

vein contains a far greater number of both red and colourless corpuscles than that of the portal vein. The corpuscles of the portal vein show likewise under the microscope a more distorted shape than the blood-corpuscles of the general system; they are also richer in fat.

Now, in jaundice, if a number of old analyses may be trusted, the amount of blood-corpuscles is very greatly decreased. This has been explained by supposing that the bile-acids circulating in the blood destroy a large number of the red corpuscles. If, however, less than one *gramme* a day of bile-acids pass through the system, as I have endeavoured to show above may be the case, the bile-acids must be in so dilute a solution, that very little action upon the corpuscles can take place, in no way enough to account for the great diminution of the red corpuscles. If the liver be largely concerned, therefore, in the making of red blood-corpuscles, and its functions in jaundice be greatly impaired, it seems more probable that the anæmic state of the blood in jaundice may be due to the injury done to the liver. The general state of nutrition in jaundice should, however, be kept in mind, as there can be no doubt that the removal of the bile from the intestines causes a great disturbance in the phenomena of absorption.

The last function of the liver, the secretion of urea, rests upon a base by no means so well founded as the others. It is not a theory which, in the present state of knowledge, greatly commends itself to my mind, nor do the observations which I have made upon the urea in jaundice seem at all to confirm the theory. For, if most of the other functions of the liver known to us be greatly impaired or even entirely abolished, it would be strange if this alone should remain in unchanged vigour. And yet this is really the case; for, in a series of estimations which I have made, and published in a paper read in March last before the Royal Medical and Chirurgical Society, I did not find the urea so much diminished as on Meissner's theory might be looked for. The decreased amount could be readily accounted for either by the disease which caused the jaundice, the general health and food of the patient, rest in bed, and the like; while, in two cases in which the obstruction to the ducts was most complete, and in which no other disease save the obstruction was present, the amount of urea reached its highest point. These results do not dispose me to look with great favour on Meissner's theory.

## THE BALHAM MYSTERY.

By W. F. WADE, F.R.C.P.,

Physician to the General Hospital, Birmingham; etc.

THE verdict of the last jury has been eminently satisfactory to a large number of the public, consisting chiefly, if not entirely, of those persons who, without waiting to hear the evidence, had come to the same conclusion at which the jury arrived. For my own part, having read the evidence daily in the *Times'* reports, I had come to think that, on the whole, an open verdict would be the proper one. Having since re-read the same reports, in my judgment there is not sufficient evidence to say:

1. That Mr. Bravo died from taking tartar emetic;
2. That he did not take it accidentally;
3. That he did not take it suicidally;
4. That he was murdered;
5. That antimony was not given to him for the purpose of nauseating, without any intention either then or subsequently to take his life.

Whilst against any hypothesis which may be set up to account for his death, arguments more or less strong, but in no case trivial, may be adduced, there seems to me a very considerable preponderance of evidence in favour of suicide.

1. Did Mr. Bravo take antimony in the form of tartar emetic?

Dr. Redwood, who made the analyses, is Professor of Chemistry to the Pharmaceutical Society; and, as his name does not appear in Churchill's *Medical Directory* as a medical man, it is fair to assume that he has no medical qualification. He distinctly states that he did not detect tartar emetic, and that he only infers, as a matter of probability, that it was this drug, and not some other form of antimony, which had been taken. This inference was drawn partly from the symptoms; but when other preparations, such as James's powder or black sulphuret, produce symptoms at all, these are indistinguishable from those produced by tartar emetic. It is needless to say that any one might obtain any quantity of James's powder with little if any difficulty. With regard to black

sulphuret, Pereira says (*Materia Medica*, vol. i, p. 397) it was known in the most ancient times, being used by the Asiatic and Greek ladies as a pigment for the eyebrows. Dr. A. T. Thomson says (vol. ii, p. 221, note), "It was with the sulphuret of antimony that the Greek and Turkish ladies, to use a Scriptural phrase, 'put their eyes in mourning'. The sulphuret was applied within the eyelids, and produced a peculiar softness of expression". Further, "prepared sulphuret of antimony is the sulphuret of commerce levigated with water on a porphyry stone. It is inodorous, insipid, of a dark leaden grey hue, and stains the fingers when handled. It is insoluble in water and in alcohol, partially soluble in the vegetable acids, and consequently in wine. As an emetic, it is uncertain in its effects. If the stomach be acecent, it operates with violence". It is superfluous to point out the acecent state of the stomach an hour after dinner, and the presence of Burgundy in the stomach, in this case. It contains, on an average, about 70 per cent. of metallic antimony. It is curious to note that the vomit in this case had been so drenched with heavy rain that only the solid portions remained, and to note at the same time that tartar emetic is easily soluble, and had, in all probability, if taken at all, been taken in solution, and would, therefore, be easily washed away; whereas the black sulphuret is insoluble in water, and would, therefore, if mixed with solid matter, be unaffected by the rains. It is also a fact, that Mrs. Bravo had some means of darkening her hair. I may add, that if it were proved that Mr. Bravo took this drug and not tartar emetic, the suspicion of suicide would amount almost to a certainty. James's powder is also, in great part, if not entirely, insoluble in water.

From these considerations my opinion is drawn, not only that it is not certain that the antimony was taken in the form of tartar emetic, but that it is more probable that an insoluble preparation of antimony had been taken.

2. That he did not take it accidentally.

No antimony has been traced to the possession of any one in the house, excepting some homœopathic preparations which Dr. Redwood asserted to be so weak as to be innocuous. The former possession of tartar emetic by the coachman Griffiths, and some other circumstances, may be sufficient to excite a suspicion against certain parties, but are quite insufficient to preclude the possibility of accidental death.

3. That he did not take it suicidally.

This part of the subject divides itself primarily into two heads: *a.* Reasons for thinking that he did not commit suicide; and *b.* Reasons for thinking that he did.

His stepfather states that he was a very courageous man, and that he had gathered from him in general conversation that he considered suicide cowardly. Whether suicide is a cowardly or a courageous act, is a question upon which much might be said. But the opinions expressed by poor Mr. Bravo in cosy chat with his stepfather before his marriage, have little to do with his actions or views under very different circumstances. Besides, crimes are constantly committed by the very last person who would, in the opinion of his intimates, be likely to perpetrate them. Look at the frequent embezzlements by highly well-conducted persons. Several eminent alienists have publicly expressed the opinion, in which I entirely concur, that he was a man very likely, under suitable conditions, to commit an impulsive suicide. The evidence of educated and highly respectable friends, whose opinions on this subject are those of unskilled witnesses, was allowed to go unchallenged to the jury.

A second reason is that, had he desired to commit suicide, his medical knowledge would have prevented him from using tartar emetic. His stepfather stated that he took great interest in surgical matters, and attended operations at one of the hospitals occasionally; and, again, "I say my son had a liking for surgery, but, as distinguished from surgery, his medical knowledge was only general". Some of his legal friends gave somewhat similar evidence.

His uncle by marriage, a London hospital surgeon, said that Mr. Bravo knew something of surgery; and, as medicine and surgery are now-a-days intimately connected, he supposed he knew something of medicine. He also said: "He never went to any other part of the hospital but the operating-room; and admitted that he could not tell a man who was likely to commit suicide from one who was not."

In the country of the blind, the one-eyed man is king. It is quite possible that, by seeing and talking of a few operations, he might get the credit with his companions, who knew nothing, of having medical knowledge. There is no evidence worthy of the name that his skill in medicine would lead him to avoid antimony or select any other drug for suicidal purposes; besides, the presumption is that, if he committed suicide, he did it impulsively, and in such cases people are not particular as to the means. But, suppose he had acquired therapeutical or toxicological knowledge of antimony as a poison, what would he have learnt? Firstly, that tartar emetic has scarcely, if ever, been

used for what we may term acute murder, but for chronic murder only. Secondly, that it has been used for suicide. Out of six cases of antimonial poisoning quoted by Orfila, two were suicidal and four accidental. One of them is such a remarkable instance of what a determined or courageous man will do that it is worth quoting. M. N., aged 43, resolved on suicide, asked for arsenic at several places, but could not get it; resolved then on tartar emetic, collected about twenty-seven grains from different shops, went to a coffee-house, asked for sugared water, and took the poison in some of it. He was shortly afterwards taken to the Hôtel Dieu; when he came to himself, he sent away the assistants, and then confessed to the sister of the ward and Récamier that he had poisoned himself with tartar emetic. "If it be recollected that in general the antimonial tartrate of potash does not produce any grievous symptoms except when it is not expelled by vomiting, it will be readily conceived why this salt is so seldom the object of investigation in medical jurisprudence" (Orfila, vol. i, p. 181). With regard to fatal dosage, the same author records a case where six drachms were taken, and the girl completely recovered. Taylor says that two grains proved fatal to an adult, and that one ounce has been taken ineffectually. An army surgeon took suicidally two to three ounces by measure of chloride of antimony, a far more painful poison than tartar emetic. So much for a person's medical knowledge precluding the possibility of his using antimony suicidally.

We come now to the most painful act in this most painful tragedy.

There can be no doubt that the most powerful argument against the suicide theory is Mr. Bravo's repeated denials that he had done so. It is so shocking to think that these should have been made in the most solemn manner by a man who well knew he was dying, that we cannot wonder that many persons believe it to be incredible that they were untrue. But, on the other hand, if we believe that these denials truly expressed the facts, it is impossible to blink the fact that we have to entertain a belief with regard to the probable conduct of other persons which is no less shocking and even more horrible. We cannot escape from that dilemma.

There is one explanation which is not highly improbable, certainly not incredible, which will extricate any person who receives it from this perplexing difficulty. It is well known to all of us that shocks to the brain affect the recollection of circumstances which happened shortly before the shock was received. This is particularly familiar as a result of blows on the head. There was in this case to impair the brain-power the terrible crisis of semi-death through which he had passed before recovering consciousness, and afterwards the exhaustion of hæmorrhage and of recurrent agonies, and the depression produced by antimony. To what extent this might impair the abiding and continuous recollection of what he had done, if he had done anything, it is impossible to say. The fact, which we assume for the present to be true, that he had chided Mrs. Cox for revealing his secret, compels my own mind to the conclusion that, if he stated what was not true, he did so wittingly and wilfully.

He was looked upon by his friends as a particularly truthful man. We have also their opinion that he was not a particularly religious man. He told Mr. Royes Bell so himself, and he had no strict views on certain domains of morality. To what extent we are entitled to protect our secrets from too curious inquirers, is an open question. He, at all events, if we are to believe some portions of the evidence, had a secret of his own to keep, which anyone would go to the extremest length permitted by his moral views to protect. But he had also to protect the secret of another, and one confided to him under circumstances little, if any, less sacred and solemn than those of his dying moments. He was in that dilemma. He was compelled to commit what was equivalent to perjury; in either case, to his own great discredit, as his friends have succeeded in exposing to the world; but in the one which he did not choose, also involving in obloquy a woman to whom he was unquestionably attached, and whose painful secret had been entrusted to him on the strength of that attachment. He knew well enough that an admission of suicide could not fail to lead to an inquiry for motives, and to the certain discovery of a secret which was not creditable to himself, and highly discreditable to others. The argument that others might be suspected could have no weight; it was clear to him that Mrs. Cox's statement would, if needful, protect any one against such an accusation, and it is quite obvious, from his whole conduct, that he had not the faintest suspicion of any one of those surrounding his bedside. A death-bed statement accusing another of crime is an entirely different affair from one such as this; and had he, under the circumstances, charged anyone with poisoning him, I for one should have admitted that he was stating what he believed to be the truth.

As a minor excuse, it may be considered that, in his extreme state of prostration, there would be a natural desire to avoid the worry of answering a lot of questions, such as an avowal of suicide must have

invited. There is one other reason which must have prevented him from admitting suicide. If it were found by the inquisition that he had done so in a state of temporary insanity, it would have been next to impossible for him to carry out his wishes by making a will in favour of his wife. A will made under such circumstances would be in the greatest danger of being invalidated. A verdict of *felo de se* would have been most painful to his relatives.

We have, to some extent, glided into the second subdivision of this head, viz., the positive evidence in favour of suicide. Here, of course, first and foremost, stands Mrs. Cox. This witness gave evidence at the first inquest, made a statement at the Treasury, and at the second inquest was under examination for many hours. Of her cross-examination, it is only necessary to say that it was conducted with the most unmitigated and unsparing severity. She admitted that, in the hope of sparing the characters and conserving the secrets of her two friends, Mr. and Mrs. Bravo, she had perjured herself. With the same motive, she prevaricated, or something like it. The amount of reprehension which such conduct deserves is a matter which each one must determine for himself or herself. Beyond this, so far as I can judge, nothing was elicited to impugn her veracity. Nor was it impugned by the examination of other witnesses. Under these circumstances and with these views, she is, by ordinary rules of evidence, entitled to be considered the witness of truth. With similar limitations, I place Mrs. Bravo in the same category. With regard to this witness, and the eminently important question, whether it is true that she had told Mr. Bravo before marriage of her *faux pas*, I can see no reason for doubting her assertion that she had acquainted him with what we may call the Kissingen version of that affair. The statements that he was pressed to acquaint his mother with this, and those respecting his remarks on receiving the anonymous letter, are quite in accordance with the references in his own extant letter to his wife, referring to their having had "bitter trouble" and the "memory of our sorrow". The only other circumstance to which these expressions could apply would be the first miscarriage, and his jocose references to the second precludes this explanation. With these expressions before us, there is no difficulty in believing Mrs. Bravo, when she says he was always harping on "not having had my first love"; and that he told her, on his death bed, "you must marry again, but not a word of the past". It seems to me that, with the limitations above stated, there were between these witnesses, by some believed to have been in league to connive at and conceal a revolting crime, only contradictions of that class which is held to show that witnesses are testifying to the truth and not to a concerted lie. For example, neither Mrs. Bravo nor Mrs. Cox supported Rowe's statement, that Mr. Bravo muttered at dinner "I shall not be there", referring to Worthing. Yet, that was a remark certainly in favour of suicide. Again, Mrs. Bravo did not corroborate Mrs. Cox as to his angry remarks about the wine—an incident most likely to excite his wrath, and so contribute to a suicidal impulse.

There are some isolated points which it is convenient to refer to here. One is the destruction of the bottle of laurel water. The fact that it was kept so long is a much more positive proof of innocent possession, than the fact of its ultimate destruction can be of guilty knowledge. The fact of his previous attack of vomiting is a strong, but not unequivocal, proof, that antimony was not administered on the fatal occasion by way of commencing a system of chronic or slow poisoning; as, if antimony had been administered before, the undue effects on that occasion would have made the administrators more cautious. As regards the emptying of the basin containing vomit, nothing is more natural or usual in a sick room, as we often find to our great annoyance; and, on the other hand, the vomit outside the window was allowed to remain undisturbed. The active treatment immediately resorted to by Mrs. Cox is not consistent with the view that she had the purpose of murdering him by antimony. The same may be said of the actions and expressions of Mrs. Bravo, after the commencement of his illness. There seems to me to be nothing inconsistent in his first calling for his wife, and then trying to conceal the cause of his illness from her. The fact of his calling for hot water is, to my mind, inconsistent with the supposition that he felt intense nausea, but was at the same time unaware of having taken anything which would cause it. Unless taught by some previous experience, the first impulse of a person, under such circumstances, is not to produce vomiting, but to prevent it; and what the untutored public always demand or suggest, under such circumstances, is not hot water or an emetic, but brandy. Had Mr. Bravo asked for this, it would have been in accordance with the almost universal practice; and he had, after his previous attack, taken Curaçoa. Again, had he never spoken to Mrs. Cox on the subject, is it conceivable that, when he was first told that she had said he had confessed to having taken poison, he should have replied, "I do not remember having spoken of taking poison". Would he not have said, "What nonsense",

or "What a lie", or "How could I have said so"? or demanded at once that she should be sent for. Yet, he never on one single occasion, before others, spoke to Mrs. Cox on the subject. The only reasonable answer to this criticism is that he did not understand that Mrs. Cox had accused him of taking poison wilfully; and I do not see that any of the medical men put it categorically before him that she had done so.

After carefully reading all the evidence on the subject of Mrs. Cox informing the medical men that he had taken poison, I see no reason to doubt that whilst, for fairly sufficient reasons, she did not tell Dr. Moore, yet she believed that she did tell Mr. Harrison; though, in doing so, she mixed up her statement that he had taken poison with her opinion that the poison he had taken was chloroform. Afterwards, finding the doctors thought he had not taken chloroform, and seemed to doubt his having taken any poison, she repeated her statement to Mr. Royes Bell and Dr. Johnson. Her reasons for not telling Dr. Moore are, that she thought it would be such a scandal that he should have taken poison on account of jealousy for his wife; and that, when he recovered (as having, in her opinion, only taken chloroform, he would), Mr. Bravo would be so angry at the circumstance having been made known.

Mr. Bravo seems to have expressed no desire to recover, and no surprise at the suddenness of his illness, or at the fact that—putting poison on one side—the nature of it was obscure; or curiosity to know how, if he had taken poison accidentally, he could have got hold of it, or who could have given it to him intentionally. On the contrary, he determinately, and once rudely, put a stop to any such disquisitions. All this required the courage which he was said by his stepfather to possess.

With regard to motive, he was quick in temper; had (*quantum valet*) a sunstroke some years ago; was so dominated by an irritating and depressing idea as to have been little less than a monomaniac; had that day had the subject of his monomania prominently before him; had threatened to commit suicide; had a Turkish bath in the morning, and a warm bath in the afternoon. He had been suffering more or less from facial neuralgia for several days; and at dinner had nervous twitchings of the face, and looked ill and seemed irritable. In the morning, he had received an annoying letter from his mother; and in the afternoon, one of a similar character from his father; had that afternoon had his nervous system rudely shaken; and, on going up to bed, had been agitated by an exhibition of his wife's weakness in a matter which was known to annoy him intensely. Under such circumstances, an insane impulse is very far from surprising.

It is true, there are arguments on the other side; but these have been so fully and repeatedly set forward, that it is needless to repeat them. It is not to be denied that these are of some weight. Therefore, though I lean to the probability of suicide, as against murder, probably the sound conclusion to adopt is that, though Mr. Bravo was poisoned by antimony, there is not sufficient evidence to say positively how or in what shape it was introduced into the system.

4. That he was murdered.

The discussion of this question is virtually included in that of the preceding proposition, for it cannot be denied that the issue in this case is practically murder or suicide. I have only to add that, on a careful perusal of the evidence, sufficient proof of the existence in the mind or minds of any person or persons of hopes, fears, desires, wishes, or regrets, which might be supposed capable of supplying an adequate motive for crime, has not been established.

The fifth proposition I do not care to discuss, though arguments in its favour might be adduced.

It is more satisfactory to the sensational cravings of the multitude to believe in a great crime than in a great folly or in an act of insanity: a human weakness which may have contributed to produce the last verdict. It may be an inducement to some to believe in the crime, to admit that it is scarcely possible they can ever be proved to be in the wrong; whereas those who believe in the folly may, if they are wrong, be convicted of their error.

#### THE OVUM-FORCEPS.

In some few cases of premature expulsion of the ovum, I have found great difficulty in removing the mass (placental or other) from the uterus by the ordinary ovum-forceps; in some cases because the os uteri has not been sufficiently open, and in other cases because the forceps would not reach in consequence of massive buttocks; I, therefore, had a pair constructed (which I exhibited at Sheffield), two inches longer than the usual pattern in the handle, and measuring only half an inch wide at the fenestra. These will, as I have proved, pass and reach in cases where the old pattern is useless. In some cases, where it has been necessary to empty the uterus, I have owed my success to this modification.

HERBERT M. MORGAN, Lichfield.

#### CHAOS:

AS EXEMPLIFIED IN CENTRAL AND LOCAL SANITARY ADMINISTRATION.\*

By JOSEPH ROGERS, M.D.,

Formerly President of the Poor-Law Medical Officers' Association.

On November 29th, 1870, a meeting was held in London, which was numerously attended by metropolitan medical officers of health, Poor-law medical officers, and by gentlemen interested in sanitary reform. One object of the meeting was to lay down some basis for concerted action between district Poor-law medical officers and health-officers. This was attempted by formulating certain propositions which had been drawn up by Dr. Rumsey, the late Dr. Anstie, and by myself. Those propositions were laid before the then President of the Poor-law Board, Mr. Goschen, and were also forwarded to the Royal Sanitary Commission, with the request that they might be printed in the appendix to their Report. I have a copy of the report of the meeting, which contains the text of those propositions; but I will not now read them unless desired, but will content myself with this observation, that, if they had been adopted by the Government who brought in the Public Health Bill, 1872, most of the anomalies which exist in our Poor-law medical and public health arrangements would have been removed. At the conclusion of my address, which was largely devoted to the elucidation of these propositions, Mr. James Lewis, Poor-law Inspector, then of the Registrar-General's Department, Somerset House, read a paper on Registration of Disease. This done, Mr. Benson Baker proposed the following resolution: "That, in the opinion of this meeting, it is desirable that a general registration of all new cases of disease coming under treatment at the public cost, in workhouses and Poor-law districts, should be established; and that the medical officers of such workhouses and districts, as enjoying the largest opportunities of observing facts prejudicial to the public health, should be entrusted with the duty of making weekly, or, in times of epidemic, more frequent returns of cases actually coming under treatment, and of other facts concerning the spread of disease, to the health-officers of their respective districts." This resolution was seconded by the late Dr. Maunsell of Dublin, who came over specially to attend the meeting; and, after being supported by the late Dr. Letheby and others, was unanimously adopted, as well as the subsequent resolution recommending that Poor-law medical officers should be deputy health-officers in their respective districts. Looking back at what has since occurred, I regret that the term deputy was ever used: the respective classes of officers should have been health-officers and superintending health-officers. The report of that meeting was forwarded to the President of the Poor-law Board, Mr. Goschen, a gentleman whose perfect independence of action, foresight, and great intelligence, commanded the utmost confidence. Here let me observe that we had trusted that the outcome of the labours of the Royal Sanitary Commission would have been to suggest the formation of a Council of Public Health, to whose control would have been committed not only all matters relating to public hygiene, but the curative treatment of the necessitous sick. It was, therefore, with a feeling of dismay that we learnt that the powers of the Poor-law Board were to be enlarged, and that all the health-duties performed by the Medical Department of the Privy Council were to be absorbed in it. Still we had confidence that, as the services rendered by that department, and notably by that able man Mr. John Simon, were known and recognised wherever the English language was spoken, in any new arrangements that Medical Department would form a distinctive and prominent feature. Such might have been the case if Mr. Goschen had remained President; but, unfortunately, Mr. Childers became ill, Mr. Goschen was transferred to the Admiralty, and was succeeded by Mr. Stansfeld, who, like most *doctrinaires*, was as weak in practice as he was vigorous in theory, and who speedily exhibited himself as the instrument of those permanent lay officials of the Poor-law Board who, under the long reign of the late Mr. Henry Fleming, had contrived not only to bring the very name of that Board into general disrepute, but at one time had seriously imperilled its continued existence.

Here let me remark that the Local Government Board, like its predecessor the Poor-law Board, is a myth. Nominally, it consists of a President and certain members of the Cabinet; but, in reality, they

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