THE POSSIBLE FUTURE EXTENSION OF THE DUTIES OF PUBLIC ANALYSTS.

BY ALFRED H. ALLEN.

(*Read at the Meeting, November, 1889.*)

IN my Presidential Address, delivered at the annual meeting in January last, I called attention to the possibility of enlarging the sphere of action of public analysts. At present the duties of public analysts are well known to be restricted to the examination of food and drugs, and owing to the clause relating to the examination of articles purchased by private persons having proved nearly inoperative, a public analyst's duties are at present almost wholly limited to the examination of samples purchased for the purpose of analysis by inspectors acting officially. Even the analysis of water does not come within the official duty of public analysts, owing, as we are well aware, to the exclusion of drinking water from the operation of the Sale of Food and Drugs Act.

Owing to the publication of improved methods of analysis, to which the Society of Public Analysts has so much contributed, and to other causes with which we are all familiar, food analysis has acquired a position which none of us could have anticipated sixteen years ago. At the present time, the public analysts of the country are a body of highly competent men, whose special training, not only as analysts but as chemico-legal experts, specially qualifies them for executing the responsible duties of State chemists, and there are many new directions in which the public analyst might be employed to the advantage of the public.

It seems to me a grave public evil that the provisions of the Sale of Food and Drugs Act are not extended to include articles which do not come under the denomination either of a food or a drug. Thus, for instance, there have been successful prosecutions in some parts of the country for the sale of adulterated *olive oil*; but it seems to me doubtful whether olive oil comes under the Act, unless it is intended for use as a food or a remedy. That it is an article named in the British Pharmacopœia is not sufficient, for, unfortunately, when the Sale of Food and Drugs Act Amendment Bill was in committee in 1879, Dr. Bell advised that the British Pharmacopœia should not be formally adopted as the legal standard of all articles described therein. He did this on the ground of non-necessity, as the Pharmacopœia was already substantially regarded as the authority; but we all know how far this is from being the case in practice. Partly, this may be due to the very inefficient manner in which parts of the Pharmacopœia are edited; but if in a new Act the Pharmacopœia were made the legal Standard for drugs, such pressure would be brought to bear on the editors as would compel them to remove the blemishes which at present discredit their work.

It is very questionable, again, whether *yeast* can fairly be regarded as coming within the four corners of the existing Act, though any new Act should certainly be drafted so as to include it.

Carbolic disinfecting powders, again, are articles which are by no means always of the quality alleged. Corporations and Boards of Health suffer largely from deficient strength in the carbolic powders supplied to them; a powder sold as containing 10 per cent. of tar acids in reality often contains only 6 or 7 per cent., and sometimes

as little as 4 per cent., and the members of the general public are also very liable to get very poor value for their money and disinfectants of doubtful strength and efficacy.

Petroleum, again, is an article which might, with advantage, be occasionally submitted to public analysts. The Petroleum Act requires no alteration for this to be done, as it provides for the testing of the oil by the inspector "or other competent person selected by him," which person should be the public analyst for the district.

There ought also to be some definite control over the sale of articles containing *arsenic*, such as carpets and paper-hangings. If an Act were passed on the lines of the Margarine Act, enabling an inspector to visit shops where carpets and paper-hangings were sold, and to take for examination by the public analyst samples of any goods which were not *marked* as containing arsenic, the public would know what they were buying, and arsenical colours would soon be a thing of the past.

The same principle might be applied to *mixed fabrics*. All mixed fabrics should be labelled as such, the responsibility of labelling them to rest with the vendor.

I think that the inspectors under the Sale of Food and Drugs Act might be advantageously employed to see that the provisions of the Pharmacy Act are carried out, instead of leaving the matter, as at present, to the Pharmaceutical Society. The inspector should be instructed to ask for a *poison*, and see that the sale was properly recorded, and the name and address of the vendor entered in the Poisons Book.

It would also be a great advantage if it were enacted that all poisons sold as *vermin-killers* should be coloured with a definite proportion of some colouring matter, which could be easily detected and estimated. A few months since a man in Derbyshire poisoned his child with vermin-killer containing strychnine for the sake of the insurance money, and would not have been convicted and hanged but for the presence of a blue colouring matter in the vermin-killer. In connection with this case I received from the police a number of packets of vermin-killers containing strychnine, and I supplemented these by ten other samples, representing the chief wholesale manufacturers in the kingdom. The results of the analysis of these samples showed that ultramarine was the colouring-matter most commonly used, though Prussian blue occurred in several cases. Carmine was also present in several, and one specimen was wholly colourless, consisting merely of a mixture of strychnine and starch. In two other cases the colouring-matter was only sufficient to tinge them a very pale flesh or pink colour. One sample only was coloured with soot. It seems to be very important that vermin-killers should be so coloured as to preclude the chance of their being taken accidentally by human beings, and so as to facilitate their detection in cases where they have been swallowed, whether they may have been used for the purpose of suicide or murder.

At present, *arsenic*, if sold in quantities of less than 10 lbs., has, by law, to be coloured with soot or indigo, though it is a fact worthy of note that the solid arsenic found in the house of the late Mr. Maybrick was all coloured with wood-charcoal. Carbon, in any form, is not a suitable colouring-matter, as, in small quantities, and in presence of miscellaneous organic matter, it is difficult to identify, and indigo is too susceptible to oxidising and reducing agents to render it a desirable pigment. Prussian blue and ultramarine each have their disadvantages, and a mixture of indigo, Prussian blue and ultramarine would be better than either of these colouring-matters separately.

On the whole, perhaps, the most suitable pigment for colouring vermin-killers would be the oxide of chromium. In it we have a bright green pigment of high colouring power, quite insoluble in water and in dilute acid and alkaline liquids. It is wholly permanent under all imaginable conditions, and is not affected by ignition. Chromium is not a natural constituent of the body, is not used internally as a medicine, and is not liable to be present accidentally, even in traces, in any beverage or article of food. It can be detected and determined with ease and certainty, even when present in very minute quantity. Owing to its insolubility, oxide of chromium would remain wholly unabsorbed if taken internally. Hence, if it were added to preparations of strychnine in a definite and invariable proportion, say 20 per cent., an estimate of the *minimum* amount of poison taken by the deceased person¹ could be arrived at by determining the quantity of chromium contained in the alimentary canal, even though the poison itself had been wholly absorbed or decomposed; and this could be effected with equal ease and certainty after prolonged inhumation, or even after cremation of the body.

But it would be useless to enact that all preparations of arsenic, strychnine, and other deadly poisons sold as vermin-killers should be coloured with a definite proportion of mineral pigment, if the sale of fly-papers, containing a dangerous or fatal dose of arsenic or other poisons, is to be permitted with impunity. All such fly-papers should be impregnated with some soluble colouring matter, which would colour the water in which they were soaked. But organic colouring matters are less suitable for the purpose in question than certain inorganic colouring matters. Of these the soluble salts of chromium present several advantages. Thus, if in the form of the double tartrate of chromium and potassium (or a mixture of chrome-alum and Rochelle salts) the chromium is not precipitated from its solution by alkalies, acids, sulphuretted hydrogen, sulphide of ammonium, or phosphates, or carbonates of the alkali metals. On the other hand, the chromium will not interfere with the detection and determination of arsenic, strychnine, and other poisons, and can be itself determined with ease and accuracy after evaporating the liquid to dryness and igniting the residue. Hence I hold that it is highly desirable that a law should be passed compelling the colouring of vermin-killers, fly-papers, etc., with an indestructible colouring matter, the quantity of which should bear some definite proportion to the active poison present; and I think public analysts might be advantageously employed to see that such a law, when passed, was enforced.

The directions indicated are only some of those in which it seems to me public analysts ought to look in the future for the extension of their duties. In fact, a public analyst of the future ought to become a State chemist, who should be officially consulted on all subjects within his province. There is much to be done before we can look forward to public analysts occupying such positions; but this is a greater reason for endeavouring to promote our ends. Personally, I have alluded to the desirability of extending the present acts relating to sanitary chemistry in several of my quarterly reports, and I believe some few other analysts have done the same, but I am afraid many public analysts have failed to recognise, or at least to use, the opportunity afforded by these quarterly reports of ventilating subjects of the kind.

We may accept it as certain that during the next Session of Parliament the Government will initiate some new legislation dealing with the sale of poisons; and the occasion may serve as an opportunity for urging on them the importance of making some modification in the Sale of Food and Drugs Act, and other laws relating to sanitary chemistry. It is highly important, therefore, that we should not wait for the Bill dealing

with the subject to be drafted by some one who will ignore our existence, as has happened on more than one occasion, but that we should ourselves draft a Bill embodying our views, and which may form the foundation of the legislation we hope for.

That the Society of Public Analysts can do much in the suggested direction is certain, if the members will all pull together and act as an impelling force instead of as a drag on their representatives. The Society has done much in the past, in spite of lukewarm support from many of its members, and more or less open opposition from the outside. The importance of possessing an organisation such as ours has been shown recently in several instances. In short, the Society of Public Analysts, though primarily a scientific society, has other duties to perform, including the guidance of Parliamentary work in connection with the subjects already referred to, and the amendment of the Sale of Food and Drugs Act generally; the discussion of legal points affecting us as public analysts; the assistance of our members in cases in which our common interests are concerned; and in a host of other ways.

DISCUSSION.

Dr. SEATON said he thought Mr. Allen's paper was a very valuable and suggestive one as it affected health. The Food and Drugs Act was passed primarily in the interests of health; all the matters touched upon related to health, like colouring-matters, carpets, and so on; and these would seem to be matters that public analysts would be doing good service in reporting upon. Then Mr. Allen had referred to the very important influence they might have in helping to carry out the provisions of the Pharmacy Act. He lately had had to confer with a well-known firm of chemists about a new disinfectant being introduced; it was one that contained a large amount of perchloride of mercury, which, no doubt, could be bought easily, in the same way that vermin-killers could be bought at unauthorised places. There should be some check upon that. Chemists and druggists were bound down by hard and fast rules with regard to the sale of poisons, and other establishments should be watched which are not under the same regulations. The colouring-matter in this case was very distinct, and the remarks which Mr. Allen made with reference to the importance of adopting some colouring-matter which would bear a definite proportion to the poison were, he thought, such as would recommend themselves to others, and of a very practical nature.

Mr. CASSAL said that he thought Mr. Allen's paper was exceedingly important from the point of view of the development of public analysts. Such a development was precisely what was, at the present time, most urgently required; but it would be difficult to obtain without the better instruction and enlightenment of the people who were entrusted with the appointing of public analysts and with the enforcement of the laws against adulteration. Mr. Allen's suggestions did not go quite far enough, but, at any rate, before they could be properly adopted the general state of things at present existing would have to undergo considerable alteration. It would be necessary to teach the public that the sum of 10s. 6d. was not the right measure of the value of an analysis; they would have to endeavour to get that most objectionable clause, which, perhaps, more than anything else, had tended to injure public analysts and to lower their *status*, struck out of the Act of Parliament. There could be no question that a great extension of their duties as public analysts would ultimately come about, but the attainment of this result would not be greatly hastened by discussions in their own body which were not followed by some sort of united action. They wanted additional legislation, or, at least, the extension and amendment of the present laws in the necessary direction. As a matter of fact, every public analyst knew that the majority of local authorities looked upon the "analyst" as a sort of necessary nuisance, who was to be paid the smallest

possible sum for doing the smallest possible number of samples. This was occasionally varied by the payment of the smallest possible sum for the analysis of the largest possible number of samples. It was certainly the duty of the Society to consider as to the best means of improving the position of the public analyst, but the Society was not powerful enough to do what was required. He could not agree that it was even strong enough to afford really adequate support to public analysts in their struggles and difficulties with local authorities. A more powerful body was necessary for this. The extension of their work in the direction of the examination of disinfectants, water, gas, and so forth, was plainly what they were entitled to expect. All such work should be placed in the hands of public analysts, as official chemists. The examination of gas, for example, was at present carried out in the metropolis by a very limited number of "gas-examiners," who were paid an absurdly small remuneration for the work. In the provinces it was practically not carried out at all. It was true that gas was occasionally examined by medical officers of health, and there was the curious fact that these officers also examined water. This led him to another question, that of combined appointments. It would be necessary to put an end to the combined appointments of public analyst and medical officer; it was a thing which led to abuses of all sorts—the farming out of the public analyst's work to a cheap chemist, or of the medical officer's work to a cheap doctor. The holding of combined appointments would have to be strongly discountenanced and, as far as possible, prevented. The subject was one of very wide scope, and he should be glad to hear the opinions of all his colleagues upon it. The future of public analysts largely depended upon their clear appreciation of the position which they held with regard to the public, and the extent to which they might be able to impress the public mind with the enormous importance and the heavy responsibility of their work. A practical suggestion which he would venture to make was this, that every public analyst, whether he was in close contact with his local authority or not, should take every opportunity of instructing that authority upon matters relating to public analysis, with the main view of getting it to work upon the legislature. By united action of this kind all over the country, it was obvious that considerable effects might be produced, which would not only be valuable from a professional point of view, but would be of the greatest service to the public. He suggested that the discussion should be adjourned, so that they could be prepared at a subsequent meeting to enter into a thorough examination of all the points raised.

Mr. DYER said that since the Parliamentary Committee was appointed there had been no occasion to call a meeting; they were not appointed with general instructions to force their opinions upon the legislature, but to deal with definite matters that might arise. While Mr. Cassal was speaking he could not help thinking that that gentleman might have given a little more point to the fact that every rule had its exception. Their worthy President was a public analyst, and was also one of the ablest and most energetic medical officers of health in the country, and after what had happened that evening (referring to Mr. Adams's paper on a new form of air-bath), he (Mr. Dyer) thought they had had a very recent illustration of the practical skill and competence of an analyst in a medical officer.

Mr. CASSAL said that of course he had not had the slightest intention of casting reflections either upon the President or upon Dr. Seaton. He considered that the existence of these combined appointments was injurious to both professions. Among other things, it resulted in this, that the work of one of the two offices was generally not paid for. Certain local authorities got one man to undertake the work of two distinct offices for the pay which should attach to one of them. It therefore appeared to him to be detrimental to the interests of both public analysts and medical officers of

health, that they should hold combined appointments, and he thought the two professions ought to unite in discountenancing them.

After other remarks, and it appearing to be the general opinion of the meeting that the matter should be adjourned, some discussion took place as to the precise terms of the motion, and after various suggestions had been made, it was ultimately resolved, on the proposal of Dr. MUTER, seconded by Dr. JOHNSTONE, "That Mr. Allen's paper be printed and circulated with the agenda for the next meeting, and that the discussion be adjourned until that meeting."

RESUMED DISCUSSION ON MR. ALLEN'S PAPER.

The PRESIDENT said that at the last meeting, after a considerable amount of discussion, it was thought better to adjourn it until that evening, and it seemed to him that it might be conducted under three different headings:—

1. Whether it was desirable to promote the wider scope of public analysts duties?
2. If so, could the Society of Public Analysts wisely take any public action in the matter?
3. Whether the present was a good time to take any such action?

MR. HEHNER, before entering into the discussion, read the following extracts from a letter of Dr. A. Ashby:—

"I have received the proof of Mr. Allen's paper. I hope he is not going to agitate for water to be brought within the scope of the Sale of Food and Drugs Act. If it is, we shall not only have an indefinite amount of water analyses forced upon all those public analysts who are paid by fixed salary, but we shall have the general fees for water analysis levelled down to Dr. ———'s fee as advertised in the *British Medical Journal*. I think it is of immense importance that water should be rigidly excluded from the Act; if included we should be laid open to having much work in that direction thrust upon us for nothing, or next to nothing."

Mr. HEHNER then said, that the President having laid down for discussion three questions, he should like to see them answered by the Society as follows:—1. It is *not* desirable to extend the duties of public analysts. 2. The Society should *not* take any action in the matter, and 3. The present time is *not* opportune should any action be deemed desirable.

The Sale of Food and Drugs Act comprised all food and drugs used by man; the Act could not well be wider than it was at present, unless all commercial articles were included in it. These were at present satisfactorily dealt with by commercial men interested in them, and by analytical chemists generally, of which division of the profession, public analysts were, after all, but a very small part. Public analysts certainly could not fairly agitate to obtain by law, the work which belonged rightly to the analytical chemists of the country. If they did, they would lay themselves open to the charge of being both needy and hungry, and wanting that which did not belong to them. Were for instance, cattle foods brought within the Act, he had no doubt that those analysts who now controlled the cattle food supply of the country in a most able manner, and to the benefit of the public, would decidedly object to having their work, which they had acquired by their own industry, taken away from them. The same observation applied to petroleum, and many other articles of commerce now analysed by private, not public analysts. As regards water, it was only by the exertion of the Society of Public Analysts that it had been specially excepted from the Sale of Food and Drugs Act, to the benefit of analysts generally.

An unavoidable consequence of widening the Act would be a general depression of fees, which were already now, in most cases, utterly inadequate. This state of things had been brought about by the Sale of Food and Drugs Act. That Act stipulated, that a public analyst should, for a fee of half-a-guinea, analyse any article of food for any private individual. The Act intended, that a salary be paid by the appointing authorities to the analyst, to enable him to do the work for so low a fee. The public, as all were aware, had taken no action whatever, appointing authorities hardly ever did pay salaries, and yet the fee, the official and now generally accepted fee, had been brought down to half-a-guinea for each sample, while formerly two guineas were generally obtained. As a set off the number of samples analysed had certainly much increased. It might be said, that there was no need to mention any fee in the proposed new Act, but he contended, that the half-guinea fee had now become so general, it had become so burnt into the mind of the public, that there could be no hope of obtaining a higher fee, in future. As commercial analyst as well as a public analyst, he therefore objected to any extension of the Food and Drugs Act.

The Society certainly should not take any action. The men who were directly interested in this matter could not well agitate for more work; they would only make themselves ridiculous if they did so. If there were a public agitation, and if to meet a public want a new Act were passed, then of course public analysts would be ready and glad enough to obtain more work.

No time could be more inopportune than the present. Parliament was almost at the end of its natural life, and occupied with other matters. He doubted further, whether any Government, Conservative or Liberal, would risk to make as many enemies as the passing of such an Act would be sure to make. All manufacturing classes would be against it. It should be remembered, that when the Adulteration Act was passed, it roused so much opposition to the then Government, that it was one of the main factors which led to its overthrow. The next Government at once appointed a Committee, and the present Food and Drugs Act was the result. No Government would risk to burn its fingers over such a question again.

He hoped, therefore, that the Society would meet the three questions with a distinct negative. Yet he thought that the subject was one which should be fully discussed by public analysts.

MR. CASSAL agreed with Mr. Hehner in thinking that the present time was inopportune for taking action, and that it was undesirable for the Society to move in the matter in any official sense, at least at present, but he could not agree with him in the view that an extension of official public analysis was undesirable. He considered that it was desirable in the first place for the benefit of the public, and desirable also for professional reasons and in the interests of both public and private analysts. He could well understand that some members of the profession engaged in commercial analysis should, at first sight, view the extension of official analysis to other articles besides "foods and drugs" with disfavour, but he did not think that they would do so after fuller consideration. The public did not appreciate the value of analytical work. They were ignorant, and could hardly be expected to do so. The inadequate manner in which analysts were paid was largely due to want of proper appreciation of the value of the services rendered, and to a want of proper respect for the professional man who rendered them—in fact, to public ignorance. His belief was that an extension of official work would tend to educate the general public more than anything else. It would gradually show them the great importance of the work, and accordingly would lead to a better appreciation of those who did it. As to the 10s. 6d. fee, he had stated on the last occasion that before any extension of the duties of public analysts was brought about, it would be necessary

to destroy the commonly-accepted and highly-convenient notion that this sum was the proper measure of the value of an analysis. If this could not be done, and if it was to be officially laid down that such a fee was a proper one for any analysis whatever, then he agreed with Mr. Hehner that any extension was very undesirable. But it was necessary to make local authorities and the public, clearly understand the facts about the 10s. 6d. fee. It was a nominal fee, intended to bring the services of an officer in the receipt of a proper salary, and in consideration of such salary, within the reach of persons of moderate means, and at the same time to place some sort of check upon the large class of persons who would willingly make use of the services of a public officer—or of any one else—if they could get them for nothing. It was not intended as a basis upon which the salaries of public analysts were to be calculated, or as a typical fee to be paid to a private analyst. But they (the analysts) had themselves to blame for not uniting together to demonstrate these facts in a practical manner to all those whom it might concern. He was most anxious to see some sort of combination among analysts with respect to their common professional interests. Hitherto they had segregated rather than aggregated in reference to these matters, and had accordingly been taken at a disadvantage. Medical officers of health had succeeded in getting a rather better appreciation of the value of their services than had hitherto been obtained by public analysts. The reasons for this were not far to seek, and it was important that the lesson should not be lost upon analysts. It was through the influence that could be exerted by the public analysts, the only officially recognised chemists, that the profession generally might be benefited. It was a mistake to suppose that an extension of official work would injuriously affect private analysts. On the contrary, it appeared to him to be obvious that the effect of such extension would be entirely the other way. In addition, anything which tended to show how great was the importance of properly conducted analytical work to the community, would plainly be beneficial to the profession, and nothing could accomplish this more satisfactorily than the extension of the work of public analysts, who were in contact with the public and with public authorities, and whose results, in consequence of their position, became public property, and were spread over a wide area. But it was essential that they should be united in resisting all attempts to minimise their position or to detract from the value of their work, whether those attempts were made by individuals or by public bodies. He felt that while the extension of the machinery of the Sale of Food and Drugs Act so as to comprise other articles, would be attended with many difficulties, and would meet with much opposition, it was their duty to take steps when the proper time came, as it probably soon would, to secure the analysis by public analysts of certain articles, the unrestricted sale of which was dangerous to the public health. Among these might be mentioned arsenical pigments, articles of clothing, of decoration, and for other purposes, containing arsenic and other poisons, so-called patent medicines, various quack preparations, “disinfectants,” falsely so-called, and so on. They would not get everything at once, and more attention was likely to be paid to matters involving injury to health. The subject was an extensive one, but he thought that it would be well if the Society could arrive at a decision on the question of the desirability of extending public analysis. He did not think that their taking unofficial action when the time was ripe for it, would have any of the bad consequences which had been anticipated, or that it would be in any way derogatory to their dignity as professional men. It could not be denied, at any rate, that an extension of public analytical work would be a good thing for the public.

Mr. Cassal stated subsequently that he thought he ought to apologise to the Society for having read a paper at Worcester recently upon “The Extension of Public Analysis,” inasmuch as this discussion would have probably led him to modify some of

the views he had expressed in that paper, if he had heard it previously. If he had thought that the sum of 10s. 6d. was likely to be introduced as the measure of the value of an analysis in any Act extending public analysis, he would have burnt his Worcester paper without hesitation. He was very anxious to impress upon the Society that no extension should take place unless the 10s. 6d. fee and the 10s. 6d. spirit were got rid of. He adhered to his original view that the only real way of advancing general professional interests was through the influence which could be brought to bear by the official public analysts. The curses of their profession had been, and still were, a want of mutual confidence and a want of united action. If once they got the importance and responsibility of their work more adequately recognised, great benefits would be derived not only by the analysts in this country, but by the profession in every part of the world.

MR. DAVIES said that it appeared to him that such an extension was eminently desirable, and he did not think private analysts would view it with the feelings indicated by Mr. Hehner. The direction in which he thought that they might advance was more particularly that of official analysis—such analysis and analytical investigations as were directly of use to the public, and brought to the public analyst by the vestry or the authority by whom he was appointed and for whom he was working. It appeared to him that the question of public risk was one that mainly belonged, in no small degree, to the public analyst, who, after all, worked in the interest of the district, as much as the medical officer of health, or the vestry clerk, or the surveyor, and he did not go outside his duties if he endeavoured to bring about a systematic examination of those articles that were largely used by the public, and brought such examinations into line with his ordinary duties as they at present understood them.

The directions that particularly occurred to him then were the analysis of papers and fabrics that might contain arsenic or other deleterious matters, and disinfectants, and what was now done irregularly by some authorities might be done regularly.

Respecting other matters, such as petroleum, he was not by any means sure that it would be an advantage that that article should come under the public analyst's province, and with regard to the Pharmaceutical Society's functions as to passing it did not appear to him that it would be useful to transfer them to the public analysts. As to whether the Society of Public Analysts should take action he agreed with Mr. Cassal and Mr. Hehner that it would be inadvisable for the society to consider such a matter at present. The time was not a proper one, nor was the Society at all in a position to usefully move in the matter.

MR. DYER said that he had had during the day the pleasure of a conversation with Mr. Heisch, who was struck with what seemed to him like a lament on the part of Mr. Allen, that water did not come within the official duties of a public analyst, seeing that it was solely by the anxious persistence of the Society years ago that water was excluded from the Act. As originally drafted the Bill included water, but the Society's then Secretaries, Messrs. Heisch and Wigner, made such representations to those who had charge of the Bill, that the clause was withdrawn; and that was done in the interests of public analysts. As Mr. Heisch pointed out, the public analyst of a district was naturally the man who got the work in his private capacity, and as a rule he got more for it than if his fee was fixed by the Local Board and under the Act of Parliament. With regard to the question of arsenic, there was a bill in existence which had been very carefully drafted, and dealing with it very much on the lines of the Acts of other countries. It had been prepared by the National Health Society, who were awaiting a suitable opportunity to introduce it into Parliament. Care was taken that the official chemist should be the public analyst of the district in which the samples were taken—

wall papers, toys, and so on. Also that the Sale of Food Act should be read as part of that bill as regarded sampling, analysis, and procedure. The bill would be introduced into Parliament at some time or other, but they had been advised that the present moment was inopportune for dealing with the question. Mr. Allen said that Corporations and Boards of Health suffered largely from deficient strength in the carbolic powders supplied to them. Why should they suffer? They were made up generally of business men, and why did they not submit the powders to the analyst and have them analysed? An Act of Parliament was not needed for that as was the case with food and water and milk, or arsenical wall papers where the State might properly step in. But with Corporations and Boards of Health who send out invitations for tenders and have samples and guarantees, why should an Act of Parliament be necessary to enable them to have these things analysed.

Mr. SMETHAM said he was not a public analyst under the Act, and therefore in stating his opinions he did so from an outside point of view. He had listened to what had been said that evening and had come to the conclusion that it would be undesirable, unless some provision could be made to raise the fees, to bring into the Act all these outside substances suggested by Mr. Allen. As Mr. Dyer had pointed out, Corporations and the public at large were pretty well able to take care of themselves as far as the money value of substances was concerned, but not as regarded the wholesomeness of the food they consumed. But the Act was brought into existence more particularly for the protection of the lower classes who were totally unable to guard their own interests, and therefore the State considered it its duty to protect them against the injury to health caused by the fraudulent devices of unscrupulous dealers. The question seemed to resolve itself into what Mr. Allen had called "State Chemists." It was really more a question, if carried to its ultimate limits, of the introduction into England of men who would undertake the whole of the work that might be required from a chemical point of view. He thought that if such men were appointed it would tend in some instances to bribery and fraud. More important still the inspection would hamper the various trades and industries now in existence. Of course, personally, he had no sympathy whatever with fraudulent devices or any adulterations, whether it be soap or what not, but it was certain that the cheaper articles which, as he understood, Mr. Allen would keep a control over, although adulterated were sold as a rule at their relative market prices and the public practically was not cheated. So far as the extension referred only to the protection of health, testing wall papers, etc., then he was certainly in sympathy with Mr. Allen, and the extension he advocates, but when he goes beyond those limits, and seeks to keep a control over ordinary commercial manufactures having no bearing on the public health, he thought Mr. Allen was going beyond the province of the public analyst.

Dr. VIETH said that in his opinion it would not be opportune for the Society to move in the direction suggested by Mr. Allen. Referring to Mr. Cassal's remark, that they should endeavour to impress the authorities on certain points, one point should be the desirability of magistrates imposing heavy fines where adulteration was proved. Another point was for the authorities to direct the inspector where and when he ought to take samples. He had a particular case in view. They all knew they could pretty easily detect the adulteration of milk with water, but it was most difficult to prove to the satisfaction of the magistrate the abstraction of cream. And as long as samples were taken in the streets that would be so, and if a fine were imposed it might be on the wrong man, some poor fellow who could not protect himself. Samples should be taken not only in the streets but at railway stations. It was only two nights ago that forty churns of skim milk were unloaded at one of the termini, evidently intended for mixing with whole milk. He had it on the authority of

an eye witness that a churn of skim milk was divided amongst different churns of whole milk which were not quite full, and, of course, sold as whole milk. If inspectors could take samples at railway stations they would soon put a stop to that sort of thing.

Mr. S. HARVEY said that he felt disposed to give the paper his cordial support, as Mr. Allen had put his finger upon several weak points. He had been somewhat puzzled by the nice distinction drawn by a previous speaker between the advisability of legislation as regards arsenical papers and fabrics, and the non-interference with such articles as soaps and disinfectants. With reference to the latter, it appeared to him that when they were deficient in antiseptic properties they were at least indirectly injurious to health, because they were assumed to possess specific purifying effects, which did not really exist, and that thus the public would be misled. Referring to soaps, he was an observer some years ago of the effects following the introduction of a softened water supply to a borough previously dependent upon very hard well waters, severe eruptions both upon face and hands became, for a time, common, and were attributed to the caustic lime used in the softening process. His observations induced him to regard the use of impure and cheap scented soaps as the real cause. On the other hand he was personally opposed to over-legislation instancing the regulations at present affecting the sale of poisons. An experience of more than thirty years as a pharmacist had convinced him that the public were better protected, so far as chemists were concerned, prior to such legislation, than at present, when so many poisons were really more accessible than they were at the hands of outside dealers. When accidents happened, the latter were seldom, if ever, censured, while chemists were often exposed to most vexatious persecution, even after compliance with all the regulations enforced by the Act.

Mr. E. G. CLAYTON said he thought it would be a mistake from all points of view for the Society to move for this legislation. It would be bad for all parties—for public analysts as well as private analysts. For instance, if water were included at a legalised fee of (say) a guinea, public analysts would be compelled to make these laborious analyses for that sum, and other analysts would have to do the same.

Mr. ADAMS said that with regard to fabrics, wall-papers and perhaps other things there was great room for improvement so far as the public were concerned, but as to other matters he could not agree with Mr. Allen, as others had been unable to agree with him that evening. As to the first point, whether it was desirable to extend the Act, he agreed so far as the substances mentioned were concerned, but whether it was a proper time, or they were the proper body, he had his doubts. Their being only a small body, it would be difficult to persuade the public that they were not acting a self-interested part. All they could do was to stimulate the authorities through members of Parliament and others. With respect to the time, he thought it was very inopportune. The Public Health Act, generally speaking, was not welcomed by the public at large, nor by the public bodies who had to execute the Act against the inclinations of the general public. In witness of that he might appeal to the fact that where public analysts were appointed by small bodies, the analyst got very little work. This meant that the appointing bodies were against the working of the Act, and they only reflected the feeling of their constituencies. It was only by large bodies, unshackled by trade associations, such as county authorities, that the Act was vigorously worked. For that reason he thought they might assume it was unwelcome and would be unacceptable in a Parliament the members of which would have to look about them for popular favour when they went before their constituents. The proposal must not come through their body, but from members whom they could personally influence, and not at a time when Parliament was on the eve of a change. With regard to water, he did not wish to see

it included in the Act, but would very much like the examination of water to be made a local business, for he was positive that no one in England knew better than he himself did as regarded the water in his neighbourhood (Maidstone), and others no doubt were in a position rightfully to say the same for themselves, and from that point of view it would be better that it should be the duty of the public analyst to examine it; but on the other hand he should be ashamed to see the fee reduced to such a ridiculous and totally inadequate sum as 10s. 6d. There were several points which had been raised on which he should have liked to say a few words. One was the National Health Association, and he hoped they might congratulate themselves that it was still in existence, and at all events, and it is to be hoped, in earnest, in bringing forward the question of arsenical poisoning. With regard to disinfectants and soap, he was in sympathy with Mr. Harvey. It was of the greatest importance that the public should be informed of what they used in the dire necessity of an outbreak of fever, although his own experience as medical officer of health led him to place less and less faith in disinfectants.

MR. ALLEN, in reply, said it was not to be expected that everyone would agree with him on all points, but he thought he might safely leave one half of his critics to answer the other half.

He had been misunderstood on one or two points. He never intended to suggest that drinking water ought to be included in the Act. He simply mentioned that it was not included at present. Of course there were some instances where, according to the terms of the appointment, the analyst was expected to undertake analyses of water for Sanitary Authorities in the district for which he acted; but in such cases he believed there was always a special fee allowed. In fact, he was by no means in favour of the 10s. 6d. fee for food analysis, and he thought that one of the very reasons why they should attempt to get an amended act. If an Act were drafted without their having their say in it they might depend upon it the fee would not be amended. He quite agreed that the trouble and responsibility attached to the making of official analyses under the Sale of Food and Drugs Act were by no means remunerated by the fee of 10s. 6d., which had undoubtedly been originally introduced for the purpose of giving private purchasers the opportunity of having the articles they purchased tested at a moderate charge; it being assumed that the analyst would be recouped out of the salary he received from the authorities appointing him.

Mr. Allen could not agree with those who considered that the present time was inopportune so far as Parliament was concerned. The present Parliament, if it lasted its natural life, had still three or four sessions before it. The introduction of a new Sanitary Analysis Act was by no means calculated to bring strong political feelings into conflict, and they might depend upon it that whatever Government introduced a Bill, there would be plenty of cross voting. If the present Government remained in office they had plenty of time before them to pass a Bill as suggested; on the other hand, if their opponents succeeded to power the objection raised did not apply. In either case, therefore, he thought that they should be prepared. He thought they should appoint a Committee who should draft a Bill as carefully as possible and then pigeon-hole it. If when they pressed the matter on members of Parliament with whom they came in contact and were asked, "What do you gentlemen desire?" they would then only have to produce the Bill and say, "This is what we wish." On the other hand, if they did nothing now, the time would come when all would have to be done in a hurry, and we should find that a Bill was drafted and introduced in which our opinions and interests were wholly ignored. He did not agree that it was not possible for public analysts to draft such a Bill. They were undoubtedly the best qualified body of men in

the Kingdom to express an opinion on the point, as they best knew the difficulties of the past and the requirements of the future. He was not inclined to insist that the Act proposed should cover all the articles he mentioned. He thought there was a great deal to be said in favour of making the Act one simply relating to sanitary chemistry, and he should be disposed to leave such things as petroleum and mixed fabrics alone. He could not see that it would in any way have an injurious effect upon the interests of chemists who hold no appointment at present under the Sale of Food and Drugs Act. There were undoubtedly a large number of articles which he suggested should be made the duty of the public analyst to examine, which, at present, were not examined at all. If these were brought within the operation of a future Act it would be sure to bring work to the unofficial analysts, who would be consulted by the manufacturers and dealers in the same manner as they are at present, respecting articles subject to inspection. Whether they took any step or not he must remind them that there was sure to be legislation on the subject of poisons during the next Parliamentary Session.

Respecting disinfecting powders, he certainly considered these should be brought within the operation of the Act, and that the vendors should be compelled to state the strength or composition on the label, so that people would not be buying as carbolic powder, preparations containing merely an insignificant amount of the active ingredient. Similarly with sanitary soaps. It ought to be made illegal for a firm to state that their soap contained certain substances having a curative or emollient action, actually naming those constituents, when, as a matter of fact, there was nothing of the kind present.

With reference to the term State Chemists, which he had used in his paper, he might say that the title did not originate with him, but he believed was due to the President. He had simply adopted it as being, in his opinion, a highly suitable title.

Conclusion of the Society's Proceedings.