"A correspondent informs us that at Arcola, Ill., a singular case of poisoning occurred a few days ago. Daniel Miller, aged 60 years, was eating supper, and accidentally swallowed a fly that had been on a fly-paper. He lived about three hours afterwards."

Readers may rub their eyes and wonder how such an item could be published. We don't know. It is enough that it was. Carlyle observed that the greatest fool must exist somewhere. We do not know what he would have observed were he alive and confronted with the editor who printed in all seriousness the paragraph we quote. But there may exist somewhere some person with so microscopic a cerebrum and cerebellum that he or she would believe such a thing possible. Well, the Germans are fond of curious investigations, and Otto thought it worth his while to record in the *Ausmittlung der Gifte* his investigations made to determine if arsenic was present in the cracks of a rusty stove that, six months previously, had a bottle of arsenous acid spilled over it. A caustic contributor to the *Bulletin of Pharmacy* took the trouble to test flies on arsenic. He says:—"One single dead fly, gathered from a poisoned fly-paper on which he had departed from this world, was inserted in a proper state of decomposition (by means of $KClO_3$ and HCl), into a Gutzeit-Klein's apparatus for the detection of arsenic, previously examined as to its efficiency to detect 0.00005 ($\frac{1}{2000}$ milligramme) of arsenous acid. No arsenic reaction was obtained. Five dead flies were taken, with the same negative results. The fly-paper itself was verified to be arsenical." But

A
DELICIOUS
FAT
FOOD.

Maltine

INCREASES
WEIGHT,
STRENGTH,
AND
APPETITE.

WITH
COD LIVER OIL.

This is, in the opinion of many authorities, by far the most palatable form of Cod Liver Oil. "Maltine" with Cod Liver Oil contains a satisfactory proportion of the purest Cod Liver Oil, rendered palatable and easy of assimilation by means of a special mechanical process of incorporating the Oil with the "Maltine."

THE BRITISH MEDICAL JOURNAL states: "We can recommend it on the ground of its perfect admixture, the ease with which it is assimilated, the good quality of the Cod Liver Oil, and the value in diastase of the 'Maltine.'"

Dr. A. B. GRIFFITHS reports: "'Maltine' with Cod Liver Oil contains the leucomaines or active principles of Cod Liver Oil, whereas badly prepared oils are devoid of these important medicinal substances."

SAMPLES FREE TO MEDICAL MEN.

THE MALTINE MANUFACTURING CO., LTD.,
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Enjoyed by Young and Old.

**BIRD'S
CUSTARD
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NO EGGS! NO TROUBLE! NO RISK!

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YORKSHIRE RELISH.

THE MOST DELICIOUS SAUCE IN THE WORLD.

This cheap and excellent Sauce makes the plainest viands palatable, and the daintiest dishes more delicious. The most cultivated culinary connoisseurs have awarded the palm to the YORKSHIRE RELISH on the ground that neither its strength nor its piquancy is overpowering, and that its invigorating zest by no means impairs the normal flavour of the dishes to which it is added. Employed either *au naturel* as a fillip to chops, steaks, game, or cold meats, or used in combination by a skilful cook in concocting soups, stews, ragouts, curries, or gravies for fish and made dishes.

The only cheap and good Sauce. Beware of Imitations.

Sold in Bottles, 6d., 1s., and 2s. each.

GOODALL'S JELLY SQUARES

Make delicious and nutritious Jellies in a few minutes and at little expense. The Squares are complete in themselves for making Cherry, Champagne, Brandy, Lemon, Orange, Raspberry, Strawberry, Vanilla, Pineapple, Black Currant, Red Currant, Almond, Plain, Port and Sherry Wine jellies, and are sold in boxes containing half-pints, pints, and quarts, at 3d., 6d., and 1s. each.

Sold by Grocers, Chemists, Patent Medicine Dealers, Oilmen, &c.

PROPRIETORS—

Goodall, Backhouse & Co.,
WHITE HORSE STREET, LEEDS.

Science Siftings will still go on issuing "Certificates of Merit," and perhaps find people to believe in them.

In its columns a short time ago, *Science Siftings* published an article upon Van Houten's Cocoa, which was enough to bring tears to the eye of Cleopatra's Needle. It refused that excellent and pure cocoa a "certificate of merit," à la Ally Sloper, which in the eyes of all sensible people was about the best tribute Van Houten's could receive. It is very wrong that the very ablest public analysts in the United Kingdom, such as Mr. Alfred Allen, Mr. Otto Hühner, Dr. Campbell Brown, etc., etc., should have the temerity to state that Van Houten's Cocoa is pure when so scientific a paper as our fly-poisoning contemporary holds an opposite opinion. But these gentlemen are not "fly analysts." They are afflicted with reputations of a worthy kind, and brains in a serviceable condition.

BUT "DR." ALLINSON HAS A VERY ACTIVE BRAIN.

The Medical Council, or whoever treated this bright, pure spirit so harshly as to remove his name from the register, will feel, when they read the following, some intense remorse. It came to us nicely lithographed:—

"To the Editor of FOOD AND SANITATION.

"Sir,—Dr. Allinson, the well-known Hygienic Physician, is desirous of spreading the knowledge of the laws of health and his books. He proposes that you put in your columns each issue (weekly) the enclosed advertisement. In return for this he will supply you with a popular Medical article every week. We need not enlarge on the benefits your paper will receive from this regular contribution from Dr. Allinson's well-known pen. You will find it will make old readers cling to you, and also bring in a new set. The people are thirsting for this knowledge. It is well-known to the Doctor that one paper to which he has been attached for ten years has at least ten thousand who take the paper for his articles alone. The knowledge imparted is in popular language and understood by ordinary readers, all medical terms being rendered into plain English.

"We are entering into this arrangement with newspapers. ONE in each district. We therefore suggest you should secure our offer at once. It is only made by the Doctor, because he wishes to educate the people and to save unnecessary suffering and premature deaths.

"If agreeable please sign the accompanying form and return it to us and oblige.

"Yours truly on behalf of the Union,

"EDWARD CURTICE,

"Managing Director of the Newspaper Exchange and Advertisement Clearing House,

"359, Strand, London, W.C."

DR. ALLINSON'S READERS MUST THIRST.

We don't want old readers "to cling to us," and if "people are thirsting" for Dr. Allinson's knowledge they won't get it through FOOD AND SANITATION.

If they pine and feel miserable over it, they had better read *Hunter's Weekly*. It will cheer them up.

A PERFECT DRAIN PIPE.

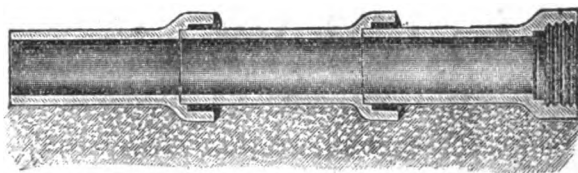
SINCE the water carriage system of drainage has been adopted numerous have been the improvements in sanitary tubes. From the porous, badly-burnt earthenware pipe, laid without joints, creating cesspools under the house, and socketed pipe, clay jointed, to the glazed stoneware tubes the transit has been rapid.

No longer may the old porous agricultural pipe and chimneypot be used as of yore for house drains. Nothing but kiln-burned highly-glazed stoneware tubes, jointed with Portland cement, is now permitted, and the improvements in their construction are numerous, each inventor claiming superiority over others.

A house drain to be effective must be self-cleansing, and, to attain this, the drain must be laid so that the refuse matter passing through meets with the least possible impediment by way of badly laid pipes, improperly made joints, and imperfectly fitting spigot and collar.

Among the many improvements in sanitary tubes one was shown us some three years ago, at our Strand office, by Mr. T. F. Strutt, a gentleman of many years' experience in sanitary work. It struck us that the idea was exceedingly good, and we so expressed ourselves; it has been shown at the exhibition of the British Institute of Public Health and is now being used in drain construction.

The improvement consists of a rebate in the collar of the pipe, into which the spigot exactly fits and holds the pipe in the desired position, while the operation of



(STRUTT'S IMPROVED SANITARY TUBES.)

jointing with Portland cement can easily be effected without fear of any portion of the jointing material passing into the interior, allowing at the same time an equal quantity to be placed round the spigot in the collar, thus ensuring a perfect gas and water tight joint.

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The most Delicious Liqueur.

In Original Cases, containing 1-Doz. Bottles or 2-Doz. Half-Bottles.

These Imported Cases make most Acceptable Presents, and may be had of all Wine Merchants.



"SUTHERLAND" BRAND

ENGLISH PRESERVED PROVISIONS.

English Rolled Ox Tongues,

Spiced Beef,

Pressed Beef,



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Brawn, etc., etc.

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THE LAW & CHEMISTRY relating to FOOD & DRUGS.

By **H. MANSFIELD ROBINSON, LL.D. (London)**, Solicitor and Clerk to the Shoreditch Sanitary Authority,

AND **CECIL H. CRIBB, B.Sc. (London), F.I.C., F.C.S.**, Public Analyst to the Strand District.

One Volume. Crown 8vo. 500 pp. Cloth, 5s.

"For the benefit of our readers we think it well to inform them that a really excellent work has just been issued, entitled 'The Law and Chemistry of Food and Drugs.' It is so clearly written, admirably arranged, and well printed, that we can heartily recommend everyone concerned with the Acts—be they analysts, inspectors, medical officers, or traders—to procure a copy."—*Food and Sanitation*.

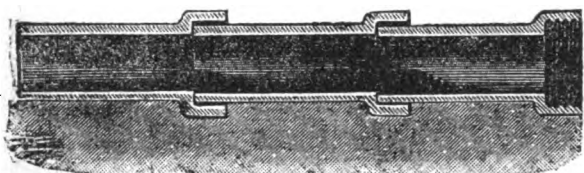
"It is a distinct novelty to find the treatment of the law on the subject in the same volume as the chemistry, and the book is yet of convenient size. It should therefore prove of great value to persons conducting prosecutions, cross-examining scientific witnesses, etc., on account of its portable character no less than because of the well-arranged information it contains. Notwithstanding the brief space devoted to their adulteration, pharmacists will find the work of great utility, both for reference in analytical work, and for consultation in seeing how to avoid some of the pitfalls that may lie in their path."—*Pharmaceutical Journal*.

THE REBMAN PUBLISHING COMPANY, Ltd., 11, Adam Street, Strand, London.

A true alignment of inverts is also secured, an item of the utmost importance to the effective working of the drain; and, except the natural friction, there is no impediment offered to the free flow of the sewage.

These pipes are specially suitable for pipe sewers and house drains, and may be seen and obtained at Messrs. Mitchell's, engineers, Drury-lane.

It is well known to those connected with drain and sewerage works that the great cause of obstruction in pipe drains is the imperfectly fitting joint, and with the ordinary socketed pipe this is to a great extent unavoidable, notwithstanding that great care be exercised in the laying, it being almost impossible to properly centre the tubes, too much reliance having to be placed in the jointing material. Too much will raise the spigot in the socket, or too little will allow it to drop, thus causing a series of ledges against which the sewage accumulates, and in time causes an obstruction.



SECTION OF BADLY CENTRED PIPES, IMPERFECT ALIGNMENT OF INVERTS, WITH SEWAGE MATTER AGAINST JOINTS.

The above sketch is a fair sample of the way in which a drain is laid with the ordinary socketed pipes.

Every house drain should be self-cleansing, and to facilitate this the interior of the pipes when jointed should present an unbroken line of invert. If this is not attained the sewage remains (as shown in the sketch above), giving off gases which escape and poison the air near our bedroom windows, and the house drain soon becomes worse than the public sewer into which it discharges.

A BOOK FOR PARISH AND DISTRICT COUNCILLORS AND PUBLIC OFFICIALS.

MESSRS. HAZELL, WATSON AND VINEY, Long Acre, London, W.C., have just issued this work for 1896, in which is included an excellent diary of two days to a page. The work contains the full text of the Local Government Act, 1894, a concise digest of its provisions and most of the enactments incorporated or referred to in the Act, texts of circulars, etc., etc. The book contains information about nearly every public department, M.P.'s, lords, judges, etc., and their addresses, county and other councils, with their chairmen, clerks, etc., and is cheap enough at 3s. 6d. It would not of course do if the Editor of *FOOD AND SANITATION* could not find something wrong even in so well edited a book as the above. Dr. J. Bell instead of Professor Thorpe is given as principal of the Laboratory Department at Somerset House (p. 12). That, however, is an error of no real importance, for from the point of view of protecting the public from fraud by adulteration, Professor Thorpe is quite as great a public evil as his predecessor was.

THE MOTH NUISANCE.

MR. C. T. KINGZETT, F.I.C., is irrepressible, always breaking out in a fresh place. The latest emphatic nuisance that he has elected to suppress is that destructive abomination, the moth; and in this he will have everyone's good wishes, for well-nigh everyone suffers more or less from its ravages. Mr. Kingzett goes clear away from powders and the like, which may or may not be effective, but which assuredly are very dirty and troublesome to use, and has devised a paper, about 4½ inches by 6 inches, strongly impregnated and coated with a substance in which, we fancy, camphor plays a leading part. The paper is to be placed between the folds of the articles to be protected. The smell imparted to the articles is removed by exposure to the air for a short time. Like Mr. Kingzett's other admirable inventions, the moth-papers are prepared by the Sanitas Company, Limited, of Bethnal Green, London, E.

FILTERS FOR THE ARMY.

WHETHER it be a case of the "new broom" or not is of small moment, so long as really efficient steps are taken to keep our soldiers healthy, and to ensure that they have, from a sanitary point of view, the best obtainable. It is a long time ago since we made public the fact that there were 22,000 filters in use in military hospitals and barracks, every one of which was a dangerous disease and dirt distributor. In India these filters have actually propagated cholera. If it be to Lord Wolseley that we are indebted for the closer regard for the health of our soldiers that is shown in the equipment of the troops for Ashanti, then all the more credit is his for causing the experience of the French army to be availed of, and supplying portable *Pasteur* filters for field use. If his lordship ordered the immediate smashing of the 22,000 microbe disseminators now in use, his action would be still more laudable. A filter that is no filter, but a disease conservatory, is a very dangerous thing to have in use anywhere. Experiments have proved the old fashioned filters in use do not rid water of disease germs, and any filter that will not do this ought not only to be excluded from our army and navy, but from sale to the public.

STERILISED MILK.

STERILISED milk—in an easily obtainable form, free from adulteration by drugs, added water, skimming, or disease germs—ought to have a future before it.

A successful process, invented by Messrs. Neuhaus, Grouwald and Oehlmann, of Berlin, has been adopted

IZAL

DISINFECTANT, NON-POISONOUS; NON-CAUSTIC; NON-CORROSIVE.

A NEW DISCOVERY—NOT A COAL-TAR PRODUCT.

Sole Manufacturers and Proprietors:—

**NEWTON, CHAMBERS & Compy, Lmtd.,
THORNCLIFFE, SHEFFIELD.**

Possesses far greater disinfecting and antiseptic power than pure carbolic acid, without any of the risks attending the latter. It is also much more easily distributed through water than carbolic acid.

"IZAL" is the surest protector against Fevers, Small-pox, Cholera, Influenza, Diphtheria, and other infectious diseases. Can be used for local as well as internal application. It is a perfectly reliable disinfectant for the sick room, and is absolutely safe for all ordinary uses—washing the patient, cleansing the hands, for surgical dressings, etc.

MR. W. BRUCE CLARKE, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, writes:—"For close upon two years I have scarcely used any other disinfectant than "IZAL"; and gauze soaked in "IZAL" has served me as a surgical dressing. . . I am well satisfied with it, and shall not be easily induced to revert to the use of carbolic acid or sublimate.

"IZAL" is non-corrosive to surgical instruments. It will not stain clothes or injure bedding, and being non-caustic, it will not numb the fingers or irritate the skin. It is non-injurious as a gargle, and rapidly destroys foreign growths in the throat.

"IZAL" specially prepared for medical and surgical use, in 4oz. and 8oz. bottles, 1/6 and 2/6. Samples supplied free to the profession on application.

"IZAL" MEDICAL SOAP, 2s. per box, for skin diseases and obstinate eczema.

"IZAL" EMBROCATION, for sprains and bruises, and unusual muscular strain, 1s. 1/4d. per bottle.

"IZAL" OINTMENT, for burns, scalds, chilblains, etc., 1s. 1/4d. per pot.

"IZAL" LOZENGES, for sore throat, and as a preventive against infection, 1s. 1/4d. per box.

FREEMAN'S DIGESTIVE BAKING POWDER

For Strength, Purity, Price, and Adaptability,

HAS NEVER BEEN EQUALLED.

It is free from Alum and Absolutely Pure. **GUARANTEE** placed on Lid of every Box sent out.

For twenty-two years Freeman & Hildyard have pointed out the injurious character of Baking Powder containing Alum, and have at all times given a guarantee that every article manufactured or sold by them under whatever name, is pure and free from any injurious ingredient.

SOLD BY EVERY LONDON WHOLESALE HOUSE AT LIST PRICE.

Lists on application to—

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E. & T. PINK
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**JAMS
MARMALADE. JELLIES
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CONFECTIONERY WORKS GENERAL
HOSKING & WIMBURN
HARRIS & WIMBURN
SCOTT'S WIMBURN
LOTTERS & SAUERBROOK SIBTHORPE
FEGG & WIMBURN STAPLE STREET

by the Excel Sterilised Milk Co., Ltd., of 23, Victoria-street, S.W., who put sterilised milk up in bottles, hermetically sealed in vacuo, and offer it for sale to the public at the price of ordinary best milk. Samples we have examined were of excellent quality, having exactly the appearance of ordinary new milk. The Imperial Board of Health of Germany some three years ago investigated several processes of sterilisation on behalf of the German Government, and found the process now introduced into England by the Excel Sterilised Milk Co., Ltd., the only one that proved really successful in annihilating disease germs, and yet preserving the character and chemical composition of the original milk. The experiments extended over two years, and were thorough, no fewer than 800 bottles being examined bacteriologically of 1,700 altogether investigated. The English company responsible for introducing this valuable preventive against the dissemination of disease by milk receive their supplies from farms under medical supervision.

These facts will enable our readers to see that the invention is not only worth knowing, but is worth hearty support by all concerned with public health.

A CORONER ON INFANTS' FOODS.

AN inquest was held before Mr. W. H. Bell, coroner, at Rochester, on Monday, November 25, on the body of Mary May Tranah, aged two months.—The Coroner said there was no doubt that the evidence would show that the child died from improper feeding. It had been fed partly from the breast and partly on Mellin's Food, and almost everybody should know the latter was not the proper food to give to a child of that age. It came to the same thing if a child were given insufficient food, or whether it had improper food—both would really starve a child. He did not say there had been intentional neglect in this case, but at the same time there was neglect, as people ought to know what was proper food to give to young children.—Mary Jane Tranah, wife of a dockyard labourer, residing at Miles-place, Delce, said the deceased was two months old. She had fed it on the breast and Mellin's and Neave's Foods. The child always seemed hungry. Witness gave the child an oyster on one occasion, and on another a piece of an orange. The deceased had not been ill before the previous Friday. Dr. Packman said the child was dead when it was taken to his assistant, who was not qualified. He had viewed the body since death, and it did not appear to be in a healthy condition. It was much reduced, and not above the size of a child six weeks old. The child was weakly developed. He should say that the convulsions were caused by the food not being digested. A child of the age of the deceased could not digest Mellin's or Neave's Food mixed with milk and water. He should say the convulsions were caused by improper feeding, probably in ignorance. Children under three months should not be fed on these prepared foods. Fine oatmeal or flour properly boiled in milk was more digestible than the foods he had named for young children.—The Coroner said the child clearly died from improper feeding.—The Foreman: I don't think the doctor's opinion will have much weight with me.—The jury consulted together and the Foreman announced that the unanimous opinion of the jury was that the child was not improperly fed, and that the mother did the best she could under the circumstances, and that death was from natural causes.—The jury would like to add a rider that it would be better if medical gentlemen gave instructions as to how children should be fed. In answer to the Foreman, Dr. Packman said he would not mind saying that the convulsions were caused by Mellin's and Neave's Foods.—*Pharmaceutical Journal*, December 7.

The above case shows the amount of prejudice that exists regarding infant feeding, even amongst pro-

fessional men. An oyster, orange, and the like for an infant of two months! We wonder that it did not occur to the Coroner and Dr. Packman that the death of the infant was more likely to be due to these atrocities in feeding than to Mellin's or Neave's Foods.

KOKO FOR THE HAIR.

The sub-title of this nostrum is "Koko-Maricopas." Well, Marry may come up and Marry come down, but it won't "cop" any of our money. We would rather be bald than plundered, and yet the inducements are great. The Strand barbers, who are unfortunately serving Her Majesty, would have tried to get as many guineas as the Koko altruists do shillings for so wonderful an article as the one that can flaunt the following authoritative analysis:—

"Chemical Laboratory,
"54, Holborn Viaduct, London,
"January 13th, 1888.

"I hereby certify that I have submitted to a careful examination and chemical analysis a sample, purchased by myself from the stock of a well-known firm of wholesale druggists, of the preparation known as 'Koko for the Hair.'

"I have found nothing in this preparation which could be injurious either to the head or hair, and the results of the analysis lead me to pronounce 'Koko for the Hair' a pleasant dressing, which would undoubtedly be advantageous in many cases. I discovered in the preparation no ingredients of the nature of a colouring matter or dye.

"EDWY GODWIN CLAYTON, F.I.C., F.C.S.,

"Member of the Society of Public Analysts, &c."

Our readers who want this wonderful preparation of nothing in particular, can get a 4s. 6d. bottle for 2s. if they send a coupon. Our coupon expired on November 30, so we are without the potent remedy, and our grief at being deprived of it is too intense for words.

MORE REVELATIONS ABOUT DANISH BUTTER.

We Britishers are a curious study. We would rather let Tommy Atkins lean upon a German made bayonet and find it bend under him, than equip him with an honest Sheffield one; we would rather contract for Danish pork for our Navy than give English and Irish pig raising sensible encouragement, and our newspaper editors would rather praise Danish butter and befoul the good repute of Irish and English butter, than trouble themselves to seek the truth. When we started to break down this Danish butter humbug and expose what a swindle it is, we found scarcely anyone to believe that the Danes were past masters in adulteration. Well, the police-courts have altered all that, and recent prosecutions we have recorded from week to week have been our justification. But we have even done more—we have almost approached the miraculous, for we have galvanised into actual activity the Board of Agriculture. A Leith butter importer tells us that in Leith samples of foreign butters have been taken without the knowledge of the importers, and declared by the Board of Agriculture to contain an admixture. Not only Dutch, but Danish, German, and Russian butter importers have received the same circular stating that the samples taken contain an admixture of some other fat than butter fat. Well, the Danes have had a long innings, and if they won't thank us for being the first to expose their swindles—the Board of Agriculture owes us that courtesy at least. We don't, however, suppose we shall get even thanks, as Government departments, *vide* Mr. Preston Thomas and the Local Government Board, do not even acknowledge their appropriation of our thunder—they regard "imitation as the sincerest form of flattery."

THE GAME OF POISONING ONES FELLOW CREATURES

by diseased meat still goes merrily and profitably on, and it will until the honest and sensible course be adopted of compensating the butcher for tuberculous cattle, which he cannot know are so affected until he slaughters them. Earl this, or Lord that, who bred them and weeded them out of his herd when the tuberculin test showed the disease, passes them on to the dealers as sound, and the duped butcher, who often enough has invested his all in the cattle, has to face the loss of his entire capital or risk selling the diseased meat. Is there any wonder that he at times risks it? Is there one real reason why tuberculous cattle should not be treated as foot-and-mouth diseased ones are—destroyed, and compensation paid to the owner? We seize a certain amount of the dangerous meat, but do we not miss a score of diseased carcasses for every one we pounce on? Let us first be equitable and give the butcher compensation for such animals.

THE ORIGINAL BEEF JUICE BY A COLD PROCESS.

(Prescribed by the Medical Profession since 1878).

**AN
IDEAL
FOOD.**



**IT
STANDS
ALONE.**

Its ready assimilability, its marked nutritive quality, its stimulating power, and restorative force, make **BOVININE** a most valuable aid in all treatment where a true nutrient is indicated.

BOVININE is made by a **COLD PROCESS**, for in this way only is it possible to preserve the nutrient properties of fresh lean beef. Heat brings out a cooked meat taste, but **DESTROYS THE FOOD VALUE** of meat preparations so produced, leaving the product simply a stimulant and relish, suitable for making Soups, Gravies, etc., but in no sense worthy the name of food.

BOVININE is made for the **GOOD IT WILL DO**, not simply to tickle the palate, and may be relied upon to give proper nourishment and quick strength to the enfeebled system, where all other forms of food fail completely.

SAMPLES FREE TO MEDICAL MEN, CARRIAGE PAID, ON APPLICATION TO

THE BOVININE COMPANY,
32, SNOW HILL, LONDON, E.C.

NON-POISONOUS.
83 PRIZE MEDALS AWARDED.
Jeyes' Fluid.
Jeyes' Powder.
Jeyes' Soaps.



JEYES' SANITARY COMPOUNDS CO., LIMITED,
64, CANNON ST., London, E.C.

THE GREAT COAL TAR DISINFECTANT (NON-POISONOUS).

TRY
ALLEN & CO.'S
IMPROVED
BAKING POWDER.

CERTIFIED TO BE ABSOLUTELY THE PUREST AND BEST.
See *The Lancet*, the leading Medical Authority of the World.

WHOLESALE OFFICE: 441, NEW CROSS ROAD, LONDON.

Unfermented

This Wine is highly approved and frequently prescribed by SIR B. W. RICHARDSON, DR. NORMAN KERR, DR. J. J. RIDGE, &c., &c.

Prospectus, giving full particulars of Price, Dose, &c., Post Free on Application,

PORT WINE & BARK.
A Sample Half-Bottle Free by Parcel Post for 2s. 9d.
Specially recommended in cases of GENERAL DEBILITY, INDIGESTION, and NERVOUS EXHAUSTION. Also as an EXCELLENT NON-ALCOHOLIC TONIC AND RESTORATIVE after Typhoid, Scarlet, and Rheumatic Fevers, Influenza, and other exhausting illnesses.

F. WRIGHT, MUNDY & CO., MERTON ROAD, KENSINGTON COURT, LONDON, W.

and then there can exist no shred of excuse for those found using or vending diseased meat, and into prison they should go. It is a question of a more far-reaching importance than the average man realises, as the following events of one week disclose:—

At Wigan, on Dec. 6, W. Burton, Stubshaw Cross, was summoned. The evidence of Drs. Hannah and W. Wood, veterinary surgeons, was to the effect that the animal was suffering from tuberculosis, and much emaciation was evident, the meat being unfit for food. Defendant called W. Benthall, butcher, of Standish, from whom he purchased the cow. This witness said the cow was all right, with the exception of the lungs being enlarged. The magistrates committed the defendant for three months' imprisonment.

At Worship-street, on Dec. 5, Frederick John Robinson, wholesale manufacturer of sausages and brawn, at 136, St. Stephen's-road, Bow, was summoned.—Mr. Muir prosecuted for the Poplar District Board of Works, and said that the preparation of sausages and brawn offered an admirable opportunity for the use of meat such as the defendant had, as brawn was prepared with spices, which disguised the fact that the meat was stinking, though it did not remove its dangerous or even deadly qualities.—Clarence Raymond, sanitary inspector, said that on going into the cutting room he saw a man engaged at work with a forequarter of a cow, removing the meat from the bones. The meat was discoloured, bruised, faint, giving forth a sickening smell, and quite unsound. Another portion of the carcass was wasted, alimy, and without a particle of fat. The medical officer, Dr. Corbett, ordered the meat to be seized, and it was subsequently condemned at this court.—Mr. Russell Corbett, M.R.C.P., etc., said he was called to inspect the meat in question, which was the largest portion of a cow carcass, in nine pieces. It was flabby, discoloured, bruised, and stinking, utterly unfit for food.—Mr. Bushby in giving judgment said he was asked to believe that the meat was good on the Monday and found corrupt on the following day, when it was seized; and, further, that it was a sufficient defence to say it had not been seen by the defendant. Of course, if it was bad when it was sent in it would be hard to make a person like the defendant responsible, but here the evidence showed that it had not been returned, and had, moreover, been removed to the cutting room. It would be ridiculous to say the defendant was not responsible, on those two grounds alone. Having regard to the serious consequences of using such stuff for food, he ordered the defendant to pay the full penalty—£50, and 23s. costs.

At Southwark, on Dec. 4, Mr. H. T. Wiggs, sanitary inspector to the vestry of Lambeth, produced in court a quantity of diseased sheep's livers which had been exposed for sale on a stall in the New-cut. The quantity was about twelve pounds, in thirteen pieces, and every piece was infested with "flukes," *i.e.*, brown worms about $1\frac{1}{2}$ in. long, resembling small leeches.—Mr. Fenwick: Is there any harm in eating a "flake"?—The Witness: I think so, your worship.—Mr. Fenwick: It would soon die in the stomach, wouldn't it?—The Witness: I couldn't say that. They are said to get into the alimentary ducts. I asked the man where he bought the stuff, and he said outside Smithfield Market.—The magistrate ordered the destruction of the meat and the summoning of the parties concerned.

At Lancaster, on December 2, Thomas Dawson, butcher, was charged with dressing sheep in the Corporation slaughter-house unfit for human food. The Medical Officer said the carcass was dropsical, without a particle of fat, and entirely unfit for human food. The magistrate, who ordered the destruction of the carcass, said the defendant must have intended to poison people. He never was so disgusted as at seeing such a carcass intended to be put on the market for human food. The defendant was fined £5 and costs, with the alternative of two months' imprisonment. The defendant said he would go to prison. This is a fair picture of the diseased meat question as it is, and it is revolting enough in all conscience.

THE WATER-AT-SPIRIT-PRICE SWINDLE.

Although the law specifies that spirits, with the exception of gin, should not be lower than 25 degrees under proof—gin being allowed to be 35 degrees under proof—the law is laughed at by the publican affixing a notice that "all articles are diluted," and as spirits may be produced from whatever substitutes manufacturers choose to employ, to the exclusion of malt, it is well for the rice, Indian corn, or sugar grower, but bad for the native agriculturist, whom everybody pities, whilst none try to really help him. Our own opinion is that the suppression of the use of such substitutes in brewing and distilling would substantially help agriculture, but our parties rely for the funds to carry on their miserable politics upon a goodly number of persons engaged in this legalised fraud. The law allows the brewer to make his beer of what he likes, and send it to the publican at any strength he chooses. The only person who can be dragged into the law's meshes is the publican, who is constrained to vend the spurious chemical ale or spirits. It is a most unsatisfactory state of things from the public point of view.

LIVERPOOL AND FINES.

We have often commented on the inadequate fines imposed by the Liverpool stipendiary, and pointed out how Mr. Stewart's kindly nature did harm by encouraging adulteration. On December 4, Mr. Stewart made a new departure, which we are glad to note, for if it be maintained, Liverpudlians will substantially benefit, and milk-fed infants have some chance of getting nutriment in their food. Mr. Stewart began with Peter Warburton, milk-seller, 44, Scotland-road, who was summoned for having sold skim milk, to which 20 parts of water had been added to every 100 parts of the poorest milk. There was another information against the same defendant for selling skim milk to every 100 parts of which 58 parts of water had been added. The

defendant had been three times previously fined for similar offences as follows:—On March 5, 1884, £5 and costs; April, 9, 1884, £5 and costs; April 25, 1888, £1 and costs. The defendant pleaded that he was not a milk-dealer, but "was subject to other parties at present."—The magistrate inflicted the maximum penalty of £20 and costs on each information, £41 10s. in all.

Laurence Briggs, 4, Morgan-street, was fined £20 and costs for selling new milk which contained 11 parts of water to every 100 parts of the poorest milk. Defendant was fined £3 and £2 with costs on two informations of a similar description on July 19, 1893.

These practices are decimating infants by the thousand, and Mr. Stewart has done well to regard them more sternly than was his wont.

REFUSE FROM MINERAL WATER MAKERS AND ITS USES.

For a very long time the average mineral water maker contracted with his ginger merchant that when he had extracted all that was valuable out of the ginger in ginger beer making the merchant should take it back, and as it looked to be ginger—being minus only the ginger itself—it was ground up, mixed with genuine ginger and palmed off with extra profit on the grocer and public by a number of firms of high standing. It is a mean fraud, and it is much to be regretted that the firms practising it cannot be the victims of prosecutions instead of their dupe the grocer. Since we exposed the swindle it has well nigh dwindled away. We have lost some mineral water advertisers through it, but we must contrive to survive without them, as not even their business could reconcile us to the sale of worthless fibre as ginger. We are not sorry that on December 4 Mr. Stewart at Liverpool was lenient with William Brooks, grocer, 31, Goodall-street, who was fined £2 and costs for selling ground ginger which contained 80 per cent. of spent ginger. Defendant informed the magistrates that he bought the ginger as pure. Since he received the summons in the present proceedings he had found out that the people from whom he obtained it had also discovered since he purchased it that the ginger was not pure. In subsequently sending for the return of the ginger to the various people to whom they had sold it, these people had overlooked him, which accounted for his still having it in his possession. He was not aware that the ginger was not pure. It had now been taken back by the persons from whom he got it.

DEFAMING IRELAND'S INDUSTRIES.

When a man issues patriotic green handbills advertising "pure butter from 9d., direct from our own farms in Ireland," and sells 70 per cent. of margarine as Irish produce he requires looking after.

At Liverpool, last week, Joseph Rowlands, "The Shamrock Market," 160, Mill-street, was summoned for selling as butter an article which contained 10 per cent. of water, and upwards of 70 per cent. of fats other than butter.—Inspector Baker produced a green handbill issued from defendant's shop, which advertised "pure butter from 9d., direct from our own farms in Ireland." Witness's sister visited the shop and asked for a pound of butter. The article she received was wrapped in white paper, and it was not until he divided it for analysis that he saw beneath a tissue wrapper describing the contents as margarine.—Defendant was fined £5 and costs.

It must be very beneficial for Ireland that the MacCarthyites are abusing the Healyites, and both of them vituperating the Redmondites, whilst none of them have the time or brains to accept the Hon. H. Plunket's practical proposal to form a party to advance Ireland's industries regardless of politics. But politics are so much easier than knowledge, for they only need froth and wind, whilst Ireland's industrial development needs energy, brains, and scientific skill. Mr. Plunket has our sympathies in his really patriotic work of endeavouring to get Ireland to say "Erin go Bread and Cheese" instead of "Erin go Bragh," which one of the wisest and most brilliant of Englishmen—Sydney Smith—who was also one of the truest friends Ireland ever had, recommended that unfortunate country many years ago to do. Mr. Plunket's job is a bit like our own—a thankless and a heartbreaking one, but he wouldn't be happy unless he was in it, and we should be just miserable unless we were going hammer and tongs at some wrong or other.

THE UNFORTUNATE OYSTER.

The last oyster scare we did not believe in, nor did Dr. Wynter Blyth, but being selfish we didn't care if it lasted the rest of our lives, for Colchesters could be bought almost at periwinkle rates, whilst ordinarily they are beyond the means of anyone who is not a Barney Barnato or an advertising agent. Well, we feasted right royally on oysters whilst it lasted, and just in the nick of time, when that *gourmets'* delight is again at famine price, there comes the scare at Stirling.

A Government inquiry has been instituted in regard to the recent oyster scare consequent on the fatalities which occurred after the Stirling ball. Dr. Chalmers, of Glasgow, has been commissioned to inquire into and report upon the alleged contaminated oysters served to the guests. The oysters came from the Island of Tholen, Holland, to the order of Mr. Milne, of King-street, City. The consignment of 16 barrels, four of which, containing 2,000 oysters, formed the quantity used at the ball, were sent by rail from Tholen to Rotterdam, thence by steamer to Grangemouth. From the latter port they were at once forwarded to Stirling and opened. Dr. Chalmers is said to be of opinion that when the oysters left Holland they were in good, sound condition, and that if any of them were diseased the change must have taken place in the course of transit. Dr. Buchanan, of the Western Infirmary, well known as an expert in bacteriology, subjected samples of the Stirling oysters to a close examination, and he, too, is of opinion that the bivalves were healthy. The result of the scare has been that the trade in Glasgow is practically extinct at the present

KUDOS

COCOA

Was awarded the Gold Medal at the Universal Food and Cookery Exhibition 1893, and supplied to the Nansen, Jackson-Harmsworth, and Wellmann Arctic Expeditions.

THIS COCOA is prepared from a blend of the finest beans grown in Ceylon, West Indies, Central and South America.

It is unequalled for its delicious flavour, aroma, and solubility, and being **ALL COCOA** it yields three times as much nourishment as the so-called cocoas containing a large percentage of starch and sugar.

No starch or sugar is used in the manufacture of **KUDOS COCOA**. It is absolutely pure, and only the excess of natural fat is extracted, rendering it invaluable to invalids and all persons of weak digestion.

BOVRIL, LIMITED, Food Specialists, LONDON.

Chairman, Right Hon. Lord Playfair, G.O.B., LL.D.

moment. For instance, Mr. Milne, who is probably the largest importer of Continental oysters, says that prior to the Stirling ball his average weekly output was 25,000 oysters, while the week before last they numbered only 500, and last week 2,000. The opinion is gaining strength that the source of outbreak of typhoid must be looked for elsewhere. It is curious that on the night succeeding the ball Mrs. Whitelaw, of Stirling, received 1,000 oysters of the same consignment, and also that about the same time a similar number of the same fishing was served at the residence of ex-Bailie Shearer, on the occasion of his daughter's marriage, with no bad results. Large quantities also of the same fishing reached Brussels, Berlin, and London, and so far as the Dutch Fishery Board inquiries have gone no complaint has been made in regard to the quality of the oysters.

For ourselves we don't believe that oysters are in the least dangerous.

AN ANTI-ADULTERATION ASSOCIATION.

Do any of our readers know anything of the association described in the *Daily Chronicle* as follows:—

"ANTI-ADULTERATION ASSOCIATION.

"The frequency and impunity with which the Food and Adulteration Acts and other Acts of Parliament having a similar scope are set at defiance, have led to the formation of this society. The objects it has in view are to put more regularly into force the provisions of the existing Acts, and to prevent their becoming practically inoperative through the greed of traders or the apathy of consumers, and to obtain such modifications of the Acts as are necessary in the interests alike of the public and of fair-dealing manufacturers. Also to protect consumers by publishing reports and analyses of foods, beverages, drugs, etc., and their respective adulteration or purity, and to encourage honest dealers and manufacturers by the issue of certificates of purity and excellence under certain regulations. In the recent report of the public analyst of St. Pancras, it is stated that out of 240 samples of different articles of food, beverages and drugs, no fewer than seventy-eight, or at the rate of one in three, were found to be adulterated."

We know nothing of it, and we do not know anyone concerned with the suppression of adulteration who does. The "issuing of certificates of purity," etc., has a suspicious look of blackmail. Perhaps some reader can tell us if it is a genuine association, and who has organised it. In any case, it seems strange that such an association could be formed without any of the persons most concerned with the suppression of adulteration knowing anything about it.

THE SHEFFIELD STIPENDIARY FURTHER MUDDLES THE ACT.

The Food and Drugs Acts have already, thanks to our judges, been made so pitifully decrepit and useless that it seems positively cruel to deck their battered carcasses with tattered rubbish such as the Sheffield stipendiary hung upon them last week. If this decision be law then heaven help infants fed on milk, for the fluid sold in our large towns can be anything. We do not, of course, expect the stipendiary to understand analysis, but he ought to understand the law and why he is paid to administer it. Of course, that quintessence of incompetency, the Somerset House analytical department, had a share in the muddle—it has a share in most things save public usefulness—and this was the result. Walter Ashton, of 2 court, Suffolk-road, appeared in answer to a summons charging him with having sold milk not of the nature and substance asked for.—Mr. H. Sayer (Deputy Town Clerk) who prosecuted on behalf of the Corporation of Sheffield, stated that the case had been adjourned from Nov 1 in order to enable the defendant to have a portion of the sample analysed by the authorities at Somerset House. The original report of Mr. A. H. Allen, the city analyst, was as follows:—"The sample contained the parts as under: Old or partially skimmed milk, 80 parts; added water, 20 parts. The sample was analysed before any change had taken place in the constitution of the article that would interfere with the analysis." The Somerset House authorities reported to the following effect:—"We hereby certify that we have examined the milk, and declare the results of our analysis as follows: Non-fatty solids, 6.90 per cent.; fat, 2.17 per cent. From a consideration of these results, and after making an addition for natural loss arising from the change which has occurred in the milk through keeping, we are of opinion that the milk contains 17 per cent. of added water, and that there is a deficiency of fat of not less than 5 per cent. beyond what is due to such dilution." The sample was old milk which the

Corporation's inspector had purchased of the defendant at the rate of three halfpence per quart. The defendant explained at the first hearing that the milk he sold as old was, in reality, new milk, which he watered down in the proportion of two quarts of water to two gallons of milk. His customers, he said, preferred this mixture to old or skimmed milk. He denied that the milk had been skimmed.—Mr. Sayer submitted that the second analytical report amounted to a confirmation of the first. The Stipendiary did not agree with the contention. Mr. Allen spoke of old or partially skimmed milk, but the other, although it speaks of deficiency of fat, said nothing about cream being extracted. Mr. Sayer replied that the defendant had admitted having diluted his milk with water. He did not see how the prosecution could fail, quite apart from the question of skimming. The Stipendiary remarked that it was clear that the inspector asked for old milk and obtained something which contained a good deal of added water. But the defendant explained that he was supplying an article with the nature of which his customers were perfectly acquainted, and which they required. When the Inspector asked for old milk the defendant was afraid to refuse to sell him anything, and so he gave him this mixture after trying to explain his own position and the nature of the liquid. What seemed to be wanted to enable the court to decide as to the genuineness of the defendant's story, was the evidence of customers who were in the habit of buying this milk. He asked if either side had any evidence of this character.—Mr. Sayer said he had no further evidence. It was news to him that a man who supplied milk and water to a person who asked for milk could escape the consequences.—The Stipendiary replied that that was not the point. The man told the Inspector he had no old milk; it was a mixture.—Mr. Sayer submitted that the defendant must be convicted on the analyses.—The Stipendiary did not admit that the two agreed.—Mr. Sayer replied that if the English language meant anything, the two reports were identical.—The Stipendiary said the second report left a doubt as to whether the water was added to old or new milk. He was unable to come to a decision as to what took place between the Inspector and the defendant.—Mr. Sayer: I cannot carry the case any further. If the Corporation.—The Stipendiary: Cannot you call any customers?—Mr. Sayer: No.—The defendant then called two witnesses, both of whom stated that they had been accustomed to buy from the defendant a mixture of new milk and water at three half-pence per quart.—Mr. Sayer objected to the evidence as being utterly irrelevant. It was not a question of what the customers liked or disliked, or what they bought, but what the Inspector asked for, what was supplied to him, and what it proved to be. He could not carry the case further, and if his worship intended to decide against him he should ask him to state a case in view of an appeal.—The Stipendiary replied he would state distinctly what he thought about it. This milk or mixture complained about was sold on October 10th to the inspector under the Food and Drugs Act. From the evidence he was unable to decide what precisely took place between the defendant and the inspector. It was undisputed that the inspector asked for old milk, and what he got contained a large percentage of water. But this was a transaction which took place in the street, and it was not sufficient that the inspector should merely ask for the article, and that what was given him must be exactly what he asked for, because people might not have it in their possession to begin with. The defendant said it was not old milk nor new milk, but a mixture of new milk and water, and his customers bought it knowing what it was. It came to about the same price as old milk. The defendant further said that when the inspector asked for old milk he either told him or endeavoured to tell him what it was, but he dare not refuse altogether to supply him, being afraid he might get into trouble. That was in his opinion a perfectly intelligible reason for selling the liquid. Of course, if he had sold it as old milk it ought not to have contained the quantity of water it was shown to contain, but the water was really part of the mixture, and further, a part of what was sold. In support of his story the defendant brought two customers, who stated most distinctly that they had dealt with him for a long time, and bought this milk knowing that it was a mixture of fresh milk and water, and that it suited their purpose. That testimony corroborated the defendant's statement to some extent. He saw no reason why the defendant should tell the inspector a different tale from that which he told his customers. If, on the other hand, he had been telling the inspector it was old milk, or, worse still, fresh or new milk, the story would have looked like an invention on his part. Not only was there a doubt as to what

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took place between the inspector and the defendant, but the latter's statement was corroborated—which was that he endeavoured to impress upon the inspector that the liquid was a mixture, and that it was not old milk. As to the analysis, if it were clearly proved that this was a mixture of old milk and water, instead of fresh milk and water, the defendant would be doing a wrong to his customers. Any one reading the two analyses, and seeing there was no further explanation on the part of the gentleman who made the first one, would, he thought, come to the conclusion that the second report threw doubt on the first in the matter of whether the milk was old or partially skimmed, or whether it was poorish new milk. Seeing there was a doubt not only as to the transaction between the inspector and the defendant, and that the defendant's statement had received corroboration, on those grounds he dismissed the summons. The defendant paid 12s., the fee for the second analysis.

IF MILK CAN BE ANYTHING, WHY NOT MUSTARD?

Yeovil magistrates do not see why flour should not masquerade as mustard. If "Colman's Double Superfine Mustard" does not mean pure mustard, we do not know what it can possibly mean. For our part we think there must be some error in the report of the case as it appears in the *Grocer*. A Mr. Wm. Henry Powney, of Yeovil, was summoned on December 3 for selling mustard adulterated with 8 per cent. of flour. Police-constable Williams said that he was supplied with it loose from a tin box. "Before he left the shop Mrs. Powney called his attention to a label on the inside of the box, and said if there was anything the matter with the mustard the label would free her." Witness said there was nothing there, as the label said, "Guaranteed of the finest quality." The tin produced was not the same the mustard was taken from. By Mr. A. E. Eaton, who represented the defendant on behalf of Mr. J. Trevor-Davies: He did not know that mustard sold as "prepared mustard" was a preparation containing other things besides mustard. Superintendent Self said on October 29 he submitted the mustard to the public analyst for Somerset (Dr. Alford, of Taunton), and he had since received a certificate from the analyst stating that the mustard contained 8 per cent. of flour. Mr. Eaton, in defence, pointed out that the constable denied that the tin in court was the same as the mustard was taken from when bought, but Mrs. Powney was certain that it was the same tin. The tin was at the time tied up and left the same as it now appeared. If he could substantiate his assertion that the mustard was taken from that tin, he argued that the Bench had no alternative but to dismiss the case. The notice on the tin stated that the mustard was a preparation. Mustard was known as a preparation, and all prepared mustard contained a certain percentage of flour, etc. If the constable asked for mustard, he submitted that a shopkeeper was justified in supplying what was generally sold as such. Of course, if he had asked for pure mustard, it would have been different. Mrs. Powney said the constable came into the shop either on a Tuesday or Wednesday, and not on a Monday. He first asked for a quarter of a pound of coffee. Witness said she had not any ground, and the officer remarked that it did not matter. He next asked for some tea, half a pound of arrowroot, and also for the same quantity of cocoa. Not having any loose cocoa, he said he did not want any in packets or tins. He then asked for a quarter of a pound of mustard. Witness had no loose mustard, but only in tins. She took down half a pound tin; but he said he did not want that quantity, and, to oblige him, she took out a quarter of a pound. On the label of the tin it was stated that it contained "Colman's Double Superfine Mustard," and witness told the constable of this. Upon this evidence the Bench immediately dismissed the case.

If this report be correct it will be a great pity if the authority does not appeal, and let the question "What is mustard?" be settled. Not even *Science Siftings* with its certificates "à la Ally," can convince us that flour is mustard, but Yeovil magistrates appear to think it is. This nonsense about wheat-flour being necessary in mustard has been talked to death, and it is not the truth. Colman's make and sell genuine pure mustard, and so do other firms. Why then this reiterated bosh about wheat-flour being necessary, unless it be because wheat-flour can be bought at 1½d. to 2d. per pound, whilst mustard is worth 8d. to 1s. 4d. for the same quantity.

HOW FEVER IS SPREAD BY MILK.

At Worship-street on December 3, Isaac Simons, 43, Brick-lane, appeared to two summonses, at the instance of the London County Council, for that he, being a person carrying on the business of a dairyman, on whose premises scarlet fever had broken out, did not immediately give notice of the outbreak to the Council, and did not immediately remove all milk and all utensils containing milk from his premises.—Mr. Collman explained that the prosecution was taken under the Cowsheds and Dairies Act, the defendant being liable, under the Public Health Act, to a fine of £5.—The defendant did not contest the facts, but said he was only a poor man.—Mr. Bushby considered that it was of the greatest importance to protect the public against the spread of disease. He imposed a fine of £3, with 2s. costs on the first summons, and a fine of £1, with two guineas costs, on the second.—The defendant paid the penalties, £6 4s. in all.

AN ANCIENT FEE-BILL.

In a late number of *Le Progrès Médical* appears the prices charged by the executioners of ancient Paris for their services to the State, in taking life, or cutting off an organ, of convicted culprits. The writer of the

article has unfortunately omitted to affix the probable date of the schedule of prices, and he does not inform us when the polite Parisians ceased to deal out the terrible punishments of "those former days." There is one item, "the Gehenna torture," that is very suggestive of heat and suffocation, but the explanatory foot note is not supplied. The executioner seems to have had two different prices for quartering a man.

AN EXECUTIONER'S PRICE LIST.

	Livres.
To boiling a malefactor in oil	48
To quartering him while alive	30
To affording a criminal passage from life to death by the sword	20
To breaking the body on the wheel	10
To fixing his head upon a pole	10
To cutting a man into four pieces	36
To hanging a culprit	20
To enshrouding the corpse	2
To impaling a living man	24
To burning a sorceress alive	28
To flaying a living man	28
To drowning a child murderess in a sack	24
To burying a suicide at cross-roads	20
To applying the torture	4
To applying the thumbscrew	2
To applying the buskins	4
To administering the Gehenna torture	10
To putting a person in the pillory	2
To flogging	4
To branding with a hot iron	10
To cutting off the nose, the ears or the tongue	10

—*The Journal*.

SALICYLIC ACID IN LAGER BEER.

IN our last issue we referred to the fact that some time ago Dr. Maclaughlin, of Clough Jordan, co. Tipperary, sent us a sample of lager beer that bore the following label:—"Frankfurter Bierbrauerei, Gesellschaft, Vormals, Heinrich Henninger & Sohne," which a Mr. J. S. Dudley, of Middle Abbey-street, Dublin, was supplying. An analysis of the sample revealed the fact that salicylic acid was present in considerable quantity. Pretty nearly all lager beer is in the same interesting drugged state, so, bad as we are at home, it is perhaps better to suffer the swipes we know than fly to the amateur German beer druggist."

Quite a shoal of letters from lager beer vendors and importers have reached us maintaining that salicylic acid is not injurious, or that the particular lager beer our correspondents import is guaranteed free from noxious chemicals. None of the lager beer firms, however, deny that they use preservatives of some sort. To those who defend salicylic we would point out that there is pure and impure salicylic, *i.e.*, that even in this article adulterations, artful aid is discovered. The impure salicylic contains a poison, para-oxy-benzoic-acid, and on the whole we feel justified in our contention that whilst we do not object to salicylic being used for bromidrosis in the German army, we prefer that it should stop at the very necessary deodorising of the German soldiers' "Trilbys," and not be surreptitiously introduced into English stomachs. One large firm informs us that "Messrs. Redwood and De Hailes, our eminent analysts, are in the habit of taking samples of our stock." It will be news to members of the Society of Public Analysts that these gentlemen are eminent. Curiously enough we tried this very firm's lager beer only last week, and had to return it to Mr. Bulbick, wine and spirit merchant, Clapham Park-road, as undrinkable. So much for the "eminent analysts." It was not, of course, Mr. Bulbick's fault that the lager beer was in such a state. He did not brew or bottle it.

OUR LIBRARY TABLE.

BOOKS ON ADULTERATION.

THE impetus our strong crusade against adulteration, during the past three years, has given to the enforcement of the Acts to suppress fraud in foods, drugs and drink has had the good effect of causing thousands more samples to be analysed than was the case when we began our campaign. "Spent" ginger, dilute pyroigneous acid as malt vinegar, alum in baking powder, preservatives in food: these, and a host of other matters have come before the Courts directly on account of our writings. There is a stricter supervision—unfortunately not yet half strict enough; for in districts innumerable nofoods, drugs, or drink are analysed from year to year—and an increased number of prosecutions for offences, which explains why the past year has seen so many legal works published on the Adulteration Acts. Practically, until the last two years, the only book dealing with the Acts was Bell's. Now legal literature is being showered upon all concerned with suppressing adulteration.

We have a second edition of Bell's book, by Sir Wm. J. Bell and H. S. Scrivener, both barristers-at-law, published by Shaw and Sons, Fetter-lane, London, E.C. Price 4s. 6d.

"The Law Relating to the Adulteration of Food," by Joseph Macaulay, J.P., solicitor, Belfast; publisher, J. Falconer, Upper Sackville-street, Dublin. Price 3s. 6d.

"The Adulteration Acts," by Richard J. Kelly, barrister-at-law; published at the *Farmers' Gazette* Office, Dublin. Price 2s. 6d.

"The Sale of Food and Drugs Act," by T. C. H. Hedderwick, M.A.; published by Eyre and Spottiswoode, London, E.C. Price 5s.

"The Law and Chemistry of Food and Drugs," by H. Mansfield Robinson, LL.D., solicitor to the Shoreditch Vestry, and Cecil H. Cribb, B.Sc. (London), F.I.C., public analyst to the Strand Board of Works; published by F. J. Rebman, 11, Adam-street, Strand. Price 6s.

The attitude of Sir Wm. Bell and Mr. Scrivener towards adulteration questions may be gauged from the authors' statement on page 5, re the decision of Mr. Justice Hawkins and Mr. Justice Lawrence on alum in baking powder. The judges held that baking powder was not an article of food, consequently we have the anomaly of a person being allowed to sell with impunity baking powder containing alum. But should he use that baking powder and sell bread or confectionery produced by its aid, the law punishes him. The authors call this judgment, "This able decision." We don't. On pp. 34 to 36 some chemical notes about milk are given which betray a strange want of knowledge of the question. The authors appear never to have heard of the investigations of Vieth and Richmond for the Aylesbury Dairy Company, but give the figures of the incompetent Somerset House referees as valuable contributions to the chemistry of milk. These are blemishes on a book that, from a purely legal point of view, has much valuable information.

Mr. Macauley's book does not praise judgments opposed to the public welfare. It contains merely the legal decisions, with the various quibbles that can be raised. It is a useful work, well indexed and arranged.

"The Adulteration Acts," by Richard J. Kelly, has the advantage of being cheap and having a chapter by Sir Charles Cameron, the Dublin public analyst and medical officer, giving advice as to the preparation and despatch of samples under the Fertilizers Act. This Act is exhaustively dealt with. The Food and Drugs Act, the Margarine Acts, and the Adulteration of Seeds Act are also given, and the principal cases cited.

Mr. Hedderwick's book is excellently arranged, and it is a pity that he did not include the Margarine Acts and cases in his work. The notes on cases are well and carefully written, and there is an interesting appendix on milk, from which we extract the following remarks, by Sir Charles Cameron, who, being asked by the Select Committee of 1872 "whether he regarded skim milk as a fair article of food?" replied, "I do not; I like the fats; I think that the results of experiments have shown that really most of the motive power of our bodies and a large portion of the tissues of our bodies are derived from the fat-forming materials, from the starches and sugars and fats, and not from the nitrogenous portion of our food at all. The tendency now is to look upon the fats and the substances that form fats as really the most effective parts of our foods."

But these books are all of them written from the dry-as-dust, purely legal point of view. The spirit of the Act, the wrongs upon the public the legal quibbles, which some High Court decisions, encourage, troubled none of the writers save Mr. Kelly. A very different work is "The Law and Chemistry of Food and Drugs," by Robinson and Cribb. It has all the dry-as-dust research and cases, but it is purposeful and educational. The legal part of the book is written with a clearness and fulness that make the work one that not only every public analyst, Food and Drugs Act inspector, solicitor, justice of the peace, and medical officer should possess, but traders also. The latter would find its information save them from loss of money, reputation and business. The provisions of The Sale of Food and Drugs Acts, 1875 and 1879; The Margarine Act, 1887; The Fertilisers and

Feeding Stuffs Act, 1893; The Horseflesh Act, 1889; The Adulteration of Seeds Act, 1869; The Public Health Act, 1875 and 1890; The Public Health Act (London), 1891; The Pharmacy Act, 1868; The Arsenic Act, 1851; and other statutes as to the adulteration of beer, bread, butter, corn, hops, tea, tobacco, and wine; indictable offences and actions for damages; decided cases; appendix of forms, Government circulars and statutes are dealt with in Part I. The second portion of the book gives the chemistry of the commoner articles of food, their origin, mode of preparation and constituents, with the adulteration to which they are subject and the effect thereof on money value, wholesomeness and keeping quality, and the work concludes with statistics of adulteration and the consumption of dutiable and other articles. As might have been expected from an expert of Mr. Cribb's qualifications, the work is excellently done. The authors say: "An endeavour has been made to treat the subject in such a way as to be of use to traders and the general public. With this object special chapters are devoted to practical hints for enabling the public to protect themselves, and for helping honest vendors from committing offences against the law." They have succeeded in doing so and producing a book that we can cordially commend to our readers. Why? Because it deals with adulteration thoroughly, and explains the reason why it is so prevalent; it shows clearly how much the public are defrauded of per year, and in what respects the laws require amendment: it complains that by allowing the use of antiseptics in food, which are prohibited abroad, "we are liable to be flooded with all kinds of abominations in the form of sausages and preserved meats made from semi-putrid materials, dosed with preservatives. England, in this respect, will soon be regarded as the dust-bin of Europe, and receive all its refuse, both of meat and drink." It points out the necessity for properly trained inspectors, and for making the Acts compulsory, and it tells everyone exactly what he ought to do in putting the Acts into force, and also explains all procedure, defences etc. We wish every member of the House of Commons and every magistrate would read this admirable book. We should soon have a real Adulteration Act, adequate fines, and a capable court of referees in cases of disputed analyses, and the public would gain in peace and health. Honest traders would not be undersold by unscrupulous competitors, and some English industries, now nearly ruined, would again know prosperity.

"Aids to the Analysis of Food and Drugs," by Pearmain and Moor (Bailliere, Tindall, and Cox, King William-street, London, 3s. 6d.), is not intended, say the authors, to be used as a cram book for examination purposes. It is, however, just the sort of book that will be so used, for it puts a great amount of solid information into a very small compass. The writers, being competent analysts, give scant quarter to the Somerset House milk standard. They say: "It is not too much to say that the disgraceful state of the milk trade in this country is fostered, if not actually caused, by this absurdly low standard, by which, of course, analysts are compelled to abide, or take the risk of being over-ruled by the referees, who are, naturally, infallible in the eyes of the average magistrate." The methods and aids to the analysis of milk, butter, cheese, bread, flour, baking-powder, vinegar, tea, coffee, cocoa, pepper, ginger, mustard, honey, lime and lemon juice, sugar, infants' foods, beer, wines, spirits, poisonous metals in foods, disinfectants, and numerous drugs are given, with alcohol tables and calculations, atomic weights, etc., etc., and a very valuable book is the result.

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Albuminous matter	12'62
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Mineral matters	1'27
Cellulose	0'38

100'00

The mineral matter includes 0'60 of phosphoric acid. According to the label the *Lancet* states that samples examined by that journal contained 2'78 of mineral matter, consisting chiefly of soluble potassium phosphates. The sample we analysed contained less than half that quantity, and had no more than wholemeal flour. The amount of albuminoids being also about the same as contained in good flour, we cannot see any advantage which the Frame Food Diet has over wheat-flour. On the label was given an analysis of Frame Food Extract, but that analysis has nothing to do with Frame Food Diet, which evidently contained but very little of the extract. ..

Food & Sanitation

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[Registered at the General Post Office as a Newspaper.]

VOL. VI.—No. 176.

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 „ 414.—Food and Drugs and Margarine Act Prosecutions: Lard.—Spirit Adulteration.—Milk.
 „ 415.—Margarine.
 „ 416.—Coffee.—Appeals: Buckler v. Wilson.
 „ 417.—More Awards for Jeyes'.—Trade Journals.—Correspondence.

Food and Sanitation.

SATURDAY, DECEMBER 21ST, 1895.

DRUG ADULTERATION.

NOT nearly enough public attention is given to this grave question of the purity of drugs, and if any proof of this were needed the prosecutions at Birmingham on December 12 should be ample. Four retail chemists and druggists were summoned for selling articles which were not of the nature, quality, and substance demanded. Simply stated, the allegation was that in two of the cases tincture of iodine, and in the other two cases tincture of aloes, had been sold which were in excess of the strength prescribed in the British Pharmacopœia. The defendants were Edwin Morgan, 318, Nechells Park-road; Aquila Baldwin, Great Lister-street; James and Henry Mayou, 217, Great Lister-street; and John Adkins, 78, Stafford-street. Mr. Hiley prosecuted on behalf of the Corporation.—In the case against Mr. Adkins, Mr. H. Jones, inspector, said that after supplying him with something which purported to be tincture of aloes, defendant (who was aware of witness's office) said he had made a mistake, and given him the compound instead of

simple tincture. In cross-examination by Mr. Ashford, who appeared for the defence, witness said defendant told him the compound tincture cost as much again as the simple tincture.—Dr. Hill (medical officer of health and public analyst) said he had analysed the sample, and it differed from standard samples in that it had 40 per cent. more ingredients in solution than the Pharmacopœia ordered, while at the same time the spirit was very much stronger than it should have been. In reply to the Bench, Dr. Hill said the effect of taking the tincture would be simply that of an overdose of a drug; it might be dangerous or it might not. The principle was one of very great importance, as if the same thing occurred in connection with some drugs it might be attended with fatal results.—In reply to Mr. Hiley, witness said he only knew of one tincture of aloes, and that was necessarily a compound.—Defendant went into the box and stated that the tincture he supplied was practically in accordance with the London Pharmacopœia of 1851, and was official up to the time of the formula of the British Pharmacopœia.—At this stage it transpired that the inspector had entered the article supplied to him as "compound tincture" before leaving defendant's shop, and Mr. Fisher said the charge had completely broken down.—Mr. Hiley said he was unaware of the entry in question, and would ask leave to withdraw the case.—The Bench assented.

The charge against Messrs. Mayou was next investigated. In this case tincture of iodine was supplied, which, according to Dr. Hill, contained 150 per cent. of iodine and 50 per cent. of potassium of iodide in excess of the quantities ordered in the British Pharmacopœia, and it also contained 10 per cent. of foreign matter, viz., glycerine.—The defence was that the iodine was sold as liniment for outward application; but Dr. Hill said it was only half the strength the liniment should be. The bottle in which the iodine was supplied was produced, and was found to be labelled "Poison."—The defendant, Henry Mayou, went into the box, and, in cross-examination by Mr. Hiley, said he was not a qualified chemist. He was convicted under the Food and Drugs Act in 1892. He did no dispensing at his shop.—A fine of £1 and costs was imposed.

Aquila Baldwin's case was next taken.—The inspector said the defendant carried on business as a chemist and surgeon. He bought from defendant's assistant what purported to be tincture of aloes, and forwarded a sample for analysis.—Dr. Hill deposed that the sample contained forty per cent. of solid ingredients, and fifty per cent. of spirit in excess of the formula.—Defendant said the drug in question was sold as "Aloes co.," and was prepared in accordance with the London Pharmacopœia.—Dr. Hill said the preparation in question was not officially recognised either in pharmacy or medicine.—Defendant was sworn, and said "Aloes co." was a more efficacious and a more expensive drug than tincture of aloes.—The defendant's assistant swore that he understood the inspector to ask for "Aloes co."—Mr. Hiley said defendant had been previously fined under the Act.—A penalty of £1 and costs was now imposed.

The charge against the remaining defendant, Edwin Morgan, was that he had supplied what purported to be tincture of iodine, which was 90 per cent. in excess of the proper strength.—The case was not contested, and defendant was fined £1 and costs.

A Birmingham contemporary says:—

"These prosecutions are important and salutary.

They reveal the existence of a certain amount of laxity in conducting a delicate and responsible business, and, what is more serious, a persistent laxity, for two of the defendants had been previously convicted. There does not seem to have been any imputation of improper or mercenary motives underlying the offences, which were simply contraventions of the Act of Parliament in respect that the articles supplied were not of the "nature, quality, and substance" demanded. But the practice is a most dangerous and reprehensible one all the same. The purveyor has very little excuse, for in the case of drugs the "nature, quality, and substance" are not matter of debate or opinion, but prescribed in detail by a technical and legalised authority. The vendor has an additional responsibility placed on him from the circumstance that variation of the ingredients can hardly be detected by his customers unless injurious results should actually follow. The purchaser of meat, milk, or any of the ordinary articles of food is protected in a certain measure by common knowledge and experience and the use of his faculties; the buyer of drugs must rely on the honesty and accuracy of the person who supplies them. These convictions confirm a very general impression that the supply of such commodities is not managed with the care and exactness which should be observed. Medical men are in some cases driven to make up their own prescriptions for the simple reason that they cannot trust them to be closely followed. Only quite recently public feeling was much disturbed by a case in which, with fatal consequences, strychnine was given for something of quite different properties. The authorities are to be commended for the vigilance which has brought about the convictions of yesterday, which ought to prove a sufficient warning of the necessity of rigid precautions in the manufacture and sale of chemical compounds."

Unfortunately for the public, the number of drugs for which prosecutions are possible can be reckoned almost on the fingers of one hand, and public analysts have times over shown how scant is the protection the British Pharmacopœia affords the purchaser. The greatest friend the drug adulterator has is what our contemporary calls the "technical and legalised authority," with its hazy definitions, etc. It is the British pharmacopœia itself that prevents samples of drugs being taken generally for analysis, but even in the teeth of its obstruction earnest men strive to arouse the public to an understanding of the sorry state of things. On December 6, at Ingleton, at the instance of Mr. A. Randerson, Inspector under the Food and Drugs Act, J. T. Bayliff, chemist, Ingleton, was summoned for selling, through the manager (A. Wilkinson) 40zs. of bismuth lozenges which were not of the nature demanded. Evidence of purchase having been given, the analyst's certificate showed that each lozenge contained only 1.2 grains of bismuth out of a total of 25.4 grains, whereas it should have contained 2 grains out of a total weight of 27 grains. They were lacking in the most important ingredient.—Mr. G. S. Tatham defended, and drew attention to the slightness of the inaccuracy. It was quite possible that the substance had evaporated in the manufacture. His client had obtained them from the largest and best firm of manufacturers in England, who guaranteed their products. There was no attempt to defraud, and Mr. Bayliff could not be held to be at fault. He submitted that it was not a case for punishment, and might properly be dismissed with a caution.—The Chairman said it was not intended to defraud, but they must impose a penalty of 1s. and £1 11s. 11d. costs. In drugs absolute accuracy of dose and purity are essential, and we trust the revised Pharmacopœia will give us these improvements.

MILK POISONING.

DR. GRESSWELL, the Health Adviser to the City of Melbourne, has published a report by his assistant, Dr. Gray, on two fatal cases of poisoning by milk, which

report, though two years old, has such amount of interest for our readers as leads us to find space for a short summary of its contents.

Briefly, the facts are that milk purchased from a local dairy farm on August 11, 1893, by two households, proved, as it can be declared almost with certainty, to be of such poisonous quality as to cause the death of two children who partook of it in a raw and fresh condition. The three cows of the farm yielded some seven or eight quarts daily, and this amount was consumed by 51 persons, in nine families. Of these persons 10 were under five years of age, and 36 over ten years of age. On the date in question, only three or four quarts were consumed by 39 of the persons, and of these seven were under five, but only one of them took the milk as drink, and that one drank it in a boiled condition. In one household, taking two quarts, all the members were adults. The other two households, taking two quarts between them, contained the deceased children, aged respectively three years and seventeen months. They were the youngest in the families, and the only ones who took much of the milk in a raw state. Indeed, with one exception, they were the only children consuming the milk raw. They developed the symptoms which usually follow the ingestion of milk which contains tyrotoxinon. No trace of poisoning was found *post-mortem*, but vomiting was a marked symptom in both cases, and no milk had been taken for some hours preceding death. All other known conditions likely to have caused these fatal illnesses could be excluded; and these were the only cases of the sort at the time or place. They both fell ill the same day, one dying after two and the other after three days' illness. In the one case the home surroundings were deplorably dirty, but not so in the other. The whole locality was in a wretchedly insanitary and excrementally polluted condition. But the state of the dairy premises and vicinity was quite enough to set aside all question of where the milk acquired its infective quality. The sleeping apartment of the farmer's family was littered with excreta. The cows in wet weather stand up to their udders in liquid filth; they are milked standing on an accumulation of dry manure; the water used is from an adjacent tank, and contained on analysis 162 grains of solid residue and 45 grains of chlorine per gallon, being grossly polluted.

These are the chief of the circumstances which Dr. Gray has to report, and one wonders when reading the account what the local authorities can have been about to have permitted the occupants of premises so grossly filthy to go on with the sale of milk and farm produce. All we need say is that it was not for want of caution by the responsible medical adviser that the conditions leading to this report were allowed to exist.—*British Medical Journal*.

TRICKS OF THE WINE TRADE.

THE United States Consul at Havre, Mr. C. W. Chancellor, has recently reported on French wines. "The grape," says Mr. Chancellor, "is not necessarily an element in the production of wine. We commonly describe wine as the fermented juice of the grape, yet it is not always so, for much so-called wine is perfectly innocent of any acquaintance with the product of the vineyard. Recently the director of the municipal laboratory of Paris, whose function it is to detect adulterations of foods and drinks, caused 15,000 casks of so-called wine to be seized and destroyed. The official analysis could not detect in the whole lot a single drop of grape juice; but what it did detect was water, alcohol, sulphate of gypsum, glycerine, salts of potash, and berries for colour. It is a significant fact that whenever the French vintage is poor it has been found that immense quantities of sugar, amounting in 1887 to upward of 56,000 tons, have been used for mixing with the wine, while the deficit in the production of the vineyards has been in a measure made good by

the making of many millions of gallons of wine, so-called, from raisins, currants and the lees of the wine-press. Sweetness in wine covers a multitude of defects without improving its quality, yet many persons insist on giving the preference to sweet wines, with the result that acidity and indigestion are sure to be produced, and these sooner or later are followed by rheumatism and gout."

We do not fear these evils, for when we want to drink genuine liquors, or eat excellent food, we trust ourselves to the mercy of Romano's Strand, or the Cheshire Cheese, Fleet-street — whichever is the nearer to us. For years we have tried to discover something to grumble at either in food or drink at both places, but we cannot. We once heard a grumbler at the Cheshire Cheese, and his complaint was that he had been served with too many larks and oysters with his portion of the famous pudding, but he evidently knew as little about foods as the editor of *Science Siftings* knows about pork or science.

ADULTERATION IN GLAMORGAN.

THE County Analyst (Mr. C. A. Seyler) reports that he has examined 239 samples of food and drugs. As to the milk, he states:—

"Of the milks 76 were genuine and of good quality, 2 were of very poor quality, and 1 slightly below the lowest recognised standard; 6 were grossly adulterated, 2 containing 7 and 16 per cent. of added water, 2 being watered to the extent of 5 and 10 per cent., and being in addition deficient in fat to the extent of 4 and 10 per cent. respectively; 1 was deprived of fat either by the process of skimming or adding skimmed milk to the extent of 8 per cent., and 1 to the extent of 5 per cent., this being also below the standard for milk solids. Thus 7 per cent. of the milks were adulterated to a large extent, and the number, including those of poor quality, rises to 10.6 per cent. It should be understood that in calculating the above percentages of adulteration the figures have been based on the very lowest possible standard, and that the sample is not returned as adulterated unless it falls well below even this low limit. Where a certificate states a sample to contain 5 per cent. of added water and 95 per cent. of milk, this refers to the very poorest liquid obtained from the cow's udder to which the title of milk can be given. If the milk is of normal composition, the percentage of added water would be double; that is to say, the milkman might add nearly one pint of water to every gallon of milk. A small deficiency of fat is still more serious. The standard adopted by Somerset House is 2.75 per cent., while average milk contains about 4 per cent. of fat. During the last quarter the average amount of fat in the samples of milk received from the County of Glamorgan was 4.1 per cent., and it not unfrequently rises to 5 per cent. Thus the low standard permits the fat to be removed to the extent of 33 per cent. before the sample is condemned, or in other words the milkman may add one gallon of skimmed milk to every two gallons of ordinary Glamorganshire milk, and may even add water to this to the extent of a further 10 per cent., without being condemned. Yet when a milk falls below both these low standards to the extent of 5 per cent., some magistrates refuse to convict.

He also reported that the butters were all genuine, and that of the lards 13 were genuine, and two contained respectively 15 and 20 per cent. of beef stearine. It seemed that this article was again becoming adulterated with beef fat. The "salad" oil was cotton oil, an inferior article. Of the farinaceous foods, the bread, flour, corn flour, rice, razine, and oatmeal were genuine. Attention was called by the police superintendent to the common practice of selling light bread, and in future special attention will be directed to that.

THE CHEMICAL AND PHYSIOLOGICAL CHANGES IN MILK CAUSED BY BOILING.

By J. L. KERR, M.D., C.M., F.R.S.E.

Late Examiner in Chemistry and in Medical Jurisprudence, University of Aberdeen; Public Analyst, Rawtenstall Borough.

MILK consists of a multitude of cells suspended in serum. The cells are fat cells which form the cream; the remaining cells are nucleated, and of the nature of white blood corpuscles. The serum consists of water, in which is dissolved milk, sugar, and serum albumin, with various salts, and, chief of all, casein. The cells, with the exception of the fat corpuscles, are all living cells, and they retain their vitality for a considerable time after the milk is drawn from the mammary gland.

Milk kept a few days may be perfectly sweet—that is, unsoured, but it has a different taste and appearance, and shows a tendency to separate into serum and the more solid portions, which tend to sink to the bottom of the vessel. This change in taste and emulsification is due to the death of the white blood corpuscle-like bodies contained in the milk.

There is reason for supposing that when fresh milk is ingested the living cells are at once absorbed without any process of digestion, and enter the blood stream and are utilised in building up the tissues. The casein of the milk is digested in the usual way of other albuminoids by the gastric juice, and absorbed as peptone. There is also absorption of serum albumin by osmosis.

The chemical result of boiling milk is to kill all the living cells, and to coagulate all the albuminoid constituents. Milk after boiling is thicker than it was before.

The physiological results are that all the constituents of the milk must be digested before it can be absorbed into the system; therefore, there is a distinct loss of utility in the milk, because the living cells of fresh milk do not enter into the circulation direct as living protoplasm, and build up the tissues direct, as they would do in fresh unboiled milk.

In practice it will have been noticed by most medical practitioners that there is a very distinctly appreciable lowered vitality in infants which are fed on boiled milk. The process of absorption is more delayed, and the quantity of milk required is distinctly larger for the same amount of growth and nourishment of the child than is the case when fresh milk is used.

THE LATEST DEFENCE.

AT the South Western Police Court, London, on Dec. 11, Mr. Sheil heard a summons against John Barnett, who was in the service of a firm of wholesale milk dealers, for refusing to sell to Arthur Parnell, an inspector to the Vestry of St. Mary, Battersea, a pint of milk for analysis.—Mr. Ricketts, who defended, said he claimed exemption under the Act, as the milk was not on sale. The defendant had been supplied with over 100 gallons of milk to deliver to retailers who had ordered it on the previous day. The inspector was told that the defendant could not sell a pint, not even to his brother.—Mr. Sheil thought by accepting a defence of that kind it would be a complete bar to the inspection of milk sold in the streets. The case was an important one, and he could not help looking upon the defence with a certain amount of suspicion.—The defendant was called and questioned. He said he would sell small quantities of milk if he had any surplus, but not until after he had served the whole of his customers.—Mr. Sheil was about to impose a penalty when Mr. Ricketts claimed an adjournment to enable him to call witnesses to satisfy the magistrate that the milk which the defendant had was ordered on the previous day by customers. Mr. Sheil allowed an adjournment until next month.

LAMBETH AND THE LONDON COUNTY COUNCIL MEDICAL OFFICER.

WE do not know if Dr. Hamer, of the County Council, is any connection of John Hamer of the Mansion House Council on the Dwellings of the Poor, and of Cassells, Limited, who have the printing of that Council's report, but there is a curious similarity in their methods according to Mr. W. Wightman, J.P., Chairman of the Lambeth Vestry. Mr. Wightman says:—"Dr. Hamer picked out courts and other places from a list previously arranged, and he even went so far as to inquire for three places which no longer existed, inasmuch as they had already been wiped out." If this be the fact, there is little wonder that the Vestry by 58 votes to 19 approved of a snub direct being administered to the London County Council. We long ago exposed the humbug of the Mansion House Council on the Dwellings of the Poor, and its philanthropy on the cheap and charity dinner sponging entourage. It behoves the County Council, that has done so much excellent work for London, to give facts and not non-existent insanitary places.

MEN OF SCIENCE AND PUFFS.

THE announcement that the German Emperor has "cashiered" Professor Krause, and that in consequence of the disapproval with Professor Krause's conduct expressed by the Medical Faculty of the Berlin University, he has retired from the teaching body of the University raises a question that is worth consideration by the Chemical Society. Dr. Krause is the *Privatdocent* who refused to explain, when officially summoned to do so, how his name had come to be placed below the puffing advertisements of a new soap. If the Chemical Society has any regard for anything besides fees, it is about time it asked certain members if it is in any degree consistent with even its dignity that F.C.S.'s should be continually writing to business firms that they have examined this, that or the other, and offering to supply reports for puffing or otherwise at any price, from a guinea upwards. We have seen many of these offers.

SOMEWHAT ARBITRARY.

FOR the future, we must assume that the Bermondsey Vestry is a model of every virtue. No vestryman, we suppose, has ever used any vestry-acquired knowledge to make a deal "on his own!" No, they are just as impeccable as Metropolitan Asylums Board members, and afford touching spectacles of unwinged angels, "Sine labe originale." But even of such pure beings as these, we might ask a question arising out of the following facts. The Sanitary and Public Health Committees stated that they had considered the following correspondence in relation to Mr. Iles, one of the vestry's sanitary inspectors:—

"91, Clapham-rd., London, S.W.,
"Dec. 9, 1895.

"DEAR SIR,

"Re Nos. 1-7 (odd), Kipling-st., and 2-24 (even),
Lockyer-st., Bermondsey.

"I send you herewith copy of a letter received by me on the 13th ult. from a Mr. Iles, of 49, Willow-walk, Bermondsey, which I shall be glad if you will be good enough to place before your vestry.

"I am desirous of being informed whether the person in question is one of the sanitary inspectors of your vestry, and if so, whether the vestry approves of a sanitary inspector dealing in property in the district in which he acts in an official capacity, necessitating the serving of sanitary notices.

"I am, dear Sir,

"Yours faithfully,

"(Signed) ARTHUR W. TRIBE.

"J. Harrison, Esq., Vestry Clerk."

"49, Willow-walk, Bermondsey,

"November 13, 1895.

"DEAR SIR,—I am informed that your client is desirous of disposing of the houses in Lockyer and 1-7, Kipling-street; will you please let me know full particulars if such is the case, and also state what commission you can pay?"

"Yours truly,

"(Signed) A. ILES.

"Mr. Tribe, 91, Clapham-road."

The committee further reported that they had had Mr. Iles before them, and he admitted that he had written the letter, but stated that it was only written in order to satisfy his curiosity as to the amount at which the owner would be offering the property. He further declared "that the letter was written one evening at his own house on private note-paper."

The matter having been introduced by Mr. Pridmore, he moved a resolution to give Mr. Iles a month's notice, but before anything decisive was adopted the man was questioned on the matter. He maintained that his explanation was correct, and he expressed his sorrow that he had done anything of which the board did not approve. He had no idea he was doing anything wrong. Mr. Iles having retired, it was agreed that he be allowed to resign, and be released from his duties at once.

Mr. Iles may have been wrong, but on the face of it we cannot really see what cause Mr. A. W. Tribe had to seek and secure his practical discharge from work.

The vestry's decision would seem to debar any sanitary inspector from seeking to purchase for himself, or any other person, any property whatever. This sort of fine line is not drawn when a member of a board happens to buy a piece of land which is the very piece his board wants, and clears a profit on it of £14,000. A reprimand in Mr. Iles' case, where his explanation certainly seems a natural one, would have been ample punishment. But perhaps this board had its seven-yearly fit of virtue on, and determined to compound for its deliberate breaking of the Food and Drugs Acts and its screening of "thieves behind the counter" from the punishment the law ordains by making an example of this alleged sanitary scapegoat. We confess we would rather see the Food and Drugs Acts enforced in Bermondsey without fear or favour than pitiable exhibitions of pecksniffism like this case. The question we want to ask the Bermondsey Vestry is "How much longer are they going to make a farce of the Adulteration Acts?"

UN SOUND FOOD IN HULL.

REFERENCE to one of the tables supplied to the Hull Sanitary Authority is apt to impress one with an idea of the extent to which the public health is exposed to danger from unsound food. During the course of last year 57 beast carcasses were destroyed, 127 sheep, 68 calves, 37 pigs, 40,754 pounds of meat, 39,270 pounds of yeast, 570,234 pounds of fruit, 56,448 pounds of vegetables, 953,077 pounds of fish, 342,180 pounds of mussels, cockles, etc., and 5,304 pounds of eggs, poultry, and game. In all, the quantity of food destroyed as unfit for consumption reached the astonishing total of 2,059,711 pounds. Of course, this does not represent the food actually seized by the authorities, but that which was handed over by the consignees as being unsound.

LARD ADULTERATION—A WARNING.

RETAIL grocers should be very careful to secure a warranty with every purchase of lard they make, as they will see from our prosecution columns that two retailers have fallen victims, one at Swansea and the other at Ystrad, to the wiles of the refiners.

FOOD AND DRUGS AND MARGARINE ACT PROSECUTIONS.

LARD.

At Swansea, on December 16th (before the Stipendiary, Mr. J. C. Fowler), Ernest Williams, assistant at the shop of Mr. Evans, grocer, Landore, was fined £1 and costs for selling adulterated lard.

JOHN DAVID TRIBE, grocer, Gelli, was, at the Ystrad Police-court, on December 16th, fined £2 for selling adulterated lard on the 18th ult.

SPIRIT ADULTERATION.

At Skipton, on December 7th, Mary Horner, Craven Hefter Inn near Skipton, was summoned but did not appear, to answer an information sworn against her by Mr. A. Randerson, Food and Drug Inspector, West Riding County Council, for selling Scotch whisky which contained an excess of water equal to 11·3 per cent. The Bench imposed a fine of 20s and costs, the latter amounting to £1 3s. 9d.

JOHN PHILLIP, of the Craven Vaults, Skipton, who was represented by Mr. W. Thompson, was summoned at the instance of Inspector Randerson, for selling Scotch whisky, which was found on analysis by the county analyst to contain 2·4 per cent. excess of water. The sample was taken at 4.30 p.m. on the 7th ult., and the defendant said he had only filled the keg at noon the same day. Cross-examined by Mr. Thompson, the defendant said he had tested the whisky when he filled the keg. Mr. Thompson pointed out that the case was not a serious one, and the small excess of water could easily be the result of an accident. The defendant's explanation was that he filled up the cask on the day when the sample was called for, and tested the spirit in a hydrometer, finding it correct. The defendant had been in the business about half-a-dozen years and this was the first offence with which he had been charged. He therefore asked the Bench to consent to the case being withdrawn on payment of costs, and thus avoid a conviction. The inspector said he had no objection, seeing that the excess of water was so small. He explained to the Bench that formerly it was not the custom of the county council to take such cases into court, but they were becoming so numerous that he was instructed to prosecute in order to recover costs. The Bench then dismissed the case on payment of costs—amounting to £1 3s. 8d.

At Mansfield, on Dec. 12, Jane Soar, landlady at the New Cross Hotel, Sutton-in-Ashfield, was summoned at the instance of Mr. Wm. Crabtree, inspector under the Notts County Council, for selling adulterated whisky. Prosecutor stated that a quartern of whisky purchased at the defendant's inn and submitted to the county analyst showed that the spirit contained 8·3 of water more than the quantity allowed by law. Mr. J. D. Fidler appeared for defendant, and pleaded guilty of a technical offence, and explained that it was the result of an accident. A fine of £1 1s. was imposed.

At Wakefield, on Dec. 16, Joseph Smith Beilby, the landlord of the Alexandra Hotel, Belle Vue, was charged with selling adulterated rum. Mr. Rowlands appeared for the defendant. Mr. Macdonald, an inspector under the Food and Drugs Act for the County Council, said that on Nov. 5th he purchased at defendant's house half-pint of rum, and on its being analysed it was found to contain one degree more water than is permitted. Mr. Rowlands pointed out that the extent of the adulteration, if any, was very slight, and that samples of spirits taken by the present and the previous inspector had been found all right. He also explained that very little rum is sold, and that the spirit had been standing for some time in the vessel. The defendant was fined 1s., and with the expenses, he had £1 15s. 9d. to pay.

At Heanor, on Dec. 14, Mrs. Jane Eleanor Harvey, Butchers' Arms, Langley, was summoned by Captain Sandys for unlawfully selling him a half-pint of rum 29 degrees under proof on November 1st last. Fined 2s. 6d., and £1 2s. costs.

At St. Helens, on December 16, Eliza Welding, landlady of the Lamb Hotel, College-street, St. Helens, was charged with selling adulterated whisky to Police sergeant Kerrigan on the 3rd instant. Mr. T. Garner appeared for the defendant. The officer gave evidence as to the purchase of the whisky, and in cross-examination said that he saw in the bar a notice, which read as follows:—"Notice: All spirits sold in this establishment are of the same superior quality as heretofore, but to meet the requirements of the Food and Drugs (Adulteration) Act they are now sold as diluted spirits. No alcoholic state guaranteed." He said the notice was so small that he could not read it from the position in which he stood in the house.—Chief-constable Wood submitted the analyst's certificate, which stated that the sample was a mixture of whisky and water, 27·9 under proof, or 2·9 per cent. too weak. In reply to Mr. Garner, he said the "weakness" was a small percentage; but he had had cases where it was only 2½ per cent.—Mr. Garner, for the defence, pointed out that Mrs. Welding had been in the house 20 years, and in order to protect herself posted the notice which had been read on the advice of a trade periodical. A higher court had held that it was sufficient if the notice was placed in a position where it could be seen. Mrs. Welding could give no account for the whisky being too weak, as she purchased it in bond, but it had been kept in a warmer temperature than usual, and that might have reduced its strength.—The bench

intimated that the case would be dismissed on the payment of the costs.—Mr. Garner said he had hoped that the case would be dismissed altogether, as it had been the custom of the chief constable to include all such decisions in his "black list" at the annual licensing sessions.—Chief Constable Wood said he would not include the decision in that case in the black list, and Mr. Garner said he was quite satisfied with the intimation.

ELIZABETH ANN WHITHAM, of the Horse and Jockey, Sheaf-street, was summoned for selling on October 24 a pint of whisky, not of the substance, quality and nature demanded. Mr. Sayer stated that on analysis the mixture was found to contain 22·1 parts of water more than it should have done. Some people thought that the more water whisky contained the better it was, but he thought the discretion should be left to the consumer.—Mr. Fairburn, for the defendant, pleaded guilty, but stated that the defendant was getting the best whisky from a very good firm. The whisky was bought 18 per cent. above proof, and they were entitled to add water to bring it down to 25 per cent. under. In this case defendant, who was inexperienced, put the water first in the keg, and the whisky on the top, and the water consequently got in the tap first, and was not properly mixed with the whisky. The inspector being the first purchaser got the deleterious article. The Stipendiary considered there had been carelessness, and imposed a fine of £3 and costs.—Wm. Hy. Grattan, Red Lion Hotel, 145, Duke-street, was summoned for having sold whisky containing 24·2 excess of water. Defendant, who had no defence, was fined £3 and costs.—James Halliday, Rutland Arms, 86, Broad-street, was fined £2 and costs, for having sold whisky containing a 13·1 excess of water.—William Groves, Mail Cart Inn, was summoned for having sold gin which contained 13·1 excess of water. Defendant said he had only been in the house seven days, and took the spirits with the valuation. A fine of 40s. including costs, was imposed.

MILK.

THE following facts go to explain the enormous infant death rate. At Lambeth, on December 13, Mr. G. W. Marsden, solicitor to the Camberwell Vestry, appeared to support several summonses against tradesmen at the instance of Inspector Heath. David Davis, of Old-street, was fined 40s. and costs for selling milk from which 90 per cent. of the original fat had been abstracted without disclosing the fact of such abstraction to the purchaser.—Samuel Gallagher, of Old Kent-road, was fined 40s. and costs for selling milk containing 7 per cent. of added water.—George Evans, of Marcla-road, was summoned by Inspector Stevenson for selling milk from which 83 per cent. of the original fat had been abstracted. Mr. Denman fined the defendant £5 and costs.—George Bissett, of Peckham Park-road, was fined £3 and costs for selling milk from which 80 per cent. of the original fat had been abstracted.

At Oldham, on December 6, James Holdsworth, farmer, Sheepwood Farm, Longbight, near Royton, was summoned for having sold adulterated milk. Dr. Charles H. Tattersall (Medical Officer of Health for the Borough) was the prosecutor, for whom Mr. Cook (deputy Town Clerk) appeared. The defendant, who appeared in person, raised no objection to the Mayor sitting on the bench. Mr. Cook said the defendant was charged under two summonses for having sold milk to which had been added 12 per cent. of water, and from which 5 per cent. of fat had been abstracted. On the 10th of November Inspector Thomas met the defendant in the street and bought a pint of milk from him. This and a sample taken from defendant's six cows three days later were sent up to Mr. Estcourt for analysis, who gave a certificate as mentioned. Inspector Thomas gave evidence and admitted that he only paid 1½d. for the milk. He said that was an ordinary price. Defendant said he had sent a sample of the milk to Somerset House. He dealed that any fat had been abstracted. A great deal depended on what the cattle were fed with, and the milk would easily vary 5 per cent. Defendant was fined 20s. and costs for abstracting fat, whilst the other charge was dismissed.

At Breatford, on December 7th, Mr. Frederick Henry Verey, a wholesale milk-seller, of Wolverton, appeared to answer a summons for giving to Mr. J. D. Cossa, milk-seller, of Acton, a written warranty of the milk sent, which a sample on analysis turned out to be adulterated with 8 per cent. of added water and the warranty consequently false.—Mr. Walter Tyler took the proceedings under the 27th section of the Food and Drugs Act, under which he is the Inspector of the Western Division of Middlesex. It was not, he stated, under the Act, incumbent upon him to prove guilty knowledge on the part of defendant.—Mr. J. Gardner, station master of the Acton Junction Railway, said he gave evidence in a previous case on behalf of Mr. Cossa. On November 6th, he was on duty and saw several milk cans come by train. Attached to one of these was a label and at last Mr. Cossa's man took the churn away. He recognised the label (produced) as the one on the can. Milk came from the same source every day.—Thomas Allen, in the employ of Mr. Cossa, said on November 6th he went to the Acton Railway Station where he received four churns from the last witness which had been consigned to Mr. Cossa. There was a label on one can, and witness took the churns to his employer. Witness did not in any way interfere with the milk.—Mr. J. W. Barker, manager to Mr. Cossa, said he received the milk from the last witness. On one of the cans there was a label (produced). The milk was put in a dairy which was locked.—Cross-examined: When the Inspector purchased the sample the milk had been in his possession about 21 hours. He put the milk in the dairy with the other churns and the lids were taken off. The sample was purchased from the shop, but he would swear that

was milk which had come from the defendant's churn.—By the Bench: There was no possibility of the milk having got mixed.—Mr. J. Cossa gave evidence as to the contract with the defendant. The contract was that the defendant was to send him "milk as from the cow, with all its cream."—Cross-examined: He had had milk from the defendant for many years, but had never found anything the matter with it.—William Randall, assistant to the inspector, said he purchased a pint of new milk from the defendant, paying for it 2d. He handed the milk to the inspector.—Mr. W. Tyler then gave evidence. He deposed to dividing the milk, one part of which he sent to the analyst, Mr. Bevan, and was certified by him as containing 8 per cent. of added water.—Defendant made a long statement, in which he said he had never been in trouble before, for he had been sending down milk for twenty years. He urged that it was in its ordinary condition, and had been sent straight from the cow, and if it had been tampered with it was after it left his possession.—The Bench retired to consider their decision, and on their return the Chairman announced that the magistrates were equally divided, and the defendant would have the benefit of the doubt, the case being dismissed. *The magistrates had decided to recommend to the proper authorities that it was advisable that the railway companies should not persist in their regulation that milk cans should only be conveyed under the condition that the lid was left unlocked.*—The magistrates intimated that they would state a case for appeal, if desired.

Under the circumstances it would be as well for all inspectors in the future to summon the servant of the master who originally sold the milk, although it is an open question whether a warrant would not extend to such servant.

At Hull, on December 9, William Roult, cowkeeper, was summoned for selling milk which had been adulterated with nine parts of added water.—Inspector Baldock stated that on the morning of the 18th of October he purchased a sample of milk the defendant was selling in Newton-street. This sample was divided into the usual parts, and on one of the parts being analysed it was found to contain nine per cent. of added water. Mr. Duncan (Town Clerk's Department) prosecuted, and Mr. Hare defended. The latter contended that his client, who had been in the habit of buying milk from another dealer named Allison, on the morning in question went out with eight pints of milk, four obtained from his own cows, and four from Allison's, the whole being mixed together. The sample obtained by the inspector was taken from those eight pints.—Mrs. Roult, wife of the defendant, was then called and admitted having added $1\frac{1}{2}$ pints of water. Her excuse was that it was raining at the time she washed her cans out (laughter). Mr. Hare said that Mrs. Roult's assertion was entirely new to him. He had not had any previous statement from her. The defendant had told him he should be prepared to swear that his milk had not been adulterated, and contended that the blame rested on Allison.—The inspector said that he had frequently taken samples of Allison's milk, and had always found it to be pure. Two previous convictions were proved against defendant for adulterating milk, and his Worship imposed a fine of £5 and costs, remarking severely that the public must be protected from such frauds.

At Swansea, on December 16, Elizabeth Besant, a milk vendor, living at Lydney-street, Brynhyfryd, was fined £1 and costs at the same court for selling milk adulterated with 11 per cent of "skim."

At Cardiff, on December 16, (before Mr. Stipendiary Lewis) Josiah Jones, of 81, Cornwall-road, was summoned for selling adulterated milk.—Mr. Phillip David, sanitary inspector, in his evidence, said the milk was adulterated with water to the extent of 11 per cent.—The defence was that the milk was sold as received, and, in reply to the stipendiary, the inspector said on three former occasions when the milk had been tested, it was found to be genuine.—Defendant was fined £4 and costs.

MARGARINE.

At Manchester on Dec. 11, a number of summonses for selling margarine as butter were heard before Alderman Gibson and other magistrates. They were prosecuted by the Manchester Corporation, and were conducted by Mr. A. T. Rooke, superintendent of the Sanitary department. Emma Lyons, provision dealer, Moore-street, Rochdale-road, was one of the defendants. There were two charges—one under the Food and Drugs Act for selling margarine as butter, and the other under the Margarine Act for selling margarine which had not been properly labelled or wrapped up. Mr. W. L. Hockin defended. It was proved that a Corporation inspector had purchased at the defendant's shop what purported to be Kiel butter, but which, on analysis, was found to be composed of foreign fat with a small admixture of genuine butter. The defendant put in an invoice showing that she had purchased the margarine from James Doherty, wholesale dealer, Shudehill Market, and paid 1s. per lb. for it.—Mr. Rooke said he believed the defendant was innocent of any intention to defraud. The wholesale dealer was the real offender, but the Corporation had not been able to bring him into court.—Mr. Hockin said the defendant kept a small shop, which was her only means of getting a livelihood. She believed she was getting butter when she bought the article from Doherty, and in fact on the invoice it was described as Kiel. This showed that the defendant supposed she was selling the genuine article. He objected to the Corporation trying to get at Doherty through Mrs. Lyons. No doubt she might be able to sue him to recover any penalties that might be imposed upon him, but she was not in a financial position

to do so. He asked the bench not to impose a fine which would ruin her.—In reply to the bench, Mrs. Lyons said Doherty had told her he could do nothing for her. He was not paying for her defence, and she had been obliged to borrow the money for that purpose.—Alderman Gibson said he quite saw the position Mr. Rooke was in, but at the same time he believed that Mrs. Lyons really thought that she was selling real butter. The word "Kiel" meant a great deal in the eyes of an ordinary person. In his opinion, it was not right that Doherty should be got at by the Corporation through Mrs. Lyons; they should find some other means of punishing the real offenders. For that reason he did not believe they ought to fine Mrs. Lyons heavily, but he must say she had been dealt with in a despicable manner by the wholesale dealer.—Mr. Fullerton and Mr. Entwistle, two of the other magistrates on the bench, dissented from Alderman Gibson's remarks. Mr. Fullerton said it was not altogether a question of Mrs. Lyons alone, but whether poor people should be defrauded or not.—Mr. Entwistle said there was no doubt that each of the offences charged against her had been committed by Mrs. Lyons.—Alderman Gibson said the decision of a majority of the bench was to fine Mrs. Lyons 10s. and costs for selling margarine as butter, and 1s. and costs in each of the other two cases.

Samuel Norbury, grocer, Chapel-street, Ancoats, for a similar offence, was also fined 10s. and costs on one summons, and 1s. and costs on each of two other summonses. Norbury said he bought the margarine as butter from a dealer named Snee, paying 1s. 1d. per lb. for it.

Joseph Hamilton, provision dealer, 32, Nicholas-street, Rochdale-road, was also summoned for selling margarine as butter, and for not labelling it as such. Alderman Gibson having retired, his place as chairman was taken by Mr. Fullerton, and the other magistrates on the bench were Mr. Entwistle and Mr. Johnston.

Mr. Rooke explained that this was a similar case to that in which Mrs. Lyons was the defendant. The article was supplied by Patrick Doherty, a cousin of the James Doherty who had already been mentioned. It was said the Corporation officials ought to get at the wholesale dealers themselves, and they had tried to do so, but without success. They had sent boys and women to the market to buy from the dealers who were suspected of defrauding the small shopkeepers, but the dealers, seeing they were strangers, had sold them the genuine article.

Mr. Fullerton asked if the officials could not combine with the small shopkeepers?

Mr. Rooke said in the first place the shopkeepers had to be found out, and then arose the difficulty of getting them to make the purchase in the form required by the law. His department had actually followed the dealers' carts to see where they went to, and they would not relax their efforts until they had stopped this form of fraud. If the court would impose penalties he would give the defendants all the assistance in his power to recover them from the wholesale dealers by county court process.

Mr. Entwistle: It looks as if these people are in collusion with the wholesale dealers.

Mr. Rooke said he had formed the opinion that Mrs. Lyons had been "got at" since he had an interview with her.

It was then proved that the article which Mrs. Hamilton had sold as butter was made of 70 per cent. foreign fat and 30 per cent. butter fat.

On behalf of the defendant it was stated that he gave 1s. 1d. per pound for the margarine in the market.

Mr. Fullerton said they would impose a fine of £5 and costs on one summons, and a fine of 1s. and costs on each of the other two summonses.

Mr. Entwistle: It is about time to put a stop to these gross frauds on poor people.

In reply to Mr. Johnston, Mr. Rooke said he would assist the defendant to recover the penalties from the dealer.

Edward Amos, 31a, Bedford-street, Hulme, was fined £5 and costs on one summons and 1s. and costs on each of two others for similar offences. It was stated by the defendant that the margarine which had been sold as butter was bought as the genuine article from a man named Keegan, who charged for it at the rate of 11s. for 12lbs.

GEORGE F. RAMSDEN, an employé of the Edgehill and Waver-tree Co-operative Society, Limited, was summoned on December 11 for falling to label a quantity of margarine. Inspector Baker deposed to visiting the society's shop, 65, Kensington, where he found a lump of margarine on the counter, without any label. Mr. Thompson defended, but a fine of 20s. and costs was imposed.

At Sheffield, on December 6, Marsland Brothers, of 1 and 3, Catley-road, Darnall, and Henry Lilley, grocer, 17, Main-road, were each summoned for having sold, on November 5, one pound of butter which was not of the nature, substance, and quality demanded. It was decided to hear both cases together. William Henry Harrison, an inspector of nuisances, stated that he bought one pound of butter from Marslands for 1s. 3d. On analysis, it was found to contain 20 per cent. of butter and 80 per cent. of margarine.—The stipendiary remarked that it appeared to be margarine adulterated with butter. (Laughter).—Mr. A. Muir Wilson, who defended Marslands, said he thought it was right that the public should be warned as to what was being retailed in Sheffield. The butter was bought by his clients from Messrs. M. Biggin and Son, of Dixon-lane, on October 29, as "extra fine choice Kiel." The defendant paid 1s. 1½d. per lb., and retailed it at 1s. 3d. per lb. The butter was sold by Messrs. Marsland as delivered. The stipendiary asked if there was any warranty given

with the butter, and Mr. Wilson replied that there was not, only the words "extra fine choice Kiel." In his case the retailers were the persons proceeded against, and his clients could only obtain from the wholesale firm the penalty and costs by means of the County Court. The stipendiary said that when a person bought a keg of butter he should know what he was passing on to his customers. Several witnesses were called for the defence. William Marsland, one of the partners, saying that the butter was purchased on October 27, as pure Swedish butter, at 126s. per cwt. which was a fair price. The best margarine mixture was only 86s. per cwt. He had dealt with Messrs. Biggin for several years, and had no reason to doubt the quality of the butter. He received the invoice from the firm a week after the order, and as it only contained a description of the article he sent it back to have the word "guaranteed" added, which was the custom in the trade. This was refused. It was not possible to tell margarine by the taste, and they thought it was beautiful butter.—The case of Henry Lilley was then gone into.—Wm. H. Harrison, an inspector, said he purchased 11b of butter on November 5th from the defendant's shop for 1s. 3d. The article was analysed, and it was found to contain 37 parts of butter and 67 parts of margarine. Mr. A. Neal defended, and said the article was bought from Messrs. Biggin and Sons, one of the most highly respected firms in the trade in the City. He thought the firm must have been let in themselves. His client bought the butter with a guarantee on the invoice as to the purity of the article. He had dealt with the firm for 17 years, and there was nothing to make him suspicious. He submitted that the invoice was a warranty.—The Stipendiary said that he had no doubt, personally, that the invoice was a warranty.—Defendant was called, and said after the inspector visited his shop he asked Mr. Biggin if that was pure butter he was selling, and Mr. Biggin replied that for anything he knew it was.—The stipendiary said neither of the defendants appeared to wish to defraud anyone. They were the victims of carelessness, and he thought they were entitled to protection, which the warranty gave them. The summonses in each case would be dismissed; but defendants would have to pay the costs, as they had not given due notice of their defence.

COFFEE.

GEORGE MAKIN, 15, Martin-street, grocer, was summoned for having sold adulterated coffee on October 15. Mr. Sayer stated that the article was found to possess 50 per cent. of coffee and 50 per cent. of chicory. The article was sold by an assistant, and when the defendant was told what it was purchased for, he said it was sold as a mixture of chicory and coffee.—Defendant was fined 30s. and the costs.

APPEALS.

QUEEN'S BENCH DIVISION, DEC. 8.

(Before the LORD CHIEF JUSTICE OF ENGLAND, MR. BARON POLLOCK, and MR. JUSTICE WRIGHT.)
BUCKLER v. WILSON.

This was a case stated by justices.

The Lord Chief Justice delivered judgment as follows:—This is an appeal on a case stated by the magistrates of Lindsey, in the county of Lincoln, from a conviction by them under the Margarine Act, 1887, for selling margarine, otherwise than in a package marked "Margarine," as prescribed by section 6 of that Act. The facts were as follows:—Upon the hearing of the information it was proved that the appellant had entered into a contract with the guardians of the poor of the Louth Union for the supply of "good fresh butter, English"; that on Saturday, December 8, 1894, the appellant, under his contract, delivered 39lb. of butter (or margarine) at the union workhouse in Louth; that on the following Monday, December 10, 1894, the butter (or margarine) was examined by the workhouse visiting committee, and 11b. of it was, on the same day, in the absence of the defendant, divided into three parts, each part being wrapped in a separate paper. One part was taken by the master of the workhouse to the appellant's shop at Louth, and the appellant not being there at the time, the master left it with a letter, of which the following is a copy:—"December 10, 1894.—At a meeting of the house committee of the Louth Union this morning the butter supplied by you was examined, and a pound of it cut into three parts; one of such parts will be sent to an analyst, one will be kept by the guardians, and the third I have been instructed to bring to you. I am, sir, most respectfully yours, JOHN T. CROWSON, Master." The butter or margarine was sold by retail otherwise than in a package duly branded or durably marked in the manner prescribed by section 6 of the Margarine Act, 1887, and the appellant did not deliver the same to the purchaser in or with a paper wrapper on which was printed in capital letters, not less than a quarter of an inch square, "Margarine." It was also proved that by the directions of the guardians one of the sealed samples of butter (or margarine) was sent by post (registered) to Dr. Muter, public analyst for the administrative county of the Parts of Lindsey, and a certificate from him was produced, in which he stated that the sample of butter received from the guardians of the Louth Union for analysis, in his opinion, contained 75 parts of butter and 25 parts of margarine. The first point raised by the appellant was that the justices, being county

justices, had no jurisdiction to hear and determine the case, on the ground that under section 20 of the Food and Drugs Act, 1875, the proceedings should have been commenced before the magistrates for the borough of Louth, in which was situate the workhouse "where the article sold was actually delivered to the purchaser." The section runs thus:—"When the analyst, having analysed any article, shall have given his certificate of the result, from which it may appear that an offence against some one of the provisions of this Act has been committed, the person causing the analysis to be made may take proceedings for the recovery of the penalty herein imposed for such offence before any justices in petty sessions assembled having jurisdiction in the place where the article or drug sold was actually delivered to the purchaser, in a summary manner." It should first of all be noticed that the section merely says "may take proceedings," but, further, I think, that under section 27 of 30 and 31 Vict., cap. 106, and section 111 of 5 and 6 William IV., cap. 76, the justices clearly had jurisdiction. The second point raised by the appellant was that margarine was a perishable article within the meaning of section 10 of the Food and Drugs Act Amendment Act, 1879, and that under that section the summonses should have been served within 28 days from the time of the purchase for test purposes. The magistrates, however, have found as facts that margarine is not a perishable article and that the purchase was not made for test purposes. We cannot set aside these findings, as there is no evidence before us on which we could say they were wrong. It follows that the summonses need not have been served within twenty-eight days under section 10, and no contention was made before the magistrates that it was not served within a reasonable time. It is moreover, at least doubtful whether section 10 of the Act of 1879 applies to proceedings under the Margarine Act. I now come to the substantial question raised by the appellant—viz., whether compliance with section 14 of the Food and Drugs Act, 1875 (38 and 39 Vict., cap. 63), is necessary as a condition precedent to a prosecution under the Act. Proceedings under the Margarine Act, 1887, are by section 12 of that Act to be the same as prescribed by sections 12 to 28 inclusive of the Food and Drugs Act, 1875. Section 14 of the latter Act is as follows:—"The person purchasing any article with the intention of submitting the same to analysis shall, after the purchase shall have been completed, forthwith notify to the seller, or his agent selling the article, his intention to have the same analysed by the public analyst, and shall offer to divide the article into three parts, to be then and there separated, and each part to be marked and sealed or fastened up in such manner as its nature will permit, and shall, if required to do so, proceed accordingly, and shall deliver one of the parts to the seller or his agent." Now it is clear that if that section is applicable to this case its provisions were not complied with and the conviction by the magistrates is wrong. But is it so applicable? I think not, for the margarine in question was not purchased by the guardians "with the intention of submitting the same to analysis." It was delivered to them, as the case states, under a contract for the regular supply to them of good fresh butter. But the appellant's contention is that a prosecution for an offence against the Act can only be maintained where a sample has been purchased whether by an officer under the Act or by a private individual with a view of submitting the same to analysis. With this contention I do not agree, though it must be confessed the question is by no means free from the difficulty which constantly arises in construing many Acts of Parliament—namely, the difficulty of reconciling several different and loosely-drawn sections. I cannot think, having regard to the scope of the Margarine Act and to the Food and Drugs Act and to the offences set out in section 6 of the latter, and sections 6 and 7 of the former Act, that it was the intention of the Legislature that a prosecution should be confined within such narrow limits as those contended for. For example, by section 7 of the Margarine Act, "every person dealing with, selling, or exposing, or offering for sale, or having in his possession for the purpose of sale any quantity of margarine contrary to the provisions of the Act shall be liable to conviction for an offence against the Act." Could anything be wider than this? And yet, can it in reason be said to be necessary that, for the purposes of a prosecution for "exposing or offering for sale, or having in his possession for the purpose of sale" a sample shall have been purchased for the purpose of analysis and analysed as described in the Act (section 14)? The Act does not limit the initiation of a prosecution to the purchase of a sample with a view to analysis; and, having regard to the offences the Margarine Act was aimed at and to its preamble, I cannot think it was so intended. The chief difficulty is raised by sections 20 and 21 of the Food and Drugs Act, 1875, which, dealing generally with proceedings under the Act, certainly at first sight seem to imply that the formalities prescribed by section 14 have taken place. It seems to me, however, that the effect of section 21 is merely to make the production of a certificate of an analysis under section 14 of itself sufficient evidence of the facts therein stated. There is nothing in the Act to prevent the proof of an offence by other satisfactory evidence, nor is it necessary that the purchaser should obtain the certificate of the "public analyst," except where he purchases "with an intention" of submitting to analysis. Section 12 merely gives him the right on certain payments to claim an analysis from the public analysts. Finally, it may be pointed out that by section 28 of the Food and Drugs Act, 1875, nothing in the Act is to "take away any other remedy against an offender under this Act." On this part of the case two decisions were cited to us—one, "Parsons v. Birmingham Dairy Company" (9 Q.B.D., 172, 1882), in which Justices Field and Cave, not ex-

pressly, but inferentially, decided that section 14 applies to every purchaser, whether purchasing with the intention of obtaining an analysis or not; the other, "Guardians of Enniskillen v. Hilliard" (9 Irish C.L., 214, 1884), in which Mr. Baron Dowse and Mr. Justice Andrews expressly dissented from that decision. I wish to say that I agree with the reasoning of the learned Judges in the Irish case, and I entirely adopt the view of the Act expressed by them. It seems to me that to adopt the contention of the appellant in this case would be to largely restrict the operation of a salutary Act, and to exclude that class of cases of which the present is an example, where there is a contract for the delivering of provisions within the Act, which may extend over a considerable period of time, and also the class of cases in which provisions are purchased from time to time in small bulk without any suspicion at the time of purchase of any deceit being practised by the seller. I cannot think this is the true construction of the Act. The appeal will, therefore, be dismissed, with costs.

Mr. Baron Pollock and Mr. Justice Wright concurred.

Appeal dismissed, with costs.

Mr. H. D. Bonsey appeared for the appellant; Mr. Stanger, Q.C., or the respondent.

MORE AWARDS FOR JEYES.

JEYES' SANITARY COMPOUNDS Co. have received two further awards for their preparations, viz.:—British and Colonial Industrial Exhibition recently held at Manchester, where a gold medal has been awarded to them; and The Exposition du Travail au Palais des Champs Elysées at Paris, where they received a Diploma d'Honneur, the highest award, bringing up the total number of their awards to no less than 83.

TRADE JOURNALS.

WHETHER the editors or proprietors of what they themselves call the "great dailies" like it or not they are the victims of evolution, and must follow the law of nature that ordains the extinction of imperfect types. Grace testimonials, crippled children funds and the like may, for a time, bolster up their waning popularity, but they are bound to go to the wall for the reason that they serve no necessary purpose whatever effectually. Finance, racing, hardware, engineering, provisions, medicine, chemistry, the solicitor, barrister, grocer, butcher,—these and a host of other trades and professions have their own trade or professional journal, and it is well for this nation of shopkeepers that the trade journal is growing in extent and influence, as every reader taken from the rubbish served up in the politically engineered dailies is a gain for the public well-being. We welcome, therefore, the latest trade journal, *The Greengrocer, Fruiterer and Market Gardener*, published by Mr. G. Tucker, of 1, 2 and 3, Salisbury-court, Fleet-street, London. The new paper appears to supply a real want, is briskly written, well got up, and, in addition to much matter of more than trade interest, contains a quantity of information of great value to growers and distributors alike. This includes all the official returns of imports of fruit, vegetables, and nuts to this country from abroad, and also the ports at which these articles are received, and the countries from which they have been consigned. In addition, the consignees' names are, in most cases, given, so that this important information may be said to be complete up to the point of the sale of the produce. A carefully-compiled "Prices Current" enables growers to see at a glance the prices which these consignments have realised, and affords to the trader in fruit and vegetables a valuable guide to the prices he should pay for his goods in the open market. The paper is published every Wednesday at the popular price of one penny.

The trade paper can do what the *Times*, *Telegraph*, *Standard*, or the like carefully avoid. It can explain what the iniquitous public plunder by Covent Garden's ducal owner means to the vendor and consumer of fruit and vegetables, and ask why his Grace's stinking mud-salad nuisance should be any longer conserved.

The trade paper knowing the thousands upon thousands of pounds wrung from traders for fines, renewal of leases, etc., by His Grace of Westminster, can suggest that it would better besem the extortioner to make amends for those atrocities and refund the sums to his victims, than to pose as a friend of man at other

people's expense and endeavour to hound England into war to right a lot of dirty usurers called Armenians who financially have been less exploited than His Grace's Westminster tenants. If our *Daily Chronicle* and *Daily News* are eager to expose atrocities they can find as fine examples of extortion, harshness, and wanton ruin wreaked upon Englishmen, on the Portman and Westminster Estates, as would fill their columns for weeks. But Englishmen don't make such good "copy" as stinking savages or thieving Armenians in the eyes of editors of "great dailies." Hence we welcome the spreading influence of the trade journal, and the emancipation of the public from the ponderous political platitudinarian journalistic imposture, for it all tends to what we need in the House of Commons—a traders party.

CORRESPONDENCE.

THE SLAUGHTER OF CATTLE AND MEAT INSPECTION AND DISTRIBUTION.

To the Editor of FOOD AND SANITATION.

SIR,—If, as was laid down by the deputation to the President of the Board of Agriculture, it is desirable to formulate fresh regulations for the slaughter of foreign cattle, at the ports of debarkation, for the protection from disease of our flocks and herds, it is even more desirable to introduce amended legislation for the protection of human beings from the perils to which they are exposed by the consumption of meat which has not been certified by competent authority to be fit for food. At present, animals bought at the market or auction sales, are transported, sometimes with the infliction of much pain and hardship, to the great centres of population, and are then driven, for the most part, to private slaughter-houses, often situated in the most poorest and most populous districts, where the due inspection of the animals before killing, and of the meat afterwards, is surrounded with considerable difficulty. Is it not possible for the killing to be done in public slaughter-houses near to main railway stations, contiguous also to the farms where the animals have been reared, the meat being then carried, if the railway authorities co-operate, by special meat trains fitted with the necessary refrigerating chambers. The general adoption of such a method throughout the land would be for the benefit of all concerned. The pain accruing to the animals would be reduced to a minimum, the long journeys in trucks and along narrow streets would be a thing of the past, and the slaughtering would be performed in the humanest possible manner by licensed slaughterers; cattle-markets, auction sales and slaughter-houses might, by such co-operation as that suggested by the Duke of Devonshire in his letter to the Agricultural Union, be under the control of the breeders of cattle themselves, to the pecuniary gain of the farmer, and thus to the substantial advantage of the agricultural interest generally; not only would the animals be inspected before killing by properly qualified veterinary surgeons, but the meat would undergo a rigid scrutiny before being despatched to the market; butchers and their assistants, who deserve well of their countrymen for their valuable services, would be relieved, in a measure, of grave responsibilities; a continuous supply of good, sound, wholesome meat would be the boon secured for our teeming populations; and the standard of public health would be materially raised.

To further such a reform, as is here proposed, the Church Society for the Promotion of Kindness to Animals and the Church Sanitary Association are engaged in promoting a memorial, already influentially and numerously signed, and the President of the Board of Agriculture has consented to receive this memorial at the hands of a strong and representative deputation, headed by the Duke of Westminster. The Lord Mayor of York and the Mayors of Leeds and Durham have shown their sympathy by granting the use of their parlours for conferences to be held in those cities. The names of those who desire to take part in the deputation or to sign the memorial will be gladly received.

With many thanks to you for inserting this letter.—I am, your obedient servant,
REV. F. LAWRENCE, Hon. Sec.
Westow Vicarage, York, Dec. 13, 1895.

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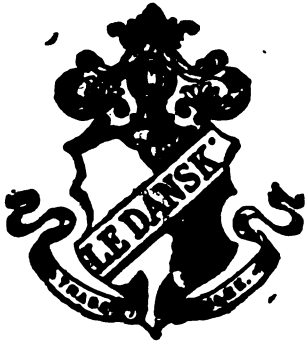
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Food & Sanitation

THE PUBLIC ANALYTICAL JOURNAL.

[Registered at the General Post Office as a Newspaper.]

Vol. VI.—No. 177.

LONDON: SATURDAY, DECEMBER 28, 1895.

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Food and Sanitation.

SATURDAY, DECEMBER 28TH, 1895.

ADULTERATION BLACKMAILERS.

It is not often we find anything in *The Grocer* to commend, but a paragraph in its last issue has our cordial approval. Our contemporary says:—

"We have had our attention called to the way in which many grocers have been defrauded by a person who styles himself the representative of a so-called anti-adulteration publication. His *modus operandi* is to select a large grocer's or provision dealer's shop, and to persist in calling there until he sees the principal or other person in authority. To him he explains that he represents a publication which gives analyses of food, and in some cases he states that the editor has had a parcel of goods purchased at the shop which he will have analysed, giving the results in his publication. He then suggests that if a fee of a guinea is paid to him the grocer's name will be placed upon the published register of those who sell pure goods. In other cases

he asks that a parcel of goods may be made up for analysis, and sent to the address which he gives, and that the guinea for the register be paid to him. We need hardly say that when the goods are given and the guinea paid, nothing further is heard from the canvasser or the publication he was supposed to represent. Formerly, we believe a single copy of the publication was sent with the grocer's name inserted in the so-called register, but subsequent inquiries showed that the copy in question had been specially "faked," and that there was no *bona-fide* publication of any such magazine as the one named. We are pleased to learn that a warrant has been issued for the arrest of this canvasser. The Institute of Chemistry ought to warn the public against paying money to charlatans who profess to give certificates of analysis and cannot produce any credentials. Grocers will do well to refuse to part with subscriptions or any other form of payment for analyses to any persons who canvass for such without being duly authorised."

The past year has seen one or two journals of very questionable character pretend to be concerned with the purity of foods, &c., and in some cases they have attempted to blackmail manufacturers of foods, &c. These journals are without reputation or circulation amongst analysts, Food and Drugs Act inspectors, medical officers, or manufacturers of food stuffs. We have had complaints that one of the blackmailing organs has given it to be understood that it has some influence with FOOD AND SANITATION. If any of our readers can help us to terminate this rogue's career a service will be done to traders and to the adulteration question.

THE AMERICAN OIL GANG'S ROASTINGS.

READERS of our exposure of the infamous practices of the American Oil gang in our issue of a fortnight ago, will learn with satisfaction that the Manchester and Salford Sanitary Association have decided to draft a memorial to the Home Secretary praying that the flashing point of illuminating oils imported to this country might be raised from 73° Fahrenheit to 100°. In connection with this subject it was decided to ask the police authorities to instruct constables to prevent as far as practicable, when lamp accidents came under their notice, the destruction of evidence of the cause of the accidents. It was suggested that if nothing was disturbed until an expert arrived, much useful knowledge might be obtained which would tend towards the removal of the causes of the numerous lamp accidents which now occur.

POPULAR SUPERSTITION AS TO PREMATURE BURIAL.

THERE are probably few more generally felt dreads than that of being buried before life is extinct; and this fear is fostered by a huge assortment of gruesome tales of alleged instances of this mishap. The well-known story, for instance, of the skeleton that was found on exhumation years after burial, with its bony hands full of its own hair, or the still more celebrated one that appears in some form in every language and literature, of the lady buried with a valuable ring who was brought to life by the rascally servant cutting her finger in order to remove the ring. The medical profession has never placed much confidence in these weird tales, although they are implicitly believed by

the laity. An English newspaper has recently been trying to create sensation for the dull season by denouncing the profession for its scepticism and its failure to invent or agree upon some absolutely unmistakable sign, test, or proof of death. More than this, the accusation is made of intentional disbelief and of an endeavour to suppress and discourage belief in such stories, because they impeach the infallibility of medical diagnosis and death certificates, and destroy public confidence in medical wisdom. According to this judgment the professional position may be thus expressed: "If we say a man is dead, he must be dead, and anyone who contradicts the statement tells an untruth."

The medical profession is denounced for never having taken the trouble to discover some absolute and reliable sign of death, which, it is argued, the profession does not care for, because people are always buried out of sight as soon as life is pronounced extinct, and they can never come back to expose the mistake. According to the same authority there is one absolute and infallible sign to which our noses would have led us long ago if we had but taken the trouble to follow them, and that is decomposition. Unfortunately for this assumption, however, this sign may appear in any part of the body to almost any extent, and involve a large part of either the external or the internal body-surface long before death, as the merest tyro knows who has seen a case of hospital gangrene, of membranous dysentery, of phagedena, or pemphigus. It is, however, a striking commentary on the vagueness of the line that divides living from dead matter that, after all these centuries of investigation, no one, nay, no two, signs can be designated, the presence of which absolutely indicates death and the absence of which positively proves life.

Nevertheless we venture the statement that, except in war-time, cases of premature burial have been and are extremely rare, and will be practically impossible in the future. In the first place, nearly all the reports of such incidents are of a luridly sensational and dramatic character, and either highly improbable in themselves or utterly unsupported by adequate evidence.

In a recent conversation a prominent undertaker, a man of national reputation in his guild, stated that he had carefully studied this question for a number of years past, and through his editorial connection with two trade journals he had either investigated personally or had caused to be investigated every report of premature burial in the United States for the past ten years. The reports were numerous and highly coloured, but in every instance they were found upon examination on the spot to be absolutely devoid of adequate foundation—in short, to use his own expressive words, to be "pure fakes." From what he had been able to glean of the history of such occurrences in the past, he was inclined to regard the vast majority of such reports as mere folk-stories and legends.

So much for the external supporting evidence of the occurrence of premature burial. The statement is both an expert and a judicial one, for even the most vividly suspicious lay mind could hardly regard an undertaker as likely to be prejudiced or biased in his view of the question.

As to the internal evidence, in nearly all of these weird stories the chief dramatic incident and the principal proof of their claim to consideration are found in active and often vigorous muscular movement on the part of the buried body, escape from the vault or tomb in some cases, and in others the discovery of the skeleton in an attitude indicative of struggling and efforts to escape. No touch is omitted that might heighten the imagined horrors of the situation and the agonies of the victim in his hopeless struggle. Now, a moment's consideration of the physiology of the situation will show that such occurrences are not only

highly improbable, but practically impossible under the circumstances. All bodily activity depends upon combustion, and combustion requires abundance of oxygen. What are the mathematics of the situation? The amount of carbon dioxide given off by the average man in the process of quiet respiration is 0.6 cubic feet per hour, and whenever the proportion of this gas reaches 20 parts in 10,000, the air becomes highly injurious to life, and when a proportion of 40 parts per 10,000 is reached death rapidly ensues. Now, the internal dimensions of the average coffin or casket are about 6 feet long, by 2 feet wide, by 18 inches deep, rather under than over these measurements, giving an air space of 18 cubic feet, of which the body occupies at least one-third, leaving only 12 cubic feet of clear air space. A proportion of only 40 parts per 10,000 equals $\frac{1}{250}$, which multiplied by 12 gives roughly $\frac{1}{20}$ cubic feet as the amount of carbon dioxide that would render the air in a coffin rapidly fatal to life. But at the rate of 0.6 cubic feet per hour it is evident that this density would be reached in one-twelfth of this time, viz., in five minutes.

The ordinary coffin, moreover, still retains the traces of an origin that has long been otherwise forgotten, in both its peculiar "coffin-shape" and its tightness, viz., the original Norse custom of burying the dead in boats or galleys sent out to sea at sunset; so that the amount of air that can penetrate its joints when the lid is screwed down is extremely small. The modern casket has lost the peculiar shape, but has added to the tightness; and, indeed, ability to render it air-tight is an especial boast. Granting, however, the highly improbable condition that one-half the carbon dioxide diffuses through these chinks as fast as it is expired, we would still be confronted by the fact that the air in a coffin in which a breathing body is enclosed would be a rapidly fatal narcotic poison within ten minutes after the lid has been fastened down—in fact, before it can be lifted into the hearse. This has been actually proved in a most ghastly manner in several curious cases, most notably in Frederick the Great's attempt to kidnap a Scotch carpenter, of gigantic stature, for his celebrated Grenadier Guards. The man was entrapped by being given an order for a coffin for a fictitious individual, several inches shorter than himself. When completed it was declared too small, and the indignant carpenter was induced to lie down in it himself, to show that it even was larger than ordered. He was at once overpowered, the lid nailed down, and the coffin carried rapidly to a deserted house, where it was opened only to find that the poor fellow was asphyxiated, although he had been confined in the box for but a very short time.

It is popularly supposed that in cases of suspended animation or trance, when there is a danger of living burial, both breathing and the heart action are entirely suspended, but the general opinion of physiologic authorities denies this entirely. Although breathing may be so light and shallow as to be really imperceptible by ordinary tests, yet some degree of respiration and oxidation must persist as long as life lasts. In the case of bears and other hibernating animals and their human descendants, trance-sleeping dervishes, while vital metabolism, with its oxidation, is reduced to a very low ebb for a considerable period, yet it does continue steadily, as the markedly reduced weight of both bears and men testifies. Whenever oxidation, vital or otherwise, occurs, carbon dioxide is formed; so that even admitting the additional possibility of the volume of respiration being diminished to one-fifth of the normal, we still find that within fifty minutes from the time of fastening down the coffin-lid the most vigorous subject would be asphyxiated, and within one-half the time comatose—in fact long before the funeral procession could reach the grave. Yet nearly every one of the legends dealing with premature burial depends for its possible veracity upon feats of muscular strength performed hours and

ays after burial. Even supposing, to take an extreme case, that a person in a state of temporary unconsciousness from a blow on the head were placed in an ordinary coffin and the lid screwed down, he would simply be narcotised by a rapid and painless process, and become unconscious from that cause within five minutes and die within fifteen or twenty minutes. There is absolutely nothing about the process to provoke a return to consciousness. On the contrary many a man has been fatally poisoned by the gradual formation of this gas in his bedroom, not only during sleep, but while awake and engaged in reading or undressing. In the case we are considering we have to deal with not only carbon dioxide, but also several other more poisonous gases formed at the same time with it.

In fine, no one need have any fear of being buried alive as coffins are at present constructed, and even if placed in the casket before life is extinct no return to consciousness is possible, and, it may be added, it is not so much being buried alive that people dread as the waking up and finding themselves buried. That this fear is a genuine and widely spread one there can be no question. Indeed, one enterprising firm has actually devised an elaborate and expensive mechanism, to prevent the possibility of such mishap. The casket is provided with air-holes and the lid is so fastened down that the lightest pressure from inside throws it off by means of springs. This, instead of being placed in contact with the earth, is enclosed in a vaulted steel chamber six feet high and nine feet long, so that the "resurrected" may not only stand up, but may also walk about in it. An abundant supply of air is provided by metallic ventilation-shafts that pass up at each end to some distance above the surface of the ground, while the same spring that throws off the coffin-lid presses an electric button connected by a wire with a large gong in the house of the sexton or caretaker; though whether it indicates the number of the grave and the nature of the occupant, and his wishes as to ice-water or towels, etc., we are not informed. The apparatus is most elaborate and costs some 200 or 300 dollars, and yet so vivid is the dread of being buried alive that a considerable sale is already reported by the inventors.

Should any of our patients still retain some nervous doubt on this head that cannot be dispelled by respiratory mathematics, there is yet another safeguard that we can assure them is absolute. This consists in the modern methods of preparing bodies for burial, commonly known as embalming. There are various processes, but all essentially consist in injecting into the veins a strong solution of some preservative, such as mercuric chloride or sodium arsenite, with which the tissues are literally saturated, at least one hundred times the fatal dose being used in every instance. Further than this, in a very ingenious method of preventing post-mortem discolouration of the corpse, a long flexible canula is introduced, by one of the basilar veins, into the right auricle, and the venous system is as completely emptied as possible by aspiration. In short, as a well-known embalmer has remarked, he would guarantee any of his subjects against coming to life again. "If by any chance they are not dead when they come into my hands, they are before I get through."

When to the sufficient safeguards of professional skill and watchful relatives can be added the proceedings of the embalmer and the air-tight coffin, the phantom of premature burial, which has walked so many centuries, ought to be laid at last in the limbo of exploded superstitions, where it really belongs.—*Medical News.*

DISEASED MEAT.

In another column, we deal with Dr. Legge's book and meat inspection abroad. Within the space of four days subscribers have sent us the cases we record below. The astounding thing about the

Colchester, Stockport and Dublin cases is that the magistrates seem to regard the poisoning of one's fellow creatures by diseased meat as an offence of the most venial type, else how can the fines of 20s. to 25 be accounted for? These are striking illustrations of how far we are behind sanitary needs in meat inspection, and of the fact that magistrates require to be educated to understand the gravity of diseased meat cases.

At Stockport, on Dec. 19, William Rose, butcher, Woodley, was fined 25 and costs for exposing bad meat for sale. The evidence of Dr. Cant, medical officer of health for the Bredbury District Council, showed that he visited the defendant's shop and found a calf hanging on a hook. This was putrid, and totally unfit for food. He drew Rose's attention to its condition. He said, "Oh, there are plenty of shopkeepers who will buy it to make pies of."

At Colchester, on Dec. 19, William George Potter, pork butcher, Middleborough, was summoned for having, on the 9th November, sold six pieces of pig's belly which were unfit for the food of man.—The Town Clerk appeared to prosecute, and Mr. Asher Prior, who was for the defence, pleaded not guilty, and asked under what section of the Act the proceedings were brought.—The Town Clerk said that the proceedings were taken under the Act of 1890, which did not require that the food should be seized, the offence being complete if it was sold in a state unfit for food. On the day in question Mrs. Martin, who lived in Albert-road, sent her little girl Hester to the defendant's for a pound and a-half of pig's belly, giving her the money to pay for it. The child brought it back, and Mrs. Martin fried some and placed it on the table for her lodger, Mr. Sadd. Mr. Sadd put a piece of the meat into his mouth, but at once went into the yard and spat it out. Under the instructions of the mother the meat was taken back by the child to the defendant's premises. The child said to defendant, "Please my mother said this is bad, and not fit to eat." The defendant took it and said, "It does smell a little faint; some of it do sometimes." Defendant gave the child another portion, which she took back to her mother, and in the end Mr. Sadd took the greater part of the meat back to the defendant, and said, "Look here, do you call this fit for anyone to put in his inside?" Defendant said, "I might have sold another dishful if I liked." Sadd then said, "I shall take it to the Police Station." Defendant replied, "Don't do that, mate; take it to Dr. Brown's." Sadd did take six pieces to the medical officer, who examined it, and said, "Oh! it is bad, it is putrid; it is astonishing what people will do for a little money." The end of it was that the meat was taken before two Justices, and one of them made an order.—In the course of his evidence, the witness Sadd described the meat as being very nearly rotten.—Dr. Brown described the pieces of meat as unsound, unwholesome, and unfit for human food.—Thomas Wells, sanitary inspector, said he had the meat destroyed.

The Chairman said it had been very clearly proved that this meat was unfit for human food, but even considering defendant's previous good character, they could not overlook the fact that he had twice supplied meat of the same quality, and therefore must have known it. An action of that sort must be stopped, as it might bring typhoid fever.—The Bench imposed a fine of £1 and 13s. 6d. costs, and the money was paid.

At Dublin, on December 19, Francis Fleet, 57, Great Britain-street, was charged by Food Inspector Halligan with having sold to Elizabeth Moore a rabbit which was unfit for human food. Mr. MacSheehy, Law Agent for the Corporation, prosecuted. Sir Charles Cameron, who was examined, stated that the rabbit was rotten and malodorous, and entirely unfit for human food. Mrs. Moore deposed that she took back the rabbit, but she was told in the shop that it was all right, and that it was fit for the Lord Lieutenant. Mr. John Ennis, who defended, said that never before was there a complaint against this old-established firm. Mr. Fleet would never allow anything of an inferior quality to be sold in his place if he knew anything about the matter. The sale in this case could only be attributed to an accident. Defendant was fined 20s.

At the Guildhall, London, on December 20, William Harvey, cattle dealer, Theale, near Wells, Somerset, was summoned, before Mr. Alderman Treloar, as the person to whom did belong four quarters of beef, which, on the 26th of November, were deposited in the Central Meat Market, the same being unfit for human food.—Mr. Vickery prosecuted on behalf of the Commissioners of Sewers; and Mr. C. H. Smith, barrister, defended.—Mr. Vickery said the defendant owned a cow which came to grief in a ditch. It was slaughtered by a butcher named Hayes, who sent it to London in two parcels in two different names. It was at once seized and condemned.—Dr. Saunders, the medical officer for the City, described the meat as being wet and discoloured, parts had been cut away in places where there were tubercles, and morbid parts had either been torn away or cut off. The eating of such meat would be highly dangerous, and the butcher who dressed it must have noticed its condition.—Hayes, the butcher, stated that defendant instructed him to send the meat to London.—A question arising as to the meat not being exposed for sale, the chief clerk remarked that the summons was for "depositing in the market for the purpose of sale."—Mr. Smith said the defendant was one of the largest cattle dealers in England, and was away when this cow was killed. When he heard what had taken place he told Hayes to "do the best he could with it." Hayes never said a word as to the condition of the meat.—The defendant gave evidence declaring that he was ignorant as to the state of the meat. He was not a butcher.—The alderman remarked that it had

been proved that the meat was bad, that it had been deposited in the market for sale, and that the defendant was the owner. He (the alderman) did not think that the defendant knew the condition of the meat, but he ought to have known. It was the duty of the magistrates to stop, as much as possible, bad meat being sent to London for human food. He imposed a fine of £30, and £10 costs.

BOOKS WORTH BUYING.

PUBLIC HEALTH IN EUROPEAN CAPITALS.

By T. M. LEGGE, M.A., M.D. Oxon.; D.P.H. Cantab. *Publishers, Swan, Sonnenschein and Co., Ltd., Paternoster-square.* 3s. 6d.

It would be hard for even the most captious critic to cavil at this book, for the perusal of even the first one or two pages shows that the reader has met an author who not only has information to impart, but knows how to serve up in an able and purposeful form. Almost everything that is of real value in assisting those concerned with public health work in the United Kingdom to realise wherein we are in advance of the principal European capitals, or behind them, has been noted by an observer whose writing shows him to be singularly painstaking and concise, and the consequence is that we have a book written by a medical man which, unlike so many of the books by medical men, is a really valuable contribution to the study of an important subject, and not an artful means of advertisement for the author. One of the things which Dr. Legge shows us they manage much better on the continent than we do in Great Britain is meat inspection, and in the light of the disgusting revelations of the last few weeks respecting diseased meat what Dr. Legge has to say may well give us pause.

"Perhaps the most striking point of difference between English and Continental methods of hygiene is to be seen in the great stress that is laid on the systematic inspection of meat by qualified veterinary surgeons abroad. It would be within the truth to say that in this respect Great Britain is at least twenty years behind Germany, France, Belgium and Denmark. Public opinion here is not sufficiently aroused as yet to the importance of the subject, nor can it be even said that the members of the medical profession have expressed themselves at all strongly on the dangers that may arise from the consumption of diseased meat. And yet the conclusions arrived at by the recent Royal Commission appointed to enquire into the effect of food derived from tuberculous animals are sufficiently startling, and it is a matter for regret, I think, that the scope of that enquiry was not extended to other diseases besides tuberculosis, so as to cover the whole question of meat inspection.

To the question: Why are they so much ahead of us in this matter abroad? the answer must be that in most towns in this country private slaughter-houses are the rule, and public slaughter-houses the exception; whilst on the continent the reverse is the case. No one can, without disgust, inspect many of the private slaughter-houses existing here. Often hemmed in by dwelling-houses on all sides, through ventilation in them is well nigh impossible; the light sometimes can but with difficulty penetrate; the floor is often altogether unpaved, or so badly paved the ground becomes sodden with blood and ordure; the walls are often made of wood that has become saturated with filth; and the lairs are not unfrequently insufficient to accommodate the animals.

And even in such towns as London, where, owing to the rigid enforcement of bye-laws, the structural arrangements are satisfactory, the great central fact remains that their distribution in different parts of the town renders impossible a systematic inspection of the carcasses. Public abattoirs having existed for a considerable time abroad, the need of a scientific control as to the healthiness of the animals slaughtered in them has become more felt. Then, again, veterinary science has always been on a higher level abroad than it has been here, partly because the veterinary colleges are State supported, and partly because more opportunity has been given to veterinary surgeons in the practice of their profession, by the numerous appointments given them as experts on meat.

Anyone who has seen the veterinary colleges at Berlin, at Alfort, near Paris, at Brussels, and at Copenhagen, and compares them with similar institutions in this country, must be struck by the difference between them. Nor must it be forgotten that Germany, owing to her contiguity to Russia, that breeding-place of plagues and pestilences amongst cattle, has been compelled to elaborate the veterinary defences of that country. The question of substituting public for private slaughter-houses, stands, I think, on a different footing from that of meat inspection. On the grounds of decency and cleanliness alone there can hardly be two opinions as to the advisability of the change. An occupation such as the slaughtering of animals, which is in many of its details revolting, and which may lead, if proper care is

not exercised, to grave nuisance, ought to be centralised as far as possible. The advantages to be derived from centralising this, and all the various processes incidental to slaughtering, such as gut-scraping, fat-melting, and extraction of the albumen from blood, etc., far outweigh, to my mind, the objections urged on the other side by the butchers. After the establishment of public slaughter-houses a meat inspection would follow, almost as a matter of course. The erection of abattoirs has preceded, as a rule, the introduction of meat inspection on the Continent.

For instance, the abattoir of Copenhagen had been in use for five years before the veterinary control was introduced to break down gradually the prejudices of the butchers. By far the most satisfactory arrangement is for the municipal authorities to take over the management of the public slaughter-houses, because it has not, or ought not to have, any other interest to subserve beyond acting fairly both to the public and the butchers."

Of course, the first question that is asked of those advocating such drastic changes is, "What about the cost to the community?" Reformers might well retort with what it costs the community who buy and eat meat preparations of the class we dealt with last week—potted meats, sausages, etc., shown to be sickening, putrid abominations. Dr. Legge adduces many excellent reasons to support our belief that of all money that is expended for public purposes, there is none so wisely and beneficially used as that disbursed for the public health work. It is only a fortnight since we had a London Vestry trying to stop the use of rotten tinned meat for highly-flavoured table delicacies. It was at the Thames Police-court, on December 13th, John Munro, Alexander Munro, and Albert Munro, of 42 and 42A, Ocean-street, Stepney, were summoned for having in their possession a large quantity of tinned food, which was unsound and unfit for the food of man.

Mr. Muir, barrister, prosecuted on behalf of the vestry of Mile-end Old Town. In a lengthy opening statement, he said if the facts on which the prosecution was based were proved it was a case of an exceedingly serious nature, because he would have to allege that the persons who were responsible for conducting the business did so after being warned that they were putting what might be poison on the market. In July, Dr. Taylor, medical officer of health for Mile-end Vestry, went upon the premises, 42 and 42A, Ocean-street, Stepney, which were then being carried on under the name of a limited liability company. The medical officer found John and Alexander Munro having control over the business, and on making a search he found a quantity of bad meat. Dr. Taylor enquired where they got it from, and was told that one of the defendants had received the goods from Tod Brothers and Co., wholesale grocers, Commercial-road, and Messrs. W. H. Bundock, Old Ford-road. Invoices were produced which clearly showed that the goods could not have been purchased as sound articles of food, for on those of Messrs. Tod were the words, "We will change anything absolutely useless to you." In addition, goods in what were called the re-manufactured state were also seized; and according to official documents the defendants described themselves as manufacturers and disposers of preserved provisions. The materials they used were manufactured goods, i.e., preserved meats. The medical officer and sanitary inspector were naturally anxious to know what the business meant, and the statement made to them, in its essence, was that the defendants made ham and chicken, which contained ham and no chicken. The latter was represented by the meats, such as tinned rabbits, and bloater paste was made with the aid of margarine and red herrings. Not only was the raw material, which was not raw in the popular sense of the word, bad; but the manufactured goods seized were absolutely bad and unfit for food. On the 26th July a company, called Palmer's Liability, was formed, without articles of association being filed, to manufacture and dispose of preserved provisions. The capital was £2,000, and there were seven signatures, which were obviously those of men who could hardly write their own names, and each of these had subscribed for one £1 share. On the 11th November last the number of shares taken up was seven; and afterwards, at an extraordinary meeting, a resolution was passed to wind up the company. When those facts had been proved he must come to the conclusion that the formation of the company was merely a cloak and device to escape from the criminal law. On the 3rd October a second visit was made by the medical officer and sanitary inspector, and those officials again saw John and Alexander Munro. In the middle of the warehouse were six tins of meat which had been opened and were bad. Other tins were opened and six 1lb. tins, packed in boxes, were found to be bad; fourteen 1lb. tins of meat, one tin of soup, and two 2lb. tins of rabbit were also found to be bad. In a place near the boiler, which was used as a coal cellar, were sixty tins of soup, all bad. They were so palpably bad that one of the defendants said it was intended to burn them up in the furnace. That was an odd method to destroy an article of commerce which contained so much moisture, and such a thing was extremely improbable on the face of it. One of the defendants said the seventy-six tins seized came from Bundock's, while the other one said they did not. On October 10 a further visit was made, and the medical officer was told the only bad food on the premises was the bloater paste. On a search being made upwards of fifty tins of bad

meat were found, and in some boxes 180 tins of potted meat of various kinds, every one of which was bad, were found. Altogether no fewer than 427 tins of bad meat had been seized, and he should prove that the case was one of the worst that had ever come before a court of justice. Dr. Taylor gave evidence, and said one of the defendants told him the goods seized were for manufacture into potted meats. Mr. Dickinson adjourned the case.

Upon infant mortality on the Continent, Dr. Legge says:—

The infant mortality in Berlin, and, in fact, in most German towns, is very high. In Berlin in 1890 it was 321 per 1,000 infants born; in Hamburg 250, while in London and Paris it was but 141 per 1,000 in 1889. The causes of this are to be found probably in the great overcrowding that exists among the poor, and especially in the nature of the feeding. When the nature of the food is considered in relation to the deaths from vomiting and diarrhoea, and inflammation of the bowels, the close relation there is between the two is seen. In 1891, for instance, in Berlin the percentage of deaths of those infants fed with human milk was 18.46, with animal milk 47.77, and with a mixed diet 52.37, showing that those fed on human milk have nearly three times as good a chance of living as those fed on a mixed diet.

The stationary condition of the population in France imposes the duty on the Government of doing all it can to protect the children who are born. The diminution that has taken place in the birth rate in France is greater than in any other country. The excess of births over deaths in the five years, 1881-1886, was only 1.37 per 1,000, whereas, during the same time in England it was 13 per 1,000, and in Germany 10 per 1,000. The total population of France has only increased by a little over half a million between 1881-1886.

Of the total children put out to nurse in Paris and the suburbs in 1892, the mortality amongst those who were spoon-fed was nearly twice that of those breast-fed.

The water supplies, drainage systems, disinfecting appliances, and methods, workmen's dwellings, etc., in use on the Continent are excellently explained, and where necessary illustrations and plans are given to make clearer the text. Upon the use of $S.O_2$ Dr. Legge is very severe.

Coming now to the question of disinfection, it may be said that abroad they are rapidly giving up the fetish of sulphur fumigation, to which we, in this country, fondly cling. In Paris, the organisation of the Service des Etuves Municipales is a most elaborate one, and small points of detail are attended to in a manner that will be looked for in vain in this country; and, indeed, let me say here that it is the minute attention to detail when once a principle is looked upon as correct, that strikes the observer most in Continental sanitation. At the time when this service was organised, in 1888, by Dr. A. J. Martin, there was absolutely no power for compulsory disinfection, and the suggestion to the inhabitants of infected houses that they should turn out of them for twenty-four hours while sulphur fumigation and the stripping of the walls was carried out would probably have been resented. The service of disinfection, therefore, offered instead to remove gratuitously and to submit to steam under pressure all infected materials, while the walls, floor, and such articles as could not be removed should be disinfected by the action of a spray of corrosive sublimate of a strength of 1-1,000, the whole operation not lasting more than one hour. The extent to which the service has increased may be judged from the fact that in 1890 only 652 operations were carried out, while in 1894 there were about 38,000. Hitherto, the operations have been carried out without any charge, but the expenses in 1894 amounted to over £12,000; and consequently, to diminish this in future, since September, 1894, a tax has been imposed for disinfecting the dwellings, which varies with the rental. Dwellings with a rental under £32 a year are disinfected free of charge; those with a rental between £32 and £40 are charged 5 francs; between £40 and £80, 10 francs; and so on. At present there are four disinfecting stations, that in the Rue des Récollets being the largest and most important. It is centrally situated, not far from the Place de la République and adjoins a night shelter. The building is divided into two distinct halves with separate entrances to each. The one half is devoted exclusively to the reception and treatment of infected articles, the other to the same when disinfected.

A wall divides the two, and, built into it, half on one side and half on the other, are the disinfecting machines. Two panes of glass are let into the wall to permit of the workmen on one side seeing what those on the other are doing. Actual communication between the two sides is arranged for by a passage divided into three compartments. The workmen who are engaged on the infected side come into the building in the morning and enter the first compartment, where they strip themselves of their clothes and put on the clothing disinfected over-night. On leaving to return home, the men pass into the third compartment, leave their infected clothing, and pass into the second, which is a bath-room. Having taken a disinfecting bath, they pass into the last compartment, and put on their ordinary wearing apparel. A mechanical arrangement prevents the door on the infected side being opened before that on the uninfected side is closed.

There are three disinfecting machines at this station, made by the

engineers, Geneste and Herscher. They are of iron, circular in shape, and provided with a door at each end.

The capacity is such that each disinfecter contains a cradle provided with three shelves, each shelf, when charged, holding a large mattress and pillows. Between each shelf plenty of room is left to allow of the steam penetrating readily to every part. When the doors are shut, steam under pressure is admitted and allowed to remain in contact with the goods for about fifteen minutes. The temperature usually reaches 239 degrees Fahr. The door on the opposite side is then opened, and the articles are removed. Should any of the articles to be disinfected by steam be soiled with blood, etc., they are subjected to a preliminary soaking in a bath.

In the morning, the men are engaged in going to the various houses to which they are directed, carrying out the disinfection there, and bringing back the goods to be subjected to steam in the afternoon. Every carriage is disinfected after each journey, and a separate service of carriages returns the goods.

I was allowed to accompany the men engaged in disinfecting the rooms, to see how the spraying with corrosive sublimate 1-1,000 was carried out in practice. The instrument used is called a *pulvérisateur*, and is made by Geneste and Herscher. The apparatus varies in size, the smaller being carried by a single man. They are not unlike the small fire extinguishers to be seen about public buildings in this country. It is a force pump, and from the long nozzle a very powerful, finely-divided spray is obtained, which is directed systematically over the walls, floors, furniture, and bedsteads, until they are thoroughly wet. Of course, other disinfecting fluids besides corrosive sublimate may be employed in the same way, such as carbolic acid or cresylic acid, in a strength of 5 per cent. Every person engaged in these operations wears a linen suit, which, after the work is over, is taken off and returned to the station. I was struck by a small but important detail—namely, that the blouses worn by the men engaged in carrying out the funeral arrangements after a death from infectious illness were left in a little tin case, and sent to the station to be disinfected. It is interesting to note that now the number of disinfections effected considerably outnumbered that of the deaths from infectious disease, showing the increasing value that the people are placing upon disinfection.

It would be unfair to Dr. Legge to take more slices from his book. Readers who expend 3s. 6d. on it will not feel inclined to say, after reading it, that the money is worth it; they will frankly admit that it is well worth the money, for, however much they may know, they will find serviceable hints and useful information in this excellent little book.

MILK AND THE DISTRIBUTION OF INFECTIOUS DISEASE.

At Marylebone, on Dec. 20, David James, dairyman, carrying on business at 50, William-street, Hampstead-road, was summoned by the London County Council for failing, immediately after the outbreak of an infectious disease on his premises, to give due notice to the Council authorities, at Spring-gardens.—Mr. Collman, for the Council, explained that one of the defendant's workmen resided in the upper part of the house where the business was carried on. On the 3rd of November the workman's child fell ill. On the 4th it was taken to a hospital, and, as scarlet fever was suspected, the child was removed back to the defendant's premises. Dr. Will was called in, and as he believed it to be a case of scarlet fever, he told the defendant so, and notified the fact to the local Vestry. On the 6th the child was removed to one of the Asylum Board Hospitals, and on the 7th the place was disinfected. Between the 3rd and 7th the child's father continued his work and the defendant continued to carry out his business as usual. Mr. Hammond, solicitor for the defence, submitted that his client had taken every reasonable precaution. The place was cleaned, and his client took active steps to get the child into a hospital.—Mr. Curtis-Bennett remarked that the essence of the charge was the defendant not having notified the outbreak to the London Council; and, secondly, his having omitted to remove the milk and the trade utensils. Unfortunately, milk was the most dangerous thing people could drink if infectious diseases were about. An outbreak of diphtheria was often traceable to milk coming from an infected district. Some time ago there was a batch of small-pox cases at Kensington, all of which were clearly traceable to one case which had broken out at a milk-shop. For the first offence he fined the defendant £2, with 23s. costs, and for the second £1 fine and 23s. costs—total, £5 6s.

ANALYSTS' NOTES.

WORCESTER COUNTY COUNCIL.

The County Analyst's Report was read, showing that sixty-two samples of food had been analysed, and four were found to be adulterated.

A discussion took place as to whether the names as well as the places of cases of adulteration should be published with the report

of the analyst. The Chairman contended that it would be a check on adulteration in the county. For many years the Royal Agricultural Society, although they were liable for libel, had published the names, and in no case had action been taken for libel.

Mr. Chance suggested that only the names of the places and the food adulterated should be published, as they would be incurring a risk.

The matter was referred to the committee for further consideration.

CAMBERWELL VESTRY.

DE. TEED (public analyst) reported that during the quarter ended September 30, the percentage of adulterated articles was 29½ per cent.—"rather a high number considering that the samples were purchased all over the parish."

ADULTERATION PROSECUTIONS.

MARGARINE.

At Wallasey, on December 18, Frances M'Dermott, 2, Tollemachestreet, New Brighton, was fined 40s. and costs for selling one pound of margarine as butter.

A WARRANTY QUESTION.

At Brentford Sessions, on December 14, Frederick Coomber, 86, Church-road, Acton, grocer and provision dealer, was summoned by Inspector Tyler.—Mr. W. A. Board appeared for the defendant, and submitted at the outset that two summonses were for one and the same offence. They related to the same article and to the very same day. The English law did not allow a man to be summoned twice for one offence.—The Chairman: Here the proceedings are under separate Acts.—Mr. Board replied that one or the other must be abortive. If the defendant sold the stuff *bona-fide* as butter, it could not be margarine, and would not require labelling; if it were margarine, there could be no adulteration.—Inspector Tyler: If it were sold as butter and contained foreign fat, that was adulteration, and under the Act margarine is anything prepared in imitation of butter.—The Chairman: We are quite satisfied as to the procedure.—The summons for adulteration was dealt with first, and evidence of taking the sample was given. The analyst's certificate showed an addition of foreign fat to the extent of 10 per cent.—The witnesses, in cross-examination, admitted the defendant was quite open and afforded free inspection of the places where he kept his butter. He had a quantity of butter in his shop at different prices, and also a quantity of margarine duly labelled. The butter from which the sample was taken was marked "a shilling."—Mr. Board contended that the essence of the offence was fraudulent intent, in support of which he cited a judgment of the High Court, that where an inferior article was marked as such amongst higher-priced goods, and sold openly and in an undisguised manner, Section 6 of the Act of 1875 did not apply.—The Chairman: We know the Act well. We do not fall in with your view. A warranty, if you have one, would be a good answer to the charge.—Mr. Board said that he also had a warranty. If not an express one, it was, he urged, such as could clearly be set up as an answer to the charge.—The defendant sworn, said that he sold butter at different prices, and margarine also. He sold it just as he received it from the wholesale firm he had dealt with for years. He bought the article in question as butter, and he received with it an invoice (produced) in which it was described as "Dutch." In the trade that always meant butter.—Inspector Tyler: We are proceeding under the Food and Drugs Act, and the warranty must be in express terms.—The Clerk of the Court: A warranty is good under either Act.—Inspector Tyler: Yes; but an invoice is not an express warranty. It might answer under the Margarine Act.—Mr. Board contended that an invoice being sufficient warranty under the Margarine Act would be so under the Food and Drugs Act, as nothing was shown anywhere to the contrary.—The Chairman: We do not agree. The Food and Drugs Act is the older one, and the later Act does not repeal it in any way. An express warranty is the only thing that will do.—Mr. Board: At all events, he sold it as he received it, and there has been no attempt at fraud proved.—The Chairman: We do not consider fraud enters into the matter. The butter, as it was sold, was adulterated, and as the defendant is not protected by warranty he is responsible. We shall impose a fine of 20s.—On the second case, the Clerk of the Court interposing, pointed out that an invoice was a warranty.—Inspector Tyler: I submit that the invoice must be strictly proved and identified with the consignment. I have had no chance of seeing the tub, and the dates should be carefully compared.—The Chairman: The defendant swears that this was the invoice received with this particular firkin.—Inspector Tyler pressed for the strictest proof, but the Chairman said that the bench were quite satisfied with the warranty, and would make no order on the summons.

At Middlesbrough, H. M. Harrington, East-street, was charged with selling adulterated butter. Mr. Barnley, who appeared for the prosecution, said he was satisfied that a mistake had been made by the defendant's assistant after washing the dishes, and that the margarine had been temporarily transferred to the butter-dish. Defendant was an old resident in the town, a thoroughly trustworthy

and respectable tradesman, and he thought justice would be satisfied by payment of costs. The Stipendiary said it would be more graceful if the case were withdrawn, and this course was agreed to.

At Nantwich, on December 16, Albert Anning, Welsh-row, was summoned for selling margarine as butter. Thomas Wright said that on November 7 he visited the defendant's shop and asked for one pound of butter. Dr. Carter Bell, after analysis of a sample, returned a certificate: "This is not a sample of butter; it is a sample of margarine." The defendant said that he certainly thought Wright wanted margarine. A fine of 5s. and costs was inflicted.—Thomas Cawley was also summoned for selling margarine as butter. Inspector Timmis visited the defendant's branch shop in Dean-street, Nantwich, on November 7, and asked for a pound of butter. He was handed an article for which he paid 1s. to the assistant, a youth named Mansell. The analyst's certificate showed that it was margarine. In cross-examination witness admitted that the margarine was wrapped in margarine paper, but the label was on the side on which the butter was laid down, and he did not see it until he had made the purchase. Mr. Whittingham, solicitor for the defence, explained that Messrs. Cawley were large shopkeepers, and hitherto no complaint had been made of the way in which they conducted their business. Mansell had received specific instructions from Messrs. Cawley that he was on no account to sell margarine as butter. The inspector had ample opportunity of seeing the margarine paper laid on the scales before the margarine was put upon it. The Bench said they were quite of opinion that Messrs. Cawley did not wish to defraud, but as there was an offence under the Act they had decided to inflict a small penalty of 5s. and costs.

At Ashton-under-Lyne, on Dec. 18, John Williamson, grocer, Oldham-road, Waterloo, Ashton-under-Lyne, appeared to answer three summonses charging him with offences under the Food and Drugs Act. Superintendent Hewitt conducted the case for the prosecution, and Mr. J. B. Pownall, solicitor, represented the defendant. Superintendent Hewitt stated that he visited the defendant's shop on Nov. 21, and asked the kind and price of what was alleged to be butter. Defendant said it was Kiel, and witness took a pound, for which he paid 1s. 3d. He then told defendant it was for analysis, and divided it into three parts, one of which he sent to the county analyst, who, on December 4, sent a certificate showing that the sample contained 10 per cent. of butter and 65 per cent. of other fats. Witness then purchased a pound of margarine, for which he paid 8d., and on analysis it was found to contain 80 per cent. of fats other than butter and 15 per cent. of water. This margarine was on one of Kilver's lard pots, and bore no label to designate it, as required by the statute. Whilst he was in the shop a girl purchased a quarter of a pound of margarine for 2d., and this was wrapped in paper without any label showing it to be margarine. Mr. Pownall, for the defence, pleaded guilty to all three charges, and stated, in mitigation of damages, that the defendant had not been in the grocery trade long, and was totally ignorant of the Margarine Act. The defendant, therefore, had erred innocently, and not with intention to defraud. For selling butter not of the nature and substance of that demanded a fine of 20s. and costs was imposed, and for the other two offences he was fined costs only, amounting to 6s. 6d. and 16s. 1d. respectively.

At Cheltenham, on December 19, George William Bullock, grocer, was summoned for selling margarine as butter, and with exposing margarine for sale without properly labelling it. Defendant pleaded guilty to the first charge, but denied his liability in the second case, on the ground that his wife fetched the "butter" from a cellar, it not being exposed until brought up to supply the purchaser. The case was proved by a constable named Allen, who stated that he called at defendant's shop and asked for "a pound of fresh butter." This was supplied to him by defendant's wife, who took some from a dish containing several pounds in weight. He paid 1s. 4d. The county analyst certified that it contained but 20 per cent. of pure butter, the remaining 80 per cent. being composed of margarine. Defendant, in mitigation of his offence, produced a receipt from a dealer which guaranteed the substance to be pure butter. The Bench fined defendant £1 and £10s 3d. costs. In regard to the second case, defendant stated that his wife fetched the substance from a cellar, and it was thus not exposed for sale. The Bench said even that was an exposure, and fined defendant £1 with 9s. costs.

At Bristol, on December 16, Mrs. Mary Ann Casely, grocer, of 70, Lincoln-street, Barton Hill, was charged on an information with exposing margarine for sale, and also selling it contrary to the regulations of the Act. The defendant did not appear. The case was proved by Inspector Beer, who stated that when he went to the shop of the defendant he saw a mass exposed on a shelf, and there was nothing to indicate that it was margarine. Moreover, the defendant served him with a quantity when he asked for butter, and further, she served it to him in a paper that was not of the stipulated marked kind. She first stated that it was a Danish mixture, and afterwards admitted it was margarine. The magistrate for the first offence fined the defendant 20s. and costs, or in default of payment fourteen days' imprisonment, and in regard to the latter they fined her 5s. and costs.

At Crewe, on December 17, Edward J. Wylloe was charged with selling margarine as butter. Phoebe Dutton said that at the instigation of Mr. Timmins she went to the defendant's shop and asked for a pound of butter, for which she paid 1s. 1d. The defendant served her, and she took the butter to Mr. Timmins. Albert Timmins said he sent the witness into the shop, and when

she came out with the butter he took it back and said it had been purchased for analysis. Dr. Carter Bell had certified that it was margarine. The defendant was further charged with having sold margarine without a label indicating its character. The defence was that a piece of Irish butter had been placed temporarily on a margarine dish, and that the defendant mistook the margarine for the Irish butter which he thought he was selling. The defendant produced the dish in which the butter and margarine had been. It was labelled "margarine." He explained that the boy had taken the butter dish to wash it, and that he placed some Irish butter on the margarine dish. The Bench fined defendant 5s. and costs for selling margarine as butter, and ordered him to pay the costs in the other case, the costs amounting to 12s.—Elizabeth Haudren, wife of a grocer in Victoria-street, Crewe, was charged with selling margarine as butter. Mr. P. Cooke defended. Phoebe Dutton said that on November 2, she went into Mr. Tundley's shop in Victoria-street, and asked for a pound of butter. The defendant asked her whether she wanted it at 1s. 3d., 1s. 2d., or 1s. 1d. She said 1s. 1d., and received a pound. There were a number of dishes on the counter, five or six of which had the word "margarine" printed on them. The stuff she had was delivered to her in two pieces of paper. Dr. Carter Bell certified that it was margarine. Mr. Cooke, for the defence, said that Mrs. Dutton really asked for margarine. She pointed out a stand which contained margarine, and said she would have "a pound of that." There had been no fraud. The Bench, while acquitting the defendant of any intention of fraud, thought there was carelessness in the sale, and fined the defendant 5s. and the costs.

AT Old Hill Police-court, on Dec. 18, Elizabeth Sidaway, Redhall-hill, was summoned for neglecting to label margarine. Mr. J. A. Hingley defended. Inspector Van Tromp said he went into the defendant's shop to inspect some weights on the 8th ult., when he saw what appeared to be butter stacked. He asked the price of the butter, and defendant replied that it was margarine. It was not labelled, and defendant said the label must have fallen down. Mr. Hindley said the offence was the result of an accident. The Bench fined defendant 26s.—Joseph Bennett, grocer, High-street, Cradley Heath, was fined 27s. for a similar offence. Defendant said that, being without printed labels, he wrote a label; but it was pointed out it could not be read by the public.

ALUM IN BREAD.

AT Old Hill, on Dec. 18, Thomas Richardson, High-street, Cradley Heath, was summoned by Mr. Van Trump, for selling bread which was found, upon being analysed, to contain twelve grains of alum to the 4lb. loaf. Sir B. Hingley: Why do traders use alum? Mr. Van Trump: It is done for the purpose of making inferior flour look white. Defendant said he had no desire to sell adulterated bread, and he was assured that the bread did not contain any alum, but a quantity of hard salt, which was in no way injurious. Mr. Van Trump said the analyst's certificate showed that alum was used. The Bench imposed a fine of 28s.

THE WATER-AT-SPIRIT-PRICE TRAFFIC.

AT Lutterworth, on Dec. 19, Hannah Childs, licensed victualler, Lutterworth, was charged by Superintendent Leach with selling brandy not of the substance demanded. Frederick Myers, son of Sergeant Myers, of Bitteswell, proved the purchase of a pint of brandy from Mrs. Childs, and Superintendent Leach said Dr. Bernard Dyer's certificate showed the sample analysed by him to be 11½ degrees below the standard allowed. Defendant said the brandy had been in the house since 1891, and she did not know it was below the standard. The Chairman, having read the analyst's certificate, asked defendant how the sugar and soft water got into the brandy? Defendant (sharply): "I never put sugar and soft water in." She, however, admitted she might have washed the measure with soft water, and omitted to dry it. Defendant was fined £3 and 13s. costs.

AT Spalding, on Dec. 16, Robert Lee Hepworth was summoned by the police for selling a pint of rum adulterated with water. The analysis showed that the rum was reduced 28 8 degrees under proof, as against 25, the greatest amount of dilution allowed. The case was defended by Mr. Wilken, of Lynn, the point being that notices were posted in the public-house that spirits were sold as diluted spirits, and no degree of alcoholic strength was guaranteed. It was stated that there were two such notices in the bar, and six notices altogether in the house. The case was argued at considerable length, but the magistrates, though not unanimous, decided that there must be a conviction on the ground that the notice had not been brought to the attention of the purchasers previous to the sale of the spirit. A fine of 5s. and costs was imposed.

MILK.

AT Marylebone, on Dec. 19, William Milan, a milk vendor, carrying on business at 21, Hall-place, Paddington, answered to a summons charging him with selling milk from which the fat had been abstracted.—Mr. Greenwell, solicitor, prosecuted for the Marylebone Vestry.—The evidence was that the milk was purchased by one of the Vestry's Sanitary Inspectors in Devonshire-street, Lisson-grove—a very poor district—where the defendant was vending it as "pure

new country milk." Upon being told that the milk was to be analysed, and being asked for his name and address, he threatened the officer with violence.—The defence was that the article was sold as separated milk, and not as new milk.—Mr. Curtis-Bennett said that the case was a bad one in itself, and it had been aggravated by defendant threatening the officer. He imposed a fine of £10, with 12s. 6d. costs, or in default six weeks' imprisonment.

AT Liverpool, on Dec. 18, William Ward, milk-dealer, 4 and 6 Oakfield-road, was fined £5 and costs, for selling skim-milk which contained upwards of 40 parts of water to every 100 parts of the poorest milk. Inspector Baker proved the case.

A WARRANT CASE.—At the Guildhall, London, on Dec. 18, Josiah Hunter, wholesale milk dealer, of Hungate House, Wisbech, Cambridgeshire, was summoned, before Mr. Alderman Treloar, at the instance of Mr. Obarles Queich, an inspector under the Sale of Food and Drugs Act, of the Vestry of St. Leonard's, Shoreditch, for having given a false warranty in writing to the purchasers, Messrs. Francis and Thomas Gibson, in respect of milk sold by him at Liverpool-street Station, such milk being warranted pure, whereas the same was adulterated with about 25 per cent. of added water.

Dr. Robinson prosecuted, and explained to the alderman that the defendant was a wholesale dealer in milk, and supplied Gibson Brothers, of Hoxton, under a contract, which guaranteed a supply of milk that was pure, fresh, and contained all the cream, at the very moderate price of 1s. 7d. a barn gallon. The milk was sent to Liverpool-street Station, and it was there analysed, when it was found to be adulterated with somewhat over 25 per cent. of added water. This was a case in which the prosecuting authorities wished to make an example, and they had therefore struck at the fountain head, as smaller milk dealers might have had the milk found upon their property, and have suffered in consequence. He (Dr. Robinson) might point out that the profit made by the defendant in consequence of the adulterations would amount to an average of about £40 since last July. Samples had been taken since November 14, and the adulterations varied from 16 per cent. to 32 per cent. Feeling that they had lost enough, and had been paying something like £40 for water, Gibson Brothers had taken these steps, as they had been jeopardising themselves, and rendering themselves liable to penalties. He (the learned counsel) therefore asked for the maximum penalty—£20.

Mr. Muir, barrister, who defended, said that when his client pleaded guilty, he did not understand that it was going to be put before the Court on the authority of a public official on public grounds as it appears to have been. The defendant was a cattle dealer and salesman, and had a herd of 35 cows altogether, and the milk that he did not use for the feeding of the calves he sent to Messrs. Gibson. In point of fact, at the time the milk in question was sent his client was seriously ill, and was unable to attend to his business. He (Mr. Muir) mentioned this to show that it was a very bad case for the prosecution to take in order to make an example. The defendant had been in the habit of supplying one of the largest dairies in London, and had always given satisfaction. An elaborate calculation had been made as to the extent of the profits on the adulterations, but it was upon totally erroneous facts. The defendant, on receiving complaint of the poor quality of the milk, had taken every precaution to remedy it, obtaining fresh cows, and even discharging his servants and obtaining new ones in case they had been guilty of adulterating the milk without his knowledge. The learned gentleman submitted that under these circumstances it was not a case in which the maximum penalty should be imposed in the matter of a first offence. It was rather one that should be dealt with in a lenient way; the defendant, in fact, intended to test in future all milk at his own dairy before its departure.

The Alderman: Why was not Mr. Hunter charged with selling the milk in this way?

Dr. Robinson said these proceedings had been taken by Gibson Brothers. It was only an inspector under the Act who could proceed for the selling, and then samples had to be taken and divided into three parts and sealed in bottles—one for the analyst, a second for the inspector, and a third for the seller.

The Alderman failed to see why the City Commissioners of Sewers could not have taken the samples.

Mr. Muir: If they (Messrs. Gibson) can prove that an unlawful profit has been made they can recover under their contract.

Mr. Alderman Treloar: I shall fine the defendant £10, and £3 3s. costs.

AT Hull, on December 17, John Fewlass, milk seller, Church-street, was summoned for selling at the hands of his wife and servant a quantity of milk adulterated with 12½ per cent. of added water.—Inspector Baldock deposed to purchasing a pint of milk from defendant's wife on November 12, and submitting a sample of it to the Borough Analyst, who certified that it was adulterated with 12½ per cent. of added water. On December 3 he saw defendant, and asked him if the milk he purchased from his wife was his. He replied, "Yes; what's wrong with it?" Witness told him it was adulterated, when he said that he did not know how it had occurred.—Mr. Spurr, for the defence, said that everyone knew there was not better milk sold in Hull than theirs, and they were at a loss to comprehend how it had occurred.—Fined 40s. and costs.

Elizabeth Moore, shopkeeper, 13, Pelham-street, was summoned for selling a pint of milk adulterated with 6 per cent. of added water.—Inspector Baldock deposed to purchasing the milk at the defendant's shop, and submitted it to Mr. Baynes, who certified that it was adulterated with 6 per cent. of added water.—The defendant said that

she only sold a few half-pennyworths of milk, and that she did not know that it was adulterated.—His Worship pointed out that she was liable; but, taking all the circumstances into consideration, he would only inflict a fine of 10s. and costs.

MUSTARD ADULTERATION AT ASHBORNE.

ARTHUR HENRY RECKLESS, of Ashborne, chemist, was summoned at the instance of Captain Sandys, inspector under the Food and Drugs Act, for selling mustard not being a genuine article, but containing 5 per cent. of wheat starch adulteration.—Evidence was given by Joseph Hewitt as to going to the defendant's shop and asking for ½ lb. of mustard on October 10 last, when he supplied to him mustard adulterated.—After hearing the evidence, the Justices recommended that the case be withdrawn, which was accordingly done on defendant paying 18s. 6d. costs.

A PUBLIC ANALYST ON THE ADULTERATION ACTS.

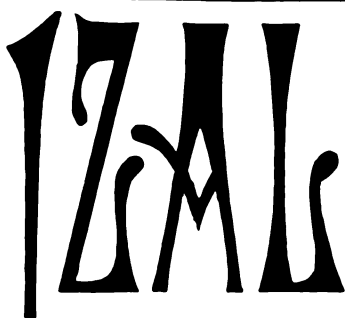
In a report just issued to the Kesteven County Council, Mr. C. E. Cassall, F.I.C., says:—
"The blue book issued with this Report contains the proceedings of the Committee, the minutes of the evidence given by 52 witnesses

comprising nearly 8000 questions and answers, an appendix, and a valuable analysis of the evidence. Much additional evidence is required, more especially from those who have a practical acquaintance with the working of the Acts, but a number of valuable facts relating to adulteration have been recorded, and some recommendations of great importance have been made. Among these may be mentioned the suggestion, originally put forward by the Council of the Society of Public Analysts, that a properly constituted Board of Reference and Control should be established, to ensure the adequate, equitable, and intelligent administration of the Acts throughout the country, to fix and vary standards of purity and strength, to lay down definitions, and to advise in matters of doubt and dispute. It has also been strongly urged before the Committee that the manufacturer of, and wholesale dealer in food products and drugs should be brought within the incidence of the Acts, and that more effective means should be provided for bringing about the punishment of offenders.

"It is well known that the legitimate trade interests and especially the agricultural interests of the country are profoundly and most injuriously affected by the various forms of malpractice which are conveniently, if not always very accurately, grouped under the term 'Adulteration;' and it may be regarded as satisfactory that both the magnitude of the subject and the urgent necessity of dealing with it in a thorough and comprehensive manner are now fully recognised by Parliament."

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