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THE
CORRESPONDENCE

RELATING TO THE

LANCET SANATORY COMMISSION

(WHICH APPEARED LATELY IN THE TIMES.)

EXAMINED BY

JAMES CÆSAR DURNFORD, ESQ.

JOHN A. POWER, L.M. M.A. CANTAB.

AND

RAYMOND S. DANIELL, M.A. OXON.

WITH AN APPENDIX OF DOCUMENTS.

" Envy doth merit as its shade pursue,
And, like the shadow, proves the substance true."

LONDON:
WILLIAM TEGG AND CO., 85. QUEEN STREET,
CHEAPSIDE.
1856.

*** The delay which has occurred in the publication of this Pamphlet has been unavoidable, and has arisen from causes over which the authors have had no control. The ungenerous use which has recently been made in the "Pharmaceutical Journal" of the extracts from Dr. Hassall's private letters published by Dr. Letheby, renders, however, any further postponement of the publication of this Pamphlet undesirable.

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Library, National Institute of Public Health	

LONDON:
Printed by SPOTTISWOODE and Co.,
New-street-Square.

TABLE

Showing the articles analysed, the number of analyses made, and by whom made, compiled from the *Lancet* Reports, Dr. Hassall's work on "Food and its Adulterations," and Dr. Letheby's Letters and Accounts:

Analyses in Reports on "Food and its Adulterations."

Names of Articles analysed.	Number of Articles analysed.	Number analysed by Dr. Hassall mostly both microscopically and chemically.	Number analysed, chemically only, by Dr. Letheby.
1851.			
Coffee - - -	54	54	10 { 9 qualitative only for iron
Sugar - - -	87	87	
Arrowroot - - -	51	51	
Pepper - - -	43	43	
Water - - -	100	100	
Chicory - - -	34	34	
Mustard - - -	42	42	
Bread - - -	28	28	
Coffee - - -	31	31	
Canister coffee - -	29	29	
Chicory - - -	23	23	3 for alum only
Cocoa - - -	56	56	
Chocolate - - -	12	12	
Farinaceous food -	17	17	
Cocoa ashes - -	68	67	8 for alum only
Oatmeal - - -	30	30	
Tea - - -	128	128	
Milk - - -	113	113	
Arrowroot - - -	36	36	3 for alum only
Bread - - -	25	25	
Baking powders -	6	6	
Chicory and coffee -	54	54	
Flour - - -	8	8	8 for alum only
Isinglass - - -	28	28	
Total - -	1103	1103*	21
1852.			
Vinegar - - -	33	33	8 1
Pickles - - -	20	20	
Ginger - - -	21	21	
Turmeric - - -	10	10	
Cinnamon - - -	32	32	
Nutmegs - - -	18	18	
Mace - - -	12	12	
Cloves - - -	29	29	
Allspice - - -	21	21	
Mixed spice - - -	26	26	
Preserved provisions -	34	34	8 1
Pale ale - - -	47	47	
Cayenne - - -	28	27	
Curry powder - -	26	26	
Bottled fruits and vegetables - -	34	34	

* In those cases in which the analyses made by Dr. Letheby were repeated by Dr. Hassall, they are not deducted from Dr. Hassall's column.

Names of Articles analysed.	Number of Articles analysed.	Number analysed by Dr. Hassall, both microscopically and chemically.	Number analysed, chemically only, by Dr. Letheby.
1852 (continued).			
Vinegar - - -	28	28	3
Anchovies - - -	28	28	
Potted meats - - -	28	28	
Sauces - - -	33	33	
Total - - -	508	508	12
1853.			
Preserves and jellies -	35	35	8
Lard - - -	100	100	
Coffee - - -	34	34	
Coffee - - -	44	44	
Butter - - -	48	48	12
Tobacco - - -	56	56	
Cigars - - -	58	58	
Cigars - - -	12	12	
Snuff - - -	45	45	45
Total - - -	432	420	65
1854.			
Sugar confectionary -	101	101	10 { for blue pigment only
Porter - - -	52	52	4 *
Gin - - -	38	38	
Total - - -	191	191	14

Analyses in Reports published in the *Lancet*, not contained in Dr. Hassall's work, but on which evidence has been given before Committee of the House of Commons on Adulteration.

Names of Articles analysed.	Number of Articles analysed.	Number analysed by Dr. Hassall, both microscopically and chemically.	Number analysed, chemically only, by Dr. Letheby.
Jalap - - -	33	33	53
Ipecacuanha - - -	33	33	
Opium - - -	57	57	
Scammony - - -	30	30	
Total - - -	153	153	53

* The extract left on the distillation of these samples was bitter, and Dr. Hassall forwarded them to Dr. Letheby, with the request that he would determine the nature of the bitter matter contained in them. Dr. Letheby reported that two of the samples contained that poisonous metallic substance *sulphate of zinc*, the fact being that not a trace of any such substance was present in them, as was subsequently admitted by Dr. Letheby.

Analyses in Reports not published in the *Lancet*, but on which evidence was given before Committee of House of Commons on Adulteration.

Names of Articles analysed.	Number of Articles analysed.	Number analysed by Dr. Hassall, both microscopically and chemically.	Number analysed, chemically only, by Dr. Letheby.
Brandy - - -	18	18	None.
Rum - - -	20	20	
Anatto - - -	31	31	
Cheese - - -	25	25	
Total - - -	94	94	

The foregoing Tables give 112 chemical analyses by Dr. Letheby, as recorded in the *Lancet* Commission and in Dr. Hassall's work, against 2349 performed by Dr. Hassall, a large proportion of which were both microscopical and chemical.

Of the Reports written by Dr. Hassall, but not published in his work, out of 247 analyses, all of which were both microscopical and chemical, the chemical analyses of 53 were performed by Dr. Letheby. It will be seen that TWO-THIRDS OF THE ANALYSES MADE BY DR. LETHEBY BELONGED TO TWO ARTICLES, VIZ.: SNUFF AND OPIUM, there having been 43 samples of the former, and 53 of the latter article; also that these analyses were made during the latter part of 1853 and in 1854.

The case, then, stands thus: —

			Analyses.
Dr. Letheby made	-	-	165
Dr. Hassall made	-	-	2481

Dr. Letheby has himself acknowledged that he is unable to claim more than 205 analyses. (*See his Letter* p. 48.)

For confirmation of the accuracy of the figures contained in Dr. Letheby's column of the above Table, see Report of the Rev. R. S. Daniell and Mr. Bolton, founded on an examination of Dr. Letheby's accounts, as rendered to Dr. Hassall, Appendix, p. 31.

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THE CORRESPONDENCE

RELATING TO THE

LANCET SANATORY COMMISSION

EXAMINED.

It is seldom that the credit of a bold and successful undertaking is given to the most deserving. Success in any enterprise generally invites envy, and envy is ever accompanied by detraction. An illustration of these remarks is furnished by the correspondence which has lately appeared in the public papers respecting the credit which is due to Dr. Hassall for his labours in detecting and exposing the enormous injury under which the public has been long and patiently, and to all appearance hopelessly, suffering from the adulteration of its daily food. Of the fact of the existence of this widespread and fatal evil all persons were convinced by painful experience; enormous fortunes were accumulated at the cost of the health and well-being of the community; and statistics were referred to, proving that "more persons have died, and still continue to die, from the neglect of proper sanatory precautions, than have ever fallen in battle." From the influence of this extensive mischief no class was exempt. The circumstances which ordinarily afford the rich man an immunity from the physical evils to which his poorer neighbour is helplessly exposed, gave the former no protection here; while even the very drugs by which disease is arrested and health restored, either had their efficacy

neutralised by the admixture of spurious ingredients, or were converted into active engines of destruction. An all but universal apathy seemed to have possessed the mind of the public respecting a matter in which its vital interests were concerned. We were told that we were daily swallowing black lead and Prussian blue in our tea; red lead in our pepper; lead, copper, and arsenic in our confectionary; strychnine in our beer; sulphuric acid in our stout; verdigris and vitriol in our pickles; Cayenne pepper in our gin; animal abominations in our sugar; alum in our bread;—and we heard, and wondered, and still swallowed on. Not an attempt was made to check the evil under which all were suffering. What was, in fact, everybody's business, was tacitly allowed to be nobody's business; and the world seemed content to permit the productions which a bountiful Providence provided for the comfort and support of mankind to be converted into poison by the cupidity of a few dishonest dealers.

At length, by the perseverance and industry of an individual, the public was awakened to a sense of its danger. The pernicious consequences of adulteration, not only to the physical but also to the pecuniary interests of the nation, began to be felt and recognised. The annual loss to the revenue by the substitution of spurious for genuine articles was shown to exceed 2,000,000*l.*, notwithstanding the enormous expense incurred to protect it against fraud; the subject attracted the attention even of Parliament; a Committee of the House of Commons was appointed during the past session to investigate the matter, and the nefarious practices by which the health and comfort and even the life of all classes of the community are jeopardised and injured, were fully brought to light. "But how," the *Times* suggests it will be asked, in a leading article, July 24th, "has the discovery at this particular period been made or certified?" "Partly," it makes answer, "through material improvements effected in the means of detection, but mainly by the skill and perseverance of Dr. Hassall, who, by devoting to this subject the energies of a scientific mind, and pursuing it with that steady zeal which its importance justi-

fied, has thus become a public benefactor of no common order . . . We only trust such services as Dr. Hassall has rendered in this matter will not be soon forgotten. It is through researches like his that what would be otherwise mere suspicion, even if it were not treated as fable, becomes producible as fact, and that truth is at length put before our eyes so palpably as to forbid either indifference or doubt." This acknowledgment of the services rendered by Dr. Hassall in the matter was not permitted to go unchallenged. A rather petulant and not very grammatical letter appeared anonymously in the *Times* a day or two after, in which the writer, while he acknowledges Dr. Hassall's title "to much praise for the manner in which he has performed his part in exposing the frauds practised in food and drink, claims for others who have been employed with him in the same work an equal share of public esteem"—those others being, according to the anonymous writer, "Mr. Wakley, who originated the idea of a sanitary commission, who planned the arrangements necessary to put it into operation, who paid all the expenses of the inquiry, who was at the cost of publishing the results in the *Lancet*, and who also bore the risk which was attendant thereon; a poor artist of the name of Miller, who made the microscopic examinations and drawings; Dr. Letheby of the London Hospital, who conducted all the important chemical analyses; and Mr. Postgate, of Birmingham, who was really the agent of public agitation whereby this inquiry of Mr. Scholefield's has been instituted." To this remonstrance Dr. Hassall, as was to be expected, was not backward in replying; accordingly, on the same day that it appeared, he addressed a letter to the *Times*, in which he points out and rectifies sundry inaccuracies on the part of his anonymous assailant, and concludes by the very natural inquiry, "May I ask, having assigned the chemical investigations to Dr. Letheby, and the microscopical examinations and drawings to Mr. Miller, what part either of the work or of the merit your correspondent reserves for me to justify the eulogium which, at the same time, he is pleased to confer on me?" This is a question which it is highly fitting should have an answer; it is one, moreover, in which not only

Dr. Hassall but the public at large are interested; to the investigation of this question, therefore, the writers of these pages now propose to address themselves. The materials of this inquiry are supplied by the sequel of this correspondence between the above-named gentlemen published in the *Times*; a letter from Dr. Letheby in the *Medical Gazette* of August 4th; manuscript letters and accounts of Dr. Letheby, with a variety of other documents bearing upon the case now before us; including a very clear and explicit report of a scrutiny of those accounts and correspondence made by the Rev. R. S. Daniell and Mr. Bolton. In common with many other persons, we felt deeply interested in the important scientific investigations which he was so laboriously and successfully pursuing, and were rather startled at the unceremonious protest made by the anonymous writer already referred to, against the claims put forward by the *Times* on behalf of Dr. Hassall. We consequently determined to ascertain the truth of the matter; and having carefully examined the documents above enumerated, we feel that we are in a position to speak concerning the points at issue, with such authority as may belong to a perfect knowledge of the facts of the case.

From all the consideration which we have been able to give to the subject, it appears to us that the question between Dr. Hassall and his detractors may be exhibited under the following heads:—

1. As to the claim said to be put forward by Dr. Hassall respecting the credit of having initiated the investigation into the question of the adulteration of food, &c.
2. The nature and amount of Dr. Letheby's contributions to the experiments and researches connected with that investigation; and
3. The testimonial about to be presented to Dr. Hassall by certain of his friends and well-wishers.

This we have placed last, because it is intrinsically the least important of the three; though we believe that, in point of fact, it is the great question with Dr. Hassall's detractors. Had it not been that such an expression of respect and gratitude to Dr. Hassall was suggested and set on foot, we

should have heard nothing of any attempt to detract from his well-earned reputation, and to depreciate the value of his labours. So long as he was working unnoticed and unrewarded, bringing large profit to others with little advantage to himself, he was welcome to do so; but no sooner is there a prospect of any credit or emolument accruing to him from his exertions, and especially when the importance of his labours is attracting the attention of Parliament, than forthwith a host of rival candidates for popular applause appear upon the field, and demands are loudly made for a division of the spoil. *Hinc illæ lacrymæ.* This suggestion may serve to explain what Dr. Hassall (Letter to the *Times*, July 30th) justly notices as a remarkable fact, that although the proof sheets of part of his book on the adulteration of food* went through Dr. Letheby's hands, and that up to within a very few days of his letter in the *Times* he was in the habit of occasional friendly communication with him, no word of discontent or dissatisfaction was ever expressed by him to Dr. Hassall. If any confirmation were required of this fact, we have it in the confession of Dr. Letheby himself. In his letter to the *Medical Times* of August 1st, he says:—“I did not at the time attach any value to such paltry sacrifices [viz. the analyses which Dr. Hassall employed him to make, and for which he was paid at a much higher rate than Dr. Hassall himself]: I thought I was doing him a service, and that was enough for me; but when he writes to me and asks me to have a private meeting of a few friends at his house, to talk over the subject of getting up a testimonial to him [which is not, however, a correct representation of the facts], I then become annoyed, and see the mischief which my liberality had occasioned.”

This acknowledgment of Dr. Letheby has certainly the merit of great candour. Verily it was not without reason Dr. Letheby cautioned Dr. Hassall against the danger of awakening professional jealousy. Dr. Letheby, it is to be supposed, had good grounds for reminding Dr. Hassall how much envy and

* The Reports themselves Dr. Letheby never even saw until their publication in the *Lancet*.

uncharitableness exist in his profession; for our part, however, we have too much faith in the generosity and honour of the medical profession to apprehend that the forebodings of Dr. Letheby will be very generally realised. But, after all, this is not a question of testimonial or no testimonial (that has been already decided), though it may suit the purpose of opponents to represent it as such. Dr. Hassall did not require Dr. Letheby to admonish him on the inconveniences that might result from such demonstrations when injudiciously made. He was fully convinced of the fact that such expressions of popular feeling are as often elicited without merit as withheld where deserved. But this never was, and is not now, the question that most concerns Dr. Hassall. Granting that he acted indiscreetly in informing his "friend" Dr. Letheby of the graceful act by which it was in contemplation to acknowledge his services, granting that he laid himself open to ungenerous insinuations, and to the "strong censure" which Dr. Letheby alleges erroneously* he addressed to him on the subject, by his permitting, *during his absence*, a meeting of a few personal friends at his own house of an entirely preliminary character, and the invitations for which, including a letter to Dr. Letheby himself, were issued by Dr. Barnes, still the question remains whether or not Dr. Hassall has deserved well of the public for having been chiefly instrumental in exposing the nefarious artifices by which the health and comfort of every individual of every class in the community are sacrificed to the cupidity of dishonest tradesmen? We affirm, without fear of confutation, that he has—and we prove our assertion by the testimony of his detractors.

Before entering, however, on this point, we would observe, that Dr. Hassall never appears, as Dr. Letheby insinuates, to have arrogated to himself the merit of having *initiated* the inquiry so successfully carried out by him under the Analytical Sanatory Commission. "To Mr. Wakley," says

* We have now before us the letter referred to by Dr. Letheby, and it does not convey the slightest censure: on the contrary, it is written in a perfectly friendly spirit, and is simply a sort of dissertation on the subject of testimonials in general.

Dr. Letheby, in his Letter (August 1.) to the *Medical Times*, "is due the honour of initiating this inquiry. I wish that I could say as much in favour of Dr. Hassall." Dr. Hassall has reason to be grateful to Dr. Letheby for his good wishes; which, however, are rather of a Hibernian character—though wanting, perhaps, the sincerity of that imaginative people—for it is not easy to see how *two* persons could severally possess the honour of *initiating* any proceeding. In this instance, however, it is only charitable to Dr. Letheby to suppose that the wish was father to the thought; for certainly Dr. Hassall never gave him reason to suppose he had any desire to deprive Mr. Wakley of his fair meed of praise. On the contrary, he had taken frequent occasion to acknowledge the obligations which the public owes to the *Lancet* in this particular. "It is quite impossible (says Dr. Hassall, in the introduction to his book on Food and its Adulterations, p. xxxvii.) to speak in too high terms of the great moral courage evinced by Mr. Wakley in his determination to publish in all cases the results of the investigations, and to give to the world the names and addresses of all parties concerned. The responsibility incurred was immense; and had the confidence reposed not been justified—had not the greatest thought and caution been exercised—most disastrous would have been the consequences. Great, therefore, is the debt of the public to the *Lancet* in this matter." At the same time, it is only due to Dr. Hassall to state that previously to his connexion with the *Lancet* he had been engaged in independent investigations into the adulteration of food, and in making analyses on his own account*; while, by the confession of the *Lancet*, to Dr. Hassall unquestionably belongs the credit of having been the

* A paper by Dr. Hassall on the Adulteration of coffee was read before the Botanical Society of London many months before any arrangements were made for the publication of the Reports of the Commission. The MS. of this paper was subsequently forwarded to the *Lancet* for publication. Some time after the receipt of this, Mr. Wakley wrote to Dr. Hassall, and inquired whether he would undertake a series of similar investigations, and requested him to communicate to him his ideas on the subject in writing. A lengthened Report of this paper appeared in the *Times* of the 5th of August, 1850, and will be found in the Appendix, p. 59.

first to apply the microscope to any extent to inquiries of this nature: for though Mr. Wakley, in his enumeration of his own services in this cause, speaks in a loose way of having employed and paid "analysts, microscopists, draughtsmen, &c.," it should be remembered that Dr. Hassall's was the only microscope employed in the matter. Moreover, that to Dr. Hassall belongs the sole credit of furnishing the reports which appeared from time to time in the *Lancet*, is completely established by the terms of the agreement entered into between Dr. Hassall and Mr. Wakley, confirming to him the right of authorship and of publishing the reports in question (see Appendix). So far back as August 19th, 1854, the *Lancet*, speaking of the services rendered by the labours of the Analytical Sanitary Commission, states, "In connexion with these labours, we consider that the time has now arrived when the name of Dr. Arthur Hassall should be mentioned, on whom these inquiries have almost exclusively devolved, and to whom belongs the credit of having brought to light practices in relation to the adulteration of food of the highest importance, and of the extent and nature of which no one previously entertained any adequate conception. It is almost impossible to over-estimate the importance of these labours, either in a pecuniary or sanitary point of view, both as regards the public and the medical profession. To Dr. Hassall, then, belongs the merit of having established in this country a new and distinct department of public hygiene" (p. 152.). Again, in a review of Dr. Hassall's book contained in the *Lancet* of January 27, 1855, the reviewer remarks, "It is, however, but a tribute of justice to the extraordinary scientific merit and energy of the author that we should express our opinion of the general merits of the work. . . . It is the great and original merit of Dr. Hassall to have applied the microscope to important uses in inquiries of this nature, and to have shown by its use, not only many things previously considered impossible to show, but many things not previously suspected to exist." Dr. Letheby, to be sure, joins issue here with the writer in the *Lancet*, and in his letter to the *Medical Times* questions the value of microscopic

investigations in matters of this nature. We must leave these gentlemen to settle this question between them—*non nobis tantas componere lites*. In his published letter to the *Times* (July 30th), Mr. Wakley insinuates that Dr. Hassall is undeserving of any merit or acknowledgment on the part of the public, because, as Mr. Wakley, with not the best taste, expresses himself, Dr. Hassall was "not an unpaid labourer;" but we would ask, is Mr. Wakley prepared to affirm the proposition that no labour is meritorious unless unrewarded? and that the fact of a man realising a handsome income from his labours—say in the editing of a medical journal—is to disqualify him from the meed of a public or a private recognition of his industry or talents? Again, Mr. Wakley takes credit to himself for having incurred all the legal risk; but Dr. Hassall risked not only money*, but his reputation; both of which were more than once in jeopardy, as will presently be more fully shown, by the inadvertence of Dr. Letheby or of his assistant, and from the consequences of which Dr. Hassall was only saved by the exercise of his accustomed caution in repeating the analyses himself. It is all very well now for the *Lancet* (art. in August 4th, p. 110.) to say with an affectation of indifference, "Reclamations as to priority or originality in the conception and conduct of successful undertakings and appeals to the judgment of the public (which, however, Dr. Hassall has not certainly the merit of having *initiated*) are not unfrequently the occasion of pain to many who are dragged unwillingly into the contest. It is therefore with unfeigned pain and reluctance that we refer to the controversies concerning the analytical sanitary commission, to which the extravagant claims of one gentleman have given rise." After quoting, then, Dr. Hassall's just claim to have been "the first to apply on a large scale the microscope to the purposes of the detection of adulteration, "why," exclaims the *Lancet*, "this was the very

* Dr. Hassall was at the entire expense of the republication of the Reports of the Analytical Sanitary Commission, under the title of "Food and its Adulterations," including the re-execution of the woodcuts, which had all been destroyed by fire. By the republication of the names and addresses of the various merchants and tradesmen, above 2000 in number, he also incurred heavy legal responsibilities.

work that was suggested to him by Mr. Wakley, and that he was paid for performing!" So that, according to the notions of the *Lancet*, if a man does a work which he is engaged to execute, and does it well, but condescends to allow himself to be paid for performing it, he is not only disentitled to all merit for his labours, but almost disqualifies himself for the treatment of a gentleman! Verily they do well to add, "it is unnecessary that we should say more on this subject." And yet they do say more. "It may be regarded as a curious fact that until we read the letters published in the *Times*, we were quite unaware of the extent to which Dr. Letheby had assisted Dr. Hassall." To this part of the subject, therefore, we now invite the attention of the public and of the *Lancet*.

In his letter to the *Medical Times* (August 1st) Dr. Letheby states, "As early as the spring of 1851, Dr. Hassall put himself in communication with me on the subject of the chemistry of his inquiry. From that time I have been constantly referred to, and have made nearly 300 analyses for him of one sort or another*, and have given him written and verbal (oral?) instructions for all the chemical processes alluded to in his book." Now, in answer to this, it would be sufficient to refer to Dr. Hassall's statement in his letter to the *Times* (dated July 30th), where he shows that of the 2197 analyses published by him in his work on "Food and its Adulterations," ninety-six only were made by Dr. Letheby, in which were included forty-three ashes of snuff. Of 228 analyses, some of which were published in the *Lancet*, but which were not published in his book, only fifty-seven, these being opiums, were done by Dr. Letheby. Of these analyses, then, the greater part were confined to two articles, viz., snuff and opium, there having been forty-three of the former and fifty-seven of the latter article.

In the same letter Dr. Hassall writes thus: "Exclusive of an introduction of forty pages, my work contains 640 pages of letter-press, and it embraces the reports which were published in the years 1851-2-3 and 1854. I find that twenty-five reports appeared in 1851; these em-

* This number includes all the *private* analyses made by Dr. Letheby for Dr. Hassall, extending over several years.

braced 1054 analyses, microscopical and chemical, these occupying 368 pages of the work — more than one half: that twenty reports appeared in 1852, embracing 512 analyses; the last of these reports extending to page 514: that in 1853 seven reports were published, containing 340 analyses, and terminating with the 600th page of the work; lastly, that in 1854 three reports only appeared, containing 291 analyses. The first year Dr. Letheby made sixteen analyses, the second nine, the third fifty-nine, including the ashes of snuff, and in the fourth year twelve analyses." These figures would suffice to show the amount of credit to be given to Dr. Letheby's statement in his first letter to the *Times* (dated July 27th), that "up to that time he had been in constant communication with Dr. Hassall, directing him in the conduct of all the unimportant chemical analyses, and himself taking every one of the difficult and important ones." But here again we are enabled to employ the testimony of Dr. Hassall's detractors to refute themselves. It was the practice of Dr. Letheby from time to time to furnish Dr. Hassall with sundry letters and accounts detailing the number and nature of the analyses performed by him. These have fortunately been preserved, and were lately submitted to the scrutiny of the Rev. R. S. Daniell and Mr. Bolton, who have drawn up a very clear and explicit statement on the subject. From this we extract the following paragraphs: "The entire number of chemical analyses performed by Dr. Letheby is 165, which bears but a very small proportion to the number of analyses, microscopical as well as chemical, performed by Dr. Hassall — viz., 2481." "Of these samples, 63 were tobacco and snuff ashes, and 53 opiums; thus leaving 49 samples only of all other kinds; but it is to be especially noted that the analyses of these 53 samples of opium are not recorded in Dr. Hassall's work on "Food and its Adulterations."* And were further

* These numbers differ slightly from those given in the letter of Dr. Hassall, quoted above; this immaterial difference is explained by the fact that Dr. Hassall's figures were somewhat hastily compiled in time for his letter to the *Times*, while those in the Report of the Rev. R. S. Daniell and Mr. Bolton were founded upon the careful examination of Dr. Letheby's ac-

evidence required in vindication of Dr. Hassall, we need only appeal from Dr. Letheby in the *Times* of July 30th, to Dr. Letheby in the *Times* of August 1st, where, in a letter dated July 31st, he makes the very important and conclusive admission — *that only 291 analyses were made by him*; this number not only including all the analyses made under Dr. Hassall's direction, for the Analytical Sanatory Commission, but also, as Dr. Letheby himself confesses, *all the private analyses made for that gentleman for several years past, and for both of which Dr. Letheby regularly charged*; thus Dr. Letheby writes: "The rest were for the most part of things which did not immediately concern the Commission; they were of matters which he had received for examination in the way of business."

The enumeration of analyses performed for the *Lancet*, as given by Dr. Letheby in the letter just quoted, amounts TO ONLY 205 SAMPLES AGAINST 2481, and in this enumeration there are several manifest errors. Thus, samples of cod-liver oil, and other articles are mentioned, upon which no reports have ever appeared in the *Lancet*, and some of which were *private analyses*. Even of these analyses it should be stated that many were merely confirmatory, others were partial only. The above evidence is then conclusive as regards the number of analyses actually made by Dr. Letheby; but two other statements advanced by him, having reference to the assistance rendered by him, still require to be noticed.

Dr. Letheby states that he made "every one" of the "important" analyses. The following particulars furnish a sufficient reply to this statement:—Dr. Letheby had nothing to do, as appears from the Table, with the analyses of tea for Prussian blue, indigo, sulphate of iron, blacklead, catechu, &c.; of coffee and chicory for Venetian red and reddle; of cayenne for red-lead and vermilion; of bottled fruits and vegetables, of preserves, and of pickles for copper; of coloured sugar confectionery for arsenite of copper, carbonate of copper, chromate of lead, litharge, red-lead, carbonate of lead, vermilion, &c.; of gin and rum for cayenne and grains

counts and letters. See Table of Analyses and scrutiny of Dr. Letheby's accounts in Appendix, p. 31.

of paradise; of anchovies, of potted meats and fish, of the red sauces, for bole Armenian; of anatto for lead and copper, &c. That these were amongst the *important* chemical analyses cannot be denied.

Again, Dr. Letheby states that he furnished directions for all the "unimportant" analyses, and gave "written and verbal instructions for all the chemical processes" alluded to in Dr. Hassall's work.

The principal chemical processes described in the above mentioned work are those for the detection of lead, copper, iron, vermilion, alum, and sulphuric acid. Now these are described in nearly every elementary work on chemistry, and it is difficult to conceive what merit Dr. Letheby would claim in connection with such well-known processes as these. But it is not a little singular, in reference to this part of the subject, that Dr. Hassall has in his possession a communication in which Dr. Letheby expresses a very strong disinclination to make known the processes of analyses pursued by him. The reasons assigned would be acknowledged to be of a very curious character did we feel ourselves at liberty to publish them. In the cases of the analyses in which Dr. Letheby was employed, it was necessary that Dr. Hassall should be furnished with the method of examination pursued by him, both in order that he might have some means of assuring himself of the accuracy of the results supplied, and that he should be in a position to describe, if required, the steps by which those results were arrived at.

It occasionally happened that the results furnished were inaccurate, rendering imperative the repetition of the analyses, and the exercise of the greatest caution in employing the conclusions supplied. A remarkable instance of this kind has been stated, which was very nearly productive of the most disastrous consequences. In reply to inquiries of Dr. Hassall, Dr. Letheby reported that two samples of gin forwarded for examination contained that poisonous metallic substance, sulphate of zinc, and a statement to that effect *was actually in type*, giving the names of the parties of whom the samples of gin were obtained, and with severe reflections upon the serious nature of the

offence of adding so injurious a substance to gin. Prior to the publication of the Report on Gin in the *Lancet*, however, Dr. Hassall was led to suspect the correctness of the results furnished by Dr. Letheby; he therefore analysed a portion of the same samples himself, found that they did not contain a trace of zinc, and called Dr. Letheby's attention to the error, which was acknowledged by him. This, although one of the most striking of the errors committed, is by no means the only example which might be adduced. Not very long since some waters were forwarded to him to ascertain the degree of hardness. These were all returned wrong, and on Dr. Hassall's pointing out the error to him, he confessed the mistake, and said that it had occurred through a fault of his laboratory assistant; thus showing that of the analyses actually entrusted to Dr. Letheby all were not performed by him.

We feel that Dr. Hassall's vindication would not be complete unless we noticed the use which Dr. Letheby has made of certain extracts from Dr. Hassall's private letters to him. Of the propriety of publishing passages from a confidential correspondence between professional men without the consent of the writer (for which, in this instance, there did not exist even the miserable excuse of a previous quarrel), there can be, we should think, but one opinion. "Quis enim unquam qui paulum modo bonorum consuetudinem nosset, literas ad se ab amico missas, offensione aliquâ interpositâ, in medium protulit, palamque recitavit? Quid est aliud tollere e vitâ vitæ societatem, quam tollere amicorum colloquia absentium? Quàm multa joca solent esse in epistolis, quæ prolata si sint, inepta videantur! quàm multa seria, neque tamen ullo modo divulganda!" (CICERO, in *M. Antonium*.) But what is the inference that Dr. Letheby would have us to deduce from the extracts from Dr. Hassall's private letters, which he has not scrupled to publish? Is it that Dr. Hassall is deficient in chemical knowledge? With equal justice might Dr. Hassall point to those errors which have been noticed above on the part of Dr. Letheby; and thence endeavour to fix on that gentleman an imputation of incompetency.

But recrimination, we are conscious, is no answer in such an argument; and, therefore, we would invite attention to the extracts themselves, and ask whether it is not evident that the notes from which they are quoted were written in much haste, and amid the pressure of business, seeing that the information sought was such as might easily have been obtained from any elementary treatise on chemistry, without exposing the applicant to any ungenerous use of a confidential communication? Dr. Hassall's reputation as a man of science stands on too secure a foundation to be injured by the admission that he has occasionally sought for information, from Dr. Letheby; indeed, considering the importance of the inquiry in which he was engaged, and the magnitude of the interests at stake, we think it very creditable in Dr. Hassall that he should have sought extraneous advice whenever he had reason to mistrust his own judgment in any investigation. He was not surely going to pay Dr. Letheby for telling him what he already knew. After all, only one adulteration, we are told, was discovered by Dr. Letheby that was not previously known to Dr. Hassall, viz., that of snuff with bichromate of potash. In some cases Dr. Letheby was consulted by Dr. Hassall as a mere matter of convenience, and in order to lighten in some degree his own severe labour.

With regard to the period at which Dr. Letheby was consulted, the following particulars may be stated in reply to his assertion, that he was referred to by Dr. Hassall throughout these inquiries. — The first report of the Commission was published in the *Lancet* in January, 1851, but the inquiries themselves commenced some months previously. The first published reference made to Dr. Letheby was in July of the same year, at which time Dr. Hassall had made, without reference to Dr. Letheby, no less than 833 examinations and analyses; the analyses of snuff and opium, which amounted to two-thirds of the entire number made by Dr. Letheby, were performed during the latter part of 1853. Now, although Dr. Hassall occasionally consulted Dr. Letheby from July, 1851, he did so rather as a friend, and without any authority from Mr. Wakley to do so, and indeed without his knowledge, as appears from his admission, to which we have already

referred in a quotation from the article in the *Lancet*: and it was not till near the end of 1853 that he was authorised to incur a limited expense for chemical investigations; and this, chiefly *in connexion with the adulteration of drugs*. Mr. Wakley even wished that Dr. Rogers should be employed in preference to Dr. Letheby; but Dr. Hassall urged that he might be at liberty to refer, when necessary, to Dr. Letheby. If Dr. Hassall had concealed the fact, and had withheld all acknowledgment that Dr. Letheby had been employed to render in some cases chemical assistance, Dr. Letheby would have had, to some extent, an excuse for his conduct; but so far from this being the case we find Dr. Letheby's name repeatedly referred to in several of the Reports of the Commission* (*although Dr. Hassall's own name is but once mentioned in them*), as well as in the introduction to Dr. Hassall's work on "Food and its Adulterations," where his services are thus frankly acknowledged: "We have now to acknowledge the great assistance which we have derived at different times from our friend Dr. Letheby, to whom we have been in the habit of referring frequently on doubtful points. The chemical portions of the later reports contained in this volume, commencing with that on Vinegar and its Adulterations, have all been revised by Dr. Letheby: our best thanks are therefore due, and are most cheerfully accorded, to that gentleman, for the kind and ready aid which he has at all times afforded us."

We have now, we believe, examined all the more important statements and allegations contained in the letter of Mr. Wakley, but more particularly in those of Dr. Letheby. The results of this examination may be thus summed up:

1st. That the claim set up on behalf of Dr. Letheby to an "equal share" with Dr. Hassall in the credit of the labours of the *Lancet* Sanatory Commission is one which cannot be sustained. In an article entitled "Food and its Adulterations," which lately appeared in a certain paper† under the

* Dr. Letheby, in his letter to the *Medical Times*, himself enumerates no less than nine different places in Dr. Hassall's work in which his name is referred to. It should be remembered that these Reports appeared as the work of a Commission, and were written in the plural number, and hence it was not possible to specify in every case by whom each analysis was performed.

† See Appendix, p. 53.

name of "Dr. Letheby," we perceive that that gentleman has pushed his pretensions to a most extravagant degree. Not content with adopting the very title of Dr. Hassall's elaborate book, whereby he has necessarily exposed himself to invidious comparison, from which one would have supposed he would rather have shrunk, he tells the public that "the *Lancet* Sanatory Commission was composed of three persons; viz., "the present writer" himself, "as analytical chemist, Dr. Hassall, the microscopist, and Mr. Miller, the artist." With regard to Mr. Miller, we have reason to believe that, while Dr. Hassall would not for one moment depreciate the value of his assistance, any person that had the slightest knowledge of Mr. Miller would be convinced that he would (if alive) be the very foremost to repudiate the absurd attempt to place him on a level with Dr. Hassall in respect to these investigations, seeing that not only was the part allotted to him entirely subordinate, that of a microscopic draughtsman, but for the education necessary to qualify him for the task he was indebted to the personal instructions of Dr. Hassall. With equal reason might Dr. Letheby pretend that the engraver, printers, and paper-makers were members of the Commission.*

2nd. That Mr. Wakley has really no just ground of complaint against Dr. Hassall whatever. Until the period when Dr. Hassall's friends set on foot the subject of the testimonial about to be presented to him, that is, many months after the completion of the Reports of the Analytical Sanatory Commission, no difference existed between Mr. Wakley and Dr. Hassall. On the contrary, Mr. Wakley has publicly and

* Mr. Miller entered Dr. Hassall's service as a microscopic artist nearly ten years ago, receiving a fixed salary, and remained in it, with some few interruptions, until the period of his death. During this time he worked under Dr. Hassall's immediate directions and in his own house. In Dr. Hassall's work, "Food and its Adulterations" we meet with the following passage written many months previous to Mr. Miller's death:—

"The drawings from which the engravings were prepared were made by Mr. Henry Miller, and the engravings themselves were executed by Mr. R. Hart, to both of whom great credit is due for the care and skill bestowed."

This paragraph then clearly shows the nature of Mr. Miller's duties with Dr. Hassall. It should be mentioned that for the last two years Mr. Miller's health was such as almost incapacitated him from following his occupation. (See Appendix, p. 53.)

repeatedly acknowledged his entire satisfaction at the manner in which Dr. Hassall conducted the business of the Commission; and indeed, consistently with truth, he could not do otherwise. Even in Mr. Wakley's letter to the *Times*, which will be found in the Appendix, we meet with the following acknowledgment of Dr. Hassall's services: "I readily and cheerfully acknowledge the scientific merits of Dr. Hassall, and that his Reports afforded me the highest satisfaction."

The merit which belongs to Mr. Wakley in connexion with this Commission, and which no one has more freely and repeatedly acknowledged than Dr. Hassall himself, is of a totally different kind. Dr. Hassall was the chief scientific labourer in the matter, while Mr. Wakley's great merit consisted in his boldness in incurring the risk attendant upon the publication of the names and addresses of the persons whose goods were reported upon in the *Lancet*, — a proceeding attended with no serious consequences, owing to the scrupulously accurate manner in which Dr. Hassall conducted these inquiries, and for which much gratitude is due to Dr. Hassall on the part of Mr. Wakley. Although the Reports of the Commission were published with great regularity for four years, and they contain the results of the analysis of considerably over 2,000 samples, yet but in a single unimportant instance have they been shown to be inaccurate.

3rd. We have shown that Dr. Hassall was the author of the Reports of the Analytical Sanatory Commission: he planned their order and arrangement; he conducted nineteen-twentieths of the necessary investigations; he wrote the Reports; in fact, the whole conduct of the Commission was entrusted to him from the very purchase of the samples down to the final correction of the proofs: he was, indeed, the very life and soul of that Commission.

In corroboration of the correctness of these statements, we need only refer to the agreement between Mr. Wakley and Dr. Hassall, in which Dr. Hassall is acknowledged to be the author of the Reports of the Commission, and by which the right of publication of those reports in his own name, and for his own benefit, is secured to him. The first paragraph of this agreement is as follows:

"Mr. Wakley agrees that Dr. Arthur Hassall shall have the sole right to republish for his own benefit, and in his own name, in a form separate from the *Lancet*, all reports and articles under the title of the Analytical Sanatory Commission, projected by Mr. Wakley, and being accounts of analyses of food and drugs, written by Dr. Hassall, as well those which have heretofore been, as those which may be furnished by him to and published in the *Lancet* before the 25th day of December, one thousand eight hundred and fifty-four."

There is another point of view from which this subject should be considered. The great merit and importance of the Reports of the Lancet Commission consist in the application for the first time of the microscope on an extensive scale to the subject of adulteration. This application was undoubtedly first conceived by Dr. Hassall, as is shown by his paper already referred to on the adulteration of coffee read before the Botanical Society of London many months before the Reports of the Commission appeared, and which paper led to the establishment of that Commission.

Had chemistry alone been relied upon, these inquiries would have completely failed; for chemistry had long since made known all the more important chemical facts connected with the subject of adulteration. Thus the presence of Prussian blue in green tea, of red lead in cayenne, of copper in pickles, and of a variety of poisonous pigments in coloured sugar confectionery, was determined years since by chemistry. It was the microscope, then, in the hands of Dr. Hassall, that so largely increased the means of detecting adulteration. That this was so will sufficiently appear from the following quotations.

In the article on Dr. Hassall's work, entitled "Food and its Adulterations," contained in the *Quarterly Review* for March, 1855, we meet with this sentence:—

"In its present application (the application of the microscope) consists Dr. Hassall's advantage over all previous investigators in the same field. The precision with which he is enabled to state the result of his labours leaves no appeal."

The *Dublin Review* remarks:—

“The secret of his success has been that, in addition to chemical analysis, he has used the microscope in his inquiries, and his merit not only consists in the able manner in which he has employed the instrument, but in his being the first to use it practically and to such an extent for this purpose.”

In an article on the same work, written in January, 1855, the *Lancet* remarks:—

“It is now unnecessary to say how completely Dr. Hassall dispelled the delusion as to the circumscription of science, and how he demonstrated that the microscope, wielded by the skilful naturalist and chemist, was able to unravel and to analyse the component structures of substances that bid defiance to the blow-pipe and the test tube alone. It is the great and original merit of Dr. Hassall to have applied the microscope to important uses in inquiries of this nature, and to have shown by its uses, not only many things previously considered impossible to show, but many things not previously suspected to exist.”

Lastly, the *Times* writes:—

“The microscope seems to have been the more effective instrument in the work.”

We have now shown that the assault made upon Dr. Hassall by Dr. Letheby was uncalled for and unmerited, and that nothing has been stated in the whole of the correspondence now before the public to detract in the slightest degree from the high reputation which Dr. Hassall has justly earned for himself by the eminent share which he has had in the prosecution of these inquiries. And we confidently believe that so far from his former friends dropping from him, as Dr. Letheby anticipates, in disgust, he will find that the injustice which has been directed against him will not only confirm them in their attachment, but will be the means of attracting new ones to his side.

APPENDIX.