A letter to the Right Hon. Sir G.C. Lewis, Bart., M.P. ... / from three of the medical witnesses for the defence, in the case of Thomas Smethurst.

A LETTER

TO

THE RIGHT HON.

SIR G. C. LEWIS, BART., M.P.

HER MAJESTY'S CHIEF SECRETARY OF STATE FOR THE HOME DEPARTMENT.

FROM THREE OF THE

MEDICAL WITNESSES

FOR THE DEFENCE,

IN THE CASE OF

THOMAS SMETHURST.

LONDON: H. BAILLIÈRE,
219 REGENT STREET, W.

1859.

LONDON:
C. W. REYNELL, LITTLE PULTENEY STREET,
HAYMARKET.

A LETTER, &c.

Sir,

As medical witnesses in the case (and for the defence) of Thomas Smethurst, now under sentence of death for the alleged murder of Isabella Bankes, we beg, with feelings of the profoundest respect, to lay before you such a logical and simple history of the grounds of our evidence as may guide you, more faithfully than any record yet published, in deciding whether;—when all the circumstances of the case are considered from a scientific point of view, the last penalty of the law may not, as we earnestly hope, be annulled, or at least commuted.

In taking this step, we are inspired neither by vanity nor personal feeling; the interests of humanity, and, we may add, of justice, are our only motives.

Further, we have to lay before you new facts in the

case in question. It is obvious that, from the mode in which evidence is taken in our Courts of Justice, the witness is prevented, either by legal technicalities or by the manner in which questions are put, from embodying all he knows and all he wishes to convey. This is specially the case in matters of medical evidence; the witness being compelled to express himself in terms which are neither sufficiently scientific nor adequately precise. The evidence, moreover, is of necessity disconnected, and for this reason loses a great part of its weight, and often falls short of its intention.

In this exposition of our views we confine ourselves entirely to matters of science; the circumstantial evidence in the case, to our minds alike compatible with guilt or innocence, we leave as foreign to our object.

The first question which presents itself to us as scientific men is this: *Was the death of Isabella Bankes compatible with natural disease as the producing cause?* To this question we can give a decided affirmative.

In the first place, from the evidence adduced by the prosecution at the trial, we have direct proof that the deceased was for years preceding her death the subject of chronic functional disease of the digestive organs. This condition, as evidenced by the symptoms in the

earlier part of her case, is, in accordance with our experience, premonitory of the disease of which we believe she died. This experience is supported by that of our best and most classical medical writers. Not to trouble you with quotations, we would simply lay before you, in his own words, the experience of the distinguished Abercrombie:

In speaking of acute and chronic inflammatory disease of the mucous membrane of the intestinal canal, and its results, he observes:—

"Some of the chronic cases appear to go on for a considerable time without much disturbance of the general health; but in others, there is much weakness and emaciation, frequently with hectic paroxysms; and sometimes there is a peculiar rawness and tenderness of the mouth and fauces, with aphthæ or minute ulcers, often accompanied by a tenderness of the whole œsophagus, and a painful burning sensation in the stomach, produced by almost everything that is swallowed. The appearance of the evacuations varies in the manner which has been already stated; so that no diagnosis can be founded upon them. They sometimes consist, in a great measure, of bloody puriform matter, and of various combinations of this discharge with thin fæces, or with articles of food or drink partially changed; but in many cases, they will be found to consist, through the whole course of the disease, of fluid fæces without any mixture of morbid discharge. In some cases, again, there are discharges of venous blood, which may come off either in the form of coagula, or of a dark pitchy matter, giving a black or dark brown colour to the whole of the matter that is evacuated."

The more acute form of the ordinary dysentery of this country is thus described by the same Author:—

"The dysentery of this country is, in many cases, a mild disease, attended with little danger; and the affection seems to be seated, in a large proportion of cases, in the rectum or the lower part of the colon. It is accompanied by tenesmus, with scanty discharges of bloody mucus, and but little appearance of healthy fæces; there is generally some degree of fever, with more or less of constitutional disturbance, and frequently vomiting. Whenever such symptoms, however, occur, a disease is present which requires to be watched with much attention. While it is limited to a defined portion of the lower part of the intestine, it may be a disease of little danger; but it is to be kept in mind, that its danger is generally in proportion to its extent. If it be attended with pain and tenderness extending above the pubis, and along the course of the ascending colon, the case is becoming more precarious. If there be tenderness and tension extending along the epigastric region, so as to give reason to apprehend that the arch of the colon is involved in the disease, the case is more and more alarming; when there is reason to fear that it affects the whole course of the great intestine, the danger is extreme. There is generally, in this case, much constitutional disturbance, with quick pulse, thirst, anxiety, vomiting, hiccup, and rapid failing of the vital powers; the evacuations from the bowels vary in the manner which has been already referred to; being either mucous, watery, or feculent, or consisting of various combinations of these matters with each other.

"In all affections of the mucous membrane, the appearance of the tongue is deserving of particular attention. In many cases it shows no peculiar character, or only the usual appearances of febrile diseases; but

in others its indications are more important; and there are two conditions of it which are to be considered as marking dangerous conditions of the disease. The one is the dark parched tongue of typhus; the other is peculiar rawness, redness, and tenderness, often accompanied with aphthous crusts; and frequently these crusts may be seen extending along the pharynx."

Whenever symptoms of a chronic kind, as described above, occur in a feeble person, they are apt to lapse into the more acute forms of disease upon the occurrence of any exciting cause. If an epidemic affecting the intestinal canal should occur, these persons suffer most readily, and afford the bulk of the mortality. This simple statement is a brief illustration of a recognized fact in disease. It applies to both sexes.

But, in the female sex, a particular exciting cause may be brought into play,—we refer to the pregnant condition,—which exciting cause we know to have been present in the case of Isabella Bankes. From this arose, as we naturally infer, the sub-acute symptoms which marked her fatal illness. Her premonitory symptoms were, great delicacy of constitution, loss of appetite, inability to take nourishment, frequent vomiting on slight causes, such as an ordinary meal or the jolting of a carriage. Added to these, there had been a diseased condition of the womb of long stand-

ing ;—a condition frequently indicative of congestion of the abdominal organs, especially of the liver, and as frequently curable by simple remedial measures directed to the removal of the dyspeptic symptoms.

Leaving, then, these premonitory symptoms as proved, we find that, a few days previously to the 3rd of April (the day on which Dr Julius was summoned) the deceased, being at that time pregnant, was seized with the symptoms of vomiting and diarrhœa. These are symptoms not unknown even to healthy women in pregnancy at the period of life at which Miss Bankes had arrived—viz., forty-three years. They were, as we believe, the natural sequelæ, under such an exciting cause, of her previous condition. They went on from day to day increasing in severity, the purging assuming a dysenteric form, a frequent sequence of prolonged diarrhœa. Partly as the result of these constant discharges, and partly from the inability to retain food, and lastly, from the nervous shock to which the unfortunate woman was subjected by the arrest of the prisoner, she sank and died upon the 3rd of May.

Treating primarily of these two leading symptoms of vomiting and dysenteric purging as they occurred in the case before us, we can gather no evidence to prove that these symptoms in any respect differed

from the natural form of disease, viz, dysentery occurring in the pregnant condition. The vomiting of green and altered bile excited by all ingesta, the violent retching, the distaste for food, and the sensation of a disagreeable taste in various common articles of food, are the well-known concomitants of the early stage of pregnancy.

The dysenteric symptoms, commencing in ordinary bilious diarrhœa, and terminating in bloody and mucous evacuations in which shreds of membrane were frequently observed, accompanied by severe tenesmus, are the equally well-marked symptoms of natural disease. They are the simple unexaggerated signs of the dysentery we see in this country, and from which, in one or other of its forms (acute, subacute, or chronic), not less than fifteen thousand nine hundred and three persons died in England, between the years 1847 and 1852, and thirteen in London alone, in the four weeks preceding the date of the death of Miss Bankes.

But some other symptons have been referred to as observed in her case, symptoms which we will show were not only compatible with, but were to be expected in dysentery under the condition of pregnancy. Burning sensation in the throat and alimentary canal has been particularly dwelt upon; this symptom is common both

to pregnancy and to dysentery, even in their uncombined forms. It is due to the simple irritating effect of the abnormal secretions produced in the stomach and alimentary canal. It may occur even in bad cases of dyspepsia; and, as resulting from an acknowledged cause or causes of natural origin, its significance sinks into nothing. The sensation of a ball in the throat, to which attention has also been drawn, is clearly a symptom of hysteria, and is particularly common in the female sex whenever the uterine system is deranged; it is a constant attendant on the pregnant state, and is due to the intimate nervous connexion and sympathy which exist between the uterus and the organs of organic life. An aphthous state of the tongue, or thrush, was observed in this case; this condition is a peculiar, we may say, an essential sign of the exhaustive disorders affecting the alimentary system. It occurs in weakly children during intestinal irritation; it occurs during exhaustion from privation of food; it occurs in weakly dyspeptic adults in the later stages of numerous diseases of the adynamic type.

But there is another circumstance connected with this aphthous condition of vast moment. Of late years, from causes altogether unknown, the tendency to the aphthous, or, as it is now more commonly called, the diphtheritic state has universally shown itself. It has

shown itself as connected with dysentery, and has given rise to the introduction of the term "diphtheritic dysentery," by the greatest pathologist of modern times, Rokitansky. It has shown itself, again, as intimately connected with the pregnant condition. This point is one which has been noticed by Dr Tyler Smith; and, if there is a circumstance more than another which essentially proves that the disease of Isabella Bankes was of natural origin, it is this single up to the present moment misunderstood feature of her complaint. The quick feeble pulse noticed in the deceased may be passed over at once, as merely indicating a depressing disorder. Pain and tenderness of the abdomen on pressure, and a contracted state of the abdominal walls are in themselves the ordinary signs of ordinary disease. It would be impossible for the diseased state which we have described to exist in fact, and for such tenderness and contraction to be absent. Dysuria, or difficulty in passing the urine, was said to have been complained of on one occasion. This, as one of the most frequent complaints of early pregnancy, may be dismissed as a sign simply corroborative of the existence of that condition. The only other symptom which the case presents was a "look of terror," which the patient is said to have manifested when, at a late hour of night, three medical

men, one of them a stranger and coming express from Town, were introduced into her dying chamber to decide on the chances of a recovery. If really any importance is to be attached to such a sign, it is amply explained by the observation of Dubois, the leading accoucheur of France, who has particularly directed the attention of the profession to such expression of countenance, as a pathognomonic and prognostic sign of the fatal exhaustion produced by the vomiting of pregnancy.

After this consideration, in detail, of the symptoms of Miss Bankes, we will now, Sir, lay before you facts showing that her case, taken as a whole, is no new occurrence in the history of natural disease. In this recital, we shall introduce facts all important to the case, but which were, many of them, from a legal technicality, suppressed at the time of the trial. The occurrence of dysentery during pregnancy is one of the oldest facts noted from the days when midwifery became a science. Guillimeau, Mauriceau, Shaw, Denman, Burns, all refer to it; in reference to its danger, either to the mother, the embryo, or to both. The same fact has been observed by our modern writers. In 1848, Dr Churchill published the history of a case of which the following is a resumé: A woman, above forty years of

age, was attacked by severe dysentery, which was superseded by incessant vomiting. For a few weeks preceding Dr Churchill's visits, she had retained nothing on her stomach, and was reduced to the greatest degree of weakness and exhaustion. "She was literally skin and bone." She was confined to her bed, and suffered great agony from retching both night and day. Her pulse was 120, and so feeble as to be barely perceptible. She did not think herself pregnant, but this condition Dr Churchill suspected, and all usual remedies utterly failing to give relief, he, feeling sure that the woman could not live a week, produced the abortion of a fœtus of twelve weeks, which had evidently been dead for some time. The vomiting ceased on the production of abortion, but in six days she died of obstinate and continued discharge from the bowels, which resisted every remedy.

We have already said that an aphthous or diphtheritic tendency has of late years shown itself in cases of pregnancy. We are able to show further, by the most independent argument, that this condition in pregnancy has been connected with a dysenteric state so intimately and so frequently that in the combination a distinct form of disease has been fully recognised, and a series of symptoms classified which need not

be said to be analogous, but may be said to be identical with those observed in Miss Bankes's case. A special essay has indeed been written on this very subject. In Rhode Island there is awarded at stated times a prize, called the Fiske Fund Prize, for the best essay that may be written on a certain subject selected by the Trustees of the Fund. The prize is of the same kind as the Fothergilian and Astley Cooper prizes of this country, and is awarded in the same way. In the year 1856 the Trustees of the Fiske Fund offered as the subject for competition for their next Prize the following title of an essay :—*What are the Causes and Nature of that Disease incident to Pregnancy and Lactation, characterised by Inflammation and Ulceration of the Mouth and Fauces, usually accompanied by Anorexia, Emaciation, and Diarrhœa, and what is the Best Mode of Treatment?*

On June 3rd, 1857, the prize for the best essay on this subject was awarded to Dr David Hutchinson, of Mooresville; and the essay, at the request of the Rhode Island Medical Society, was published in 1857. In this essay Dr Hutchinson has brought together a weight of information which explains all that may appear anomalous in the case of Miss Bankes, and in cases similar.

We will transcribe Dr Hutchinson word for word in his recapitulation of the nature, symptoms, and course of the disease:—

"DIAGNOSIS.—This affection may be distinguished from other forms of stomatitis by a burning sensation in the mouth, as if it had been scalded, which is greatly aggravated by hot drinks; attended at first with redness of the mouth and tongue, and followed by aphthæ and ulcerations of the buccal cavity. In some cases there is a diffused redness of the mucous membrane of the mouth, instead of ulcers. These symptoms are generally attended, and often preceded by a burning sensation in the stomach, pyrosis, indigestion, and occasionally vomiting. The bowels are either constipated, or obstinate diarrhœa attends. The disease is confined to pregnancy and lactation, although it has been said to attack those that were not in those conditions, and even the male subject; yet we have seen it in no other conditions but those of pregnancy and lactation, and would infer that it had been confounded with some other form of stomatitis. In addition to the foregoing symptoms, its migratory character is highly diagnostic, and also the frequent and painful micturition which frequently precedes the affection of the mouth or diarrhœa.

"PROGNOSIS.—Always uncertain as to the final result. Although there is generally not any immediate indications of danger, yet such is the liability of the mucous structures to inflammation that the condition of the patient may always be considered precarious while the disease persists. When the disease extends to the larynx, trachea, or bronchial tubes, the patient may either die from the intensity of the inflammation, or at a remote period consumption ensues, usually in one or two years. But the patient is more apt to perish from the intestinal affection; when the diarrhœa persists, in despite of judicious treatment, and the discharges

are mucus, tinged with blood, indicating ulceration of the bowels, a fatal result may be anticipated."

In describing the causes of the above-named disease, Dr Hutchinson gives, as "intrinsic causes," feeble delicate constitution, debilitating causes, such as hæmorrhages and leucorrhœa, the scrofulous or tubercular diathesis, and anemia.

It has been correctly observed by Dr Hutchinson that this affection as connected with the pregnant condition is not peculiar to his country nor to the present period. We can confirm this observation by illustrations indicating a similar type of disease. He has also observed that the affection of the mouth is not the essence of the disease, but only one of its manifestations; the same condition of aphthous disorder may affect any of the mucous tracts, and may give rise to modification of symptom according to the tract or tracts affected;—to diarrhœa and dysentery when the bowels are affected; to painful urinary affection when the bladder and its canal are its seat; and to irritation of a burning character of the mouth and throat when these are the affected parts. An illustration of this form of disease, in which the intestinal mucous canal was the chief seat of the diphtheritic mischief, and in which pregnancy was the exciting cause, is recorded by Dr Barker, of Bedford.

"Mrs C., aged forty-two, the wife of a respectable tradesman in this town, became for the first time pregnant in the end of May, 1857. Immediately after conception she was attacked with the vomiting of pregnancy, which continued with unceasing violence until the time I was first consulted, August 15th. She had already received various medicines, such as magnesia, carbonate of soda, and Gregory's powder; but without any effect in arresting the vomiting; and she was considerably reduced, partly from the vomiting, and partly from the inability to retain food. A few days before I was consulted the symptoms were aggravated by the supervention of diarrhœa.

"When I saw her I found the following symptoms: she was suffering from extreme thirst, emaciation, and exhaustion, and was confined entirely to bed. The vomiting was intolerable. Whatever was taken was returned, sometimes with bilious fluid and mucus, while in the intervals between food there was a persistent loathing and nausea. The vomited matters gave an acid reaction with litmus. She was purged seven or eight times each day, and the matters ejected by the bowels contained no true feculent matter, but mucus, tinged with blood. Accompanying this there was painful tenesmus. The tongue was creamy in the centre, with red tip and edge; the pulse small, quick, and feeble. The whole symptoms, in fine, indicated an acute dysenteric attack, coupled with the vomiting.

"Detecting the pregnancy, and believing that all the phenomena of disease had their origin in sympathetic irritation commencing in the uterus, I prescribed, first, an effervescing mixture, with an excess of alkali, to each dose of which were added three minims of the diluted hydrocyanic acid of the *London Pharmacopœia*. This gave no relief. After trying this for a day or so, I prescribed a mixture containing, in each dose, the trisnitrate of bismuth, five grains; diluted hydrocyanic acid, three minims; and five minims of the solution of

hydrochlorate of morphia, in water. This mixture, continued every four hours for four days, produced no alleviation in the symptoms. I therefore moved a point in practice, paying more decided attention to the dysenteric symptoms, which had become more urgent. By this time not only was mucus, tinged with blood, still excreted by the bowel, but false membrane, resembling diphtheritic exudation, began to be thrown off in considerable quantity. I now prescribed chalk mixture, with ten minim doses of laudanum, three times daily; and a pill night and morning, containing two grains and a half each of Dover's powder and hydrargyrum cum cretâ. This treatment with the addition of catechu to the mixture, suppositories of opium, and enemata of starch and laudanum, was continued until the last day of August, but with no relief. The case now became of serious import, owing to the extreme exhaustion necessarily induced. On the last day of August my anxiety was somewhat relieved by the discovery of symptoms of threatened abortion. These symptoms continued; and, fortunately for the life of the mother, a fœtus was thrown off on September 1st. Immediately afterwards, the more urgent symptoms, namely, the vomiting and dysentery, began to subside, but were replaced for a few days by retention of urine, for the relief of which the catheter had to be used at stated intervals.

"By slow degrees the patient recovered. She has since been pregnant, and has given birth to a full-grown child."—'British Medical Journal,' July 30, 1859.

Dr Barker adds that he has seen another case of a similar kind, in which death took place fourteen days after the abortion of the embryo, owing to the persistence of the exhaustive discharges from the bowels.

In the course of the trial of Thomas Smethurst, one of the medical witnesses, Mr Edmunds, related

another example similar in character. In this instance a woman, in the fourth month of pregnancy, consulted the witness two or three times in the month of August, 1858, for symptoms of incessant vomiting and dysenteric purging. She was relieved temporarily, but eight or ten days afterwards the symptoms were present in greater severity than ever, and all remedies proved unavailing: miscarriage took place at the fifth month of pregnancy, but owing to a continuance of the symptoms, death followed a week later. This woman had constant vomiting, intense thirst, burning sensations, bloody stools containing shreds of membrane, tenesmus, and, in fact, all the leading symptoms we have adverted to in previous cases ; and after death, whilst the upper part of the alimentary canal was scarcely affected, the large intestine, including cœcum, colon, and rectum, were found extensively disorganised ; the mucous membrane being removed in large, deep patches of ulceration, the ulcers measuring the diameter of a shilling. We have received from Dr Freeman, a well-known practitioner of Plymouth, the details of another case, where death occurred from continued vomiting and discharges from the bowels during pregnancy. He writes that he attended his patient "from December 10th, 1853, to the 17th of March, 1854. During the first two months her sickness, though frequent, was bear-

able, but it began to increase afterwards ; for several weeks previous to her decease it was incessant, and the bowels were also greatly disturbed by diarrhœa. The case resisted all remedies, and the lady died, on the 17th of March, from exhaustion. Her death, in the opinion of myself and the medical friends who saw her, was occasioned by the irritation of the stomach and bowels induced by pregnancy."

In the evidence during the trial, Dr Girdwood related several instances of dysentery combined with the vomiting of pregnancy.

But apart from the complication of dysentery with the vomiting of pregnancy, we observe that the latter symptom alone has in many instances proved fatal. During the trial, Dr Tyler Smith gave ample evidence on this point from his own experience. In an essay, entitled "Vomissements incoercibles pendant la Grossesse," M. Cartaya has collected fifty-eight cases of uncontrollable vomiting, twenty-four of which proved fatal to the mother, without producing the abortion of the embryo, despite the most varied and energetic treatment. Professor Stoltz, of Vienna, records not less than eleven cases in which the vomiting of pregnancy terminated in death. Nay, so important has this disease been considered in Medical Science, that in 1855 a dis-

cussion took place in the Academy of Medicine in Paris, as to the propriety of producing abortion in extreme cases of this nature. If, then, to a condition in itself so dangerous, dysentery be superadded, what surprise is to be expressed at a fatal termination? For it is not only that the vomiting itself exhausts, but that it insures starvation; and that by such starvation the dysenteric disease and the destruction of the coats of the intestinal canal are of necessity favoured.

In the above statement, in which the facts of the fatal illness of Isabella Bankes have been placed side by side with other facts, learned by study of the natural history of disease, we trust we have adduced ample proof that the affirmative with which we started is indisputable; viz. *That her death was compatible with natural disease, as the producing cause.*

It has been urged over and over again by the prosecution, as a main argument in support of the hypothesis of death from a cause not natural, that the symptoms were unalleviated by all the remedies employed. We urge, on the other hand, that there is no fact more strikingly corroborative of the natural character of the peculiar disorder we have described, than its resistance to all remedial measures. It is

a universally admitted fact, that the sympathetic disturbance of the alimentary canal in pregnancy defies, in severe cases, all curative measures, and is aggravated by many, especially by medicines of a metallic character.

From the review of the symptoms of Isabella Bankes given above, we turn to the post-mortem appearances, as affording further confirmation of the natural character of her malady. From the great facts that it was not inflammation or ulceration of the stomach, that it was not inflammation or ulceration of the small intestines, but that it was inflammation and ulceration of the large intestine—of the cœcum, colon, and rectum, and of a small portion of the ileum contiguous to the ileo-cœcal valve—we maintain that the pathology, not less than the symptoms, point to the dysenteric nature of the disorder.

This opinion we could fortify by reference to the pathological history of dysentery, as given by our best pathologists; but the labour is spared us by the fact that the prosecution acknowledged the morbid appearances to be those of dysentery. The admission of Dr Wilks that the same appearances were observed in two fatal cases of dysentery, which occurred in Guy's Hospital, proves the fact better than any argument we could offer.

The existence of pregnancy, which had been overlooked by all the medical men engaged in the case, was proved by the discovery in the uterus of a fœtus, said to be of seven weeks, but the exact age of which was not decided. Two other points further corroborate the view we have taken of the case. There was evidence adduced of pre-existent disease of the liver. There was also evidence of subacute peritonitis. These indications are entirely consonant with what has been observed in similar cases of dysentery. We shall enter, in the next section, into a further consideration of the post-mortem appearances.

THE SECOND QUESTION which presents itself to us is: *Was the death of Isabella Bankes compatible with the hypothesis of poisoning by arsenic, antimony, or by both?* To this question we conceive a negative answer is justified by facts—symptomatic, pathological, and chemical.

It is justified by the symptoms. While it is true that the symptoms of vomiting and purging, and other symptoms observed in the case of Isabella Bankes, have been also observed in cases of *arsenical poisoning*, there has been no case known, and we challenge the production of the history of a case, in which death resulting from the administration of

arsenic in small and long-continued doses has not been preceded by a train of other symptoms, specific in their nature, but absent altogether in the case before us.

The symptoms thus absent are, moreover, not obscure in character; they are symptoms which must have attracted notice; they are symptoms as peculiar to the effects of arsenic as a poison, as the scarlet rash to scarlet-fever, or the pustular eruption to small-pox.

These absent symptoms are:—

1. Irritation and inflammation of the conjunctivæ of the eyes.

[This symptom is common to men and animals, and is considered by Mr Hunt, a practitioner who has had very large experience in the administration of arsenic, as the true criterion of the system being under the influence of that metal.]

2. Irritation, inflammation, and ulceration of the lining membrane of the nostrils.

3. Irritation, inflammation, and ulceration, or excoriation of the lining membrane of the lips.

4. Excoriation of the anus, and of the vagina in the female.

5. Hacking cough and spitting of blood.

6. A cutaneous eruption, called "eczema arsenicale."

7. A train of peculiar affections of the nervous system, viz., tremors of the limbs, tingling of the fingers and toes, spasms of the muscles of the limbs, convulsions, paralysis, delirium, and coma.

We would not state dogmatically that in a case of slow arsenical poisoning, every one of these symptoms must needs be present; but we assert that the entire absence of the whole series is decisive against the hypothesis of slow arsenical poisoning.

But the evidence against the arsenic hypothesis is doubly strengthened by the post-mortem inquiry. We have shown before, that the morbid appearances are acknowledged to have been those of dysentery. We say, as an addendum to this admission, that they were *not* those of arsenic. In slow arsenical poisoning, the stomach is the organ which first receives and suffers from the local irritant, when it is administered by the mouth; and we can add, that this irritant, however introduced into the system, exerts its primary and specific action on the lining membrane of the stomach. After the stomach, the small intestines are the parts influenced. The large intestines, with the exception of the rectum, either escape, or are the seat of lesions secondary to those of the stomach. In the case of Isabella Bankes these conditions were reversed. The stomach and small intestines, post-mortem results excluded, were scarcely affected; they were firm, and absolutely free from ulceration and abrasion. The large intestines were virtually and admittedly the seats of the disease. Now, as we have

no right to assume that the known pathology of arsenical poisoning was in this single example utterly subverted; we are compelled to arrive at the only possible conclusion, viz., that the pathology of the case of Miss Bankes was not that of chronic arsenical poisoning; and in this conclusion we are supported by the records of all experiments and experience.

Again, to take up the hypothesis of *Antimonial poisoning*,—while it is admitted that the symptoms of vomiting and purging are such as characterise poisoning by tartarised antimony, we are convinced that various symptoms specific of this poison were absent in the case of Isabella Bankes.

These absent specific symptoms are—

1. Sweating and cold clammy condition of skin, without febrile excitement.

2. A pustular eruption. The characteristic tartar-emetic pustule occurring on the skin, on the palate, or on both; or a red rash much resembling the eruption of scarlet-fever.

3. Symptoms of congestion of the lungs.

4. Watery choleraic discharges from the bowels, alternating with or succeeded by constipation.

[We can discover no case in which slow antimonial poisoning has been accompanied by dysenteric evacuations.]

We do not presume that a case of antimonial

poisoning would present necessarily *every one* of these symptoms; but it is our conviction, gathered from all that is yet known by experience, that the absence of each and all of these signs is opposed to the hypothesis that Isabella Bankes's death was due to antimony. The pathology of the case is also opposed to the hypothesis. As with arsenic so with antimony, the stomach is the organ primarily and distinctively influenced by the poison, and this in whatever way the poison is introduced into the body. After the stomach the small intestines share in the mischief, while the large intestines are but secondarily affected or may escape altogether. In the case of Isabella Bankes, as we have shown, the reverse obtained. Moreover, there is one pathological appearance common to poisoning by antimony which particularly marks the agent that has been at work. This is a general congestion of the soft vascular organs, and especially of the lungs. This latter congestion is a sign so well marked as to have led the distinguished Magendie to maintain, from its invariability, that antimony has the specific power of producing congestive pneumonia. The all-important sign here described was entirely wanting in the case of Isabella Bankes, whose lung tissue was found pale and free from disease.

The hypothesis of poisoning by a *combination of*

the two poisons, arsenic and antimony, is equally at variance with facts, symptomatic and pathological. It is true, that in regard to this mode of poisoning, we have only the results of experiment on the inferior animals to guide us. But we can speak authoritatively from such results. In four animals, dogs, treated by us with arsenic and antimony, we observed symptoms, and appearances after death, strictly in accordance with the specific effects of both poisons. All the animals had irritation of the conjunctivæ and nervous tremors; one had tartar-emetic pustules of the mouth, while ulceration of the stomach and congestion of the lungs were leading post-mortem results.

The negation of poisoning as indicated by the symptoms and the pathology of Isabella Bankes is confirmed by the *Chemical evidence* adduced. Let this fact first be remembered, that in her body no arsenic was found. With this let it be also remembered that there is not a case on record of slow arsenical poisoning, in which, on subjecting the tissues to modern chemical research, arsenic has not been, indubitably, discovered. We have searched, in pursuing our inquiries, all the scientific records of poisoning since the year 1808, the year when Rose first introduced an analytical proceeding for the discovery of arsenic in tissues and organic

mixtures; and the fact above stated is the result of that labour. We further state, from repeated experiments on animals, that it is impossible for arsenic to be administered in small and long-continued doses, in any way or combination whatever so as to destroy life, and yet leave behind in the dead body no evidence of its presence. It was truly at one time suggested, on evidence proved afterwards to be incorrect, that chlorate of potassa administered with arsenic has the power of eliminating the arsenic from the system as fast as it is introduced; the person subjected to such combination being at the same time killed by the poison. This position, in itself irrational, we have proved not to bear the touch of experiment.

We have proved by repeated experiments, that chlorate of potassa has no such power; and that in two animals treated to the death with equal doses of the poison, one animal having chlorate with the poison, the other no chlorate, the results, symptomatical and pathological are the same; and that the same amount of poison is found in the tissues of each. This fact we have proved with regard to antimony as well as arsenic.

An attempt has been made to show that as in one out of three evacuations passed by Isabella

Bankes arsenic in minute proportion was found, together with copper ; therefore arsenic must have been feloniously administered.

We will first consider the question of the safety of this analysis. In regard to this statement of the finding of arsenic, the broad fact stands out that the analysis was made by means of a specimen of copper which admittedly contained arsenic. Considering, then, the many existent chances by which the copper in such analysis may be oxydized and dissolved, we consider it a sacred duty incumbent on us to entirely repudiate an analysis made with such impure materials. The analysis may be true, it may be false, it may be a mixture of truth and falsity. Certainly an attempt was made to show that copper in some experiments did not dissolve in the presence of organic substances. But to prove this, months, we may say years of research, must be employed, and the effects of every organic substance, healthy and diseased, must be tested. So that in our present state of knowledge the inference is natural, that the copper yielded to the evacuation the arsenic found, as it was proved to have yielded arsenic to a solution of chlorate of potassa in which (as it was confessed) no arsenic originally existed.

But even if we were to admit that the arsenic was not introduced by the arsenical copper, but was de-

posited on it from the evacuation, there is afforded a direct interpretation of the circumstance, in the consideration of the nature and the impurities of the medicinal substances taken by the deceased.

Three remedies were administered to Isabella Bankes, two of which were proved to have contained arsenic. These were sulphate of copper and grey powder. Trisnitrate of bismuth, also administered to the deceased, is a drug in every specimen of which as far as we can ascertain arsenic is present. Trisnitrate of bismuth, obtained from the same wholesale house as that from which Isabella Bankes was supplied, we have proved to contain arsenic by abundant experiment. It was stated by a witness for the prosecution that a portion of Dr Julius's bismuth, supplied by that house, did not contain arsenic. We affirm from experiment that the analytical proceeding adopted by that witness for the detection of the arsenic in the bismuth, was entirely unadapted for the purpose of such detection. Had the simple and strictly chemical method of separating the two metals, bismuth and arsenic, in the form of sulphides, been adopted, the arsenic would have been infallibly found. Here, then, are sources for the introduction of arsenic into the body of Isabella Bankes. But now the question of quantity is brought into conflict. The prosecution affirmed that the quantity

discovered in the evacuation was more than could be accounted for by the supposition that the metal found its way through the medium of medicines containing it as an impurity.

Upon this we feel constrained to examine the mode by which the quantity of arsenic assumed to have been in the evacuation was determined. A minute ring of microscopical crystals of arsenious acid was obtained from the evacuation. The ring was never weighed, but a comparison by sight was instituted with another portion of arsenic first weighed and then sublimed into a tube. The hundredth of a grain was hereupon guessed at as the weight of poison derived from two drachms of the evacuation.

We need not stay to expose the fatal fallacy of this mode of determination of quantity. Comparison of weight by mere sight, can give but an imperfect knowledge of relative weight, even when large objects are in question. What then of comparisons made on a number of microscopical crystalline particles undefinable by the unaided eye, and amounting altogether to the assumed weight of one $\frac{1}{100}$ of a grain? We are content, whatever our wonder at the assumption, to say that the quantity of arsenic in the evacuation was entirely undetermined, and that the accidental introduction of arsenic into the body by the means we

have pointed out, is amply sufficient to account for the undetermined trace of the poison said to have been discovered in the evacuation.

We have put the correctness of this view to the test of experiment. Having obtained a specimen of urine from a patient who had for six days been taking bismuth in small doses, we found arsenic in the urine, and thus proved the fact that bismuth administered by the mouth will yield arsenic to the excretions.

In the same terms as those in which we have spoken of arsenic and its detection, we would speak of *antimony*.

There is no known instance of slow poisoning by this agent, either in man or a lower animal, in which, after death from the agent, the poison has not been found in the liver. In the evidence given for the prosecution, amidst discrepancy and hesitation, it was stated that traces and indications, and *less* than traces and indications, of antimony were found in the blood, in portions of the intestines, and in one kidney, but not elsewhere.

To us it is incomprehensible that antimony should be found in the blood in any case, and not be found in the liver; the organ which according

to all experimental history is the chief depot of the poison. This contradiction of all foregone experiments throws a doubt over the validity of the peculiar experiments by which antimony was presumed to have been determined in the tissues of Isabella Bankes; a doubt strengthened by the circumstance that the mode by which the antimony was sought for, is unknown to all but the experimenters. But, granting, once more, that undefined and indefinable traces and indications of antimony were derived, the detection is explainable with perfect consistency, irrespective of the hypothesis of felonious administration. Antimony is so slow to leave the body that it may be detected in animal tissues three months after it has ceased to be administered. It exists, moreover, as we have proved, as an impurity of grey powder, of which the deceased took thirty-two grains. It exists in bismuth, another substance administered medicinally to the deceased. With these facts before us, which admit of direct demonstration, we offer no exaggeration in saying that an hypothesis of felonious administration based on the finding of traces and indications of antimony in the tissues of Isabella Bankes, falls to the ground, bereft alike of ingenuity and probability.

We do not enter at length on the hypothesis that the death of Isabella Bankes was due to the slow administration of *corrosive sublimate* as a poison. It were as fair to assume that the death was produced by *iodine* or *lunar caustic*. The specific effects of these two substances were not more absent than were the specific effects of mercury. This hypothesis of mercurial poisoning, suggested by two of the medical witnesses for the prosecution, was given up as it was uttered; and we have noticed it but to point out this fair and unmistakeable inference,—that if two of the gentlemen who attended Isabella Bankes were so little cognizant of her symptoms, and of the symptoms produced by corrosive sublimate, as to suggest the hypothesis of poisoning by corrosive sublimate, their opinions as to poisoning altogether must be taken with the most solemn reserve.

We say, with solemn reserve,—nor does our reason for such assertion rest alone on the argument we have given above. The witnesses who saw the patient stated that they one and all, independently, concluded that the symptoms were those of *poison*. One and all, and to the last forty-eight hours of life, they treated for *dysentery*. They must therefore have doubted to the last between dysentery and poison, and have given the casting-vote to dysentery. Adding pregnancy to

dysentery we affirm the correctness of that vote,—nothing more.

The sum and substance of our argument is as follows:—

1. The symptoms and pathology of Isabella Bankes were consistent with dysentery occurring in a pregnant and previously unhealthy woman; and her death is fairly ascribable to such producing cause.

2. The symptoms and pathology of Isabella Bankes are *not* consistent with the hypothesis of poisoning by arsenic, by antimony, or by both these poisons; nor is death fairly ascribable to them.

3. There is no chemical proof whatever that either antimony, arsenic, or any other irritant poison, was ever feloniously administered to Isabella Bankes.

With these opinions firmly fixed in our minds, we gave evidence at the trial on the part of the defence. Nothing that has transpired either at the trial, or since, has tended in the slightest degree to modify our opinions; and now that sentence of death is passed on the prisoner, we present our evidence to

the Crown as the last tribunal.—We have written patiently and temperately: we pray for a patient and a careful perusal.

We are, Sir,

With profound respect,

Your obedient, humble Servants,

B. W. Richardson, M.D.,
J. L. W. Thudichum, M.D.,
Francis C. Webb, M.D.

Grosvenor Place School of Medicine,
August 26th, 1859.