

PART D.—GENERAL.

With a view to assisting Magistrates and Police Officers in conducting inquiries into cases of suspected murder and other cases in which medico-legal questions are involved, an Appendix B is here to annexed, which contains the following :--

Appendix B deals with medico-legal questions.

- (a) symptoms produced by some of the more common poisons;
- (b) Questions that may be put to medical and other witnesses in certain cases;
- (c) Points to be inquired into in case of death from rupture of spleen,

APPENDIX A

STATEMENT OF THE CONDITIONS OF MEDICO-LEGAL
INQUIRY IN INDIA AS COMPARED WITH SUCH
INQUIRY IN EUROPE.

*Extract from the Report of the Chemical Examiner,
Punjab, for 1873.*

Conditions in
India different
from Europe.

The investigation and proof of medico-legal cases in India are generally conducted under very different conditions and by very different means from those in most countries of Europe, and it is very necessary for the officers engaged in this country to understand the value and The significance of the various parts of this investigation that each has to perform, and especially for the Magistrate to know how his decision is to be modified by the way in which the investigation has been conducted.

Proof of poisoning
mainly depends
on scientific
evidence. Poison-
ing has to be
inferred from
certain symptoms
and chemical
evidence.

The proof of poisoning, though it may be clear by other evidence, depends mainly on establishing the cause of certain-symptoms, or of death, that is, it rests principally on scientific evidence. Of This evidence there are three parts-the symptoms, the post-mortem appearances: if death occurred, and the chemical evidence from the proper investigation, and co-relation of which the unknown cause may be established.

In Europe medical
practitioners
skilled in dia-
gnosis are diffus-
ed all over and
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ant to recognise
symptoms and
certify the causes
of death.

In Europe there is a class of qualified medical practitioners, diffused almost universally, who certify to the causes of death, the public registration of which is compulsory. When a person is seized with sudden illness followed or not by death, there is almost always a medical attendant sufficiently skilled in diagnosis to recognise the symptoms as those of some known disease, or, if not, he is able in one class of cases to give an opinion that these symptoms are not those of any known disease but that they are those of a certain injury or poison, or class of poison: while in another class of cases he may only be able to say that they may possibly be those of a certain disease, but that they suspiciously resemble those of smile poison or injury.

In India, qualified practitioners not being generally diffused among the people the causes of sudden illness or death are not recognised by the ignorant relatives and attendants. In this way many cases of disease may be attributed to poison, or injury, or witch craft, and from ignorance, doubt or enmity be reported Police. On the other hand, cases of real poisoning may be passed over as cases of disease. This part the investigation has generally to be conducted by the Police who cannot be supposed to be skilled in the observation and estimation of symptoms. In addition, they have to get an account of the symptoms after they have occurred and from ignorant witnesses, and they have to contend with a difficulty in getting them to speak the truth unknown in Europe. The evidence so far is, therefore, generally defective, and must be so till there be a class of practitioners spread among the people sufficiently skilled to certify to the causes of deaths. In all possible cases the Police should have the assistance or advice of a Medical Officer, and the evidence of attendant hakims, who often show considerable acuteness in observation, should be taken down and signed by them.

The second part of the investigation, the postmortem examination, is generally made in Europe by the medical attendant along with another doctor. In definite class of cases an opinion can be affirmed that the *post-mortem* appearances are, or are not, those of the suspected disease, that they are not, or are those of the suspected injury, poison or class of poisons. In another class, in which the *post-mortem* appearances are not so diagnostic an opinion can only be given expressing probability or uncertainty.

In India the evidence from post-mortem examinations is also generally less definite from various causes. Not only is the evidence regarding symptoms, which ought to guide in distinguishing suspected and possible causes of death, more imperfect, but very often the autopsy has to be performed without any information at all. The number of possible causes of death being very numerous, it is in such cases only possible to give an opinion of certainty or probability when marked and profound lesions are left by disease, injury, and poison

In India a Medical attendant is generally not present to certify the cause of death or recognize the symptoms. Police have to get an account of symptoms from ignorant people who are not even inclined to speak the truth.

Post-mortem examination in Europe is more definite.

In India the evidence from post-mortem examination is less definite due to various causes.

poison and there is a chance of uncommon lesions or slight appearances which might prove important in evidence being overlooked. Again, the body often reaches the Medical Officer advanced in decomposition, when the slighter appearances left by disease, injury or poison, may not be recognisable. But in all cases it is distinctly to be understood that the examination should be made, as even in such cases many causes of death may be established or negatived. Also, in all cases a complete and not a partial examination is more necessary; in this country on account of the imperfectness of the preliminary evidence as to the possible causes of death. Different causes may afterwards be suggested in the evidence regarding which judicial inquiries may be made.

Police to supply to the Medical officer an account of the suspicious circumstances of death.

In order to render this part of the evidence more definite and valuable, it is necessary that the Police, in handing over the body for examination, should at the same time hand over an account of all that is known as to the suspicious circumstances of death, and it should be noted by the Medical Officer whether he was in possession of this information or not when making the *post-mortem* examination.

In Europe Chemical evidence is more definite as the preceding evidence is perfect.

In Europe the third part of the evidence the chemical—is one of the most definite in its results. The symptoms and *post-mortem* appearances recorded by duly qualified and informed observers are laid before the Chemical Examiner, and the question asked is whether one poison; or at most one of a class of poisons, be present in the substances sent; and he certifies to the presence or absence of those of the poisons indicated which can be identified by Chemistry.

This is not so in India, the preceding evidence being imperfect.

In India, from the imperfectness of the preceding evidence, the problem proposed is more indeterminate and often insoluble. As a general rule, substances have hitherto been sent for analysis with no information as to what poisons might possibly have been used. This problem, which is seldom met with in a lifetime by an expert in Europe, resolves itself into a search for the poisons commonly used in the country, unless some suspicious appearances or particles lead

to a conjecture in another direction. The number of substances that may cause death being practically indefinite, it would be impossible with a limited amount of material and time to attempt any thing else.

In order that the Chemical Examiner's evidence may be as definite as possible, if no poison is found, he should distinctly certify as to the poison he was led to examine for and whose absence he demonstrated.

Chemical Examiner should certify as to poison he was led to examine.

The position of the Magistrate as regards the scientific witness differs in India and England. In England the scientific witnesses are really cross-examined by the defence both as to the facts they have observed and the opinions they bring forward and similar witnesses may be brought forward to challenge their statements.

In England scientific witnesses are cross-examined both as to the facts observed and the opinions formed by them.

In India, this is very seldom possible. The Civil Medical Officer has practically functions rather resembling those entrusted to him in some countries of Europe. He is a Government official charged with the investigation of facts, regarding which he has to give evidence in the same way as the police officer. In addition, he has to interpret to the Court the precise value, significance and limits of the scientific evidence; and it is his duty to bring forward with judicial carefulness any conclusions or opinions connected with the facts.

This is not so in India. The Chemical Examiner should therefore restrict himself to statement of observed or demonstrated facts and should not make mention of probabilities or opinions.

The Chemical Examiner should restrict himself to a statement of observed or demonstrated facts and should on no account make mention of probabilities or opinions, unless specially asked, but it is his duty to reply to a questions regarding the meaning or limits of the scientific evidence which the local Medical Officer may wish to be referred or which the Court may choose to propose.

If the cause of death be not satisfactorily proved by the scientific evidence, the Magistrate has to consider to what extent it proves or disproves anything. It is purely negative in value in the case of poisons not detectible by Chemistry which do not produce symptoms and *post-mortem* appearances distinguishable

Magistrate should consider how far the scientific evidence proves or disproves anything.

with certainty from those of disease or injury. It is also negative in the case of detectible poisons of which the symptoms and *post-mortems* appearances alone are not decisive, when the Chemical Examiner has not been led to examine for those poisons. In this class of cases the proof principally depends on whether the Medical Officers was in possession of the suspicious circumstances of death when making the *post-mortem* examination and whether the Chemical Examiner knew both these when examining for poison. If the latter had no information he could only certify to the absence of common poison; and it is to be remarked that the large number of poisoning cases proved in this country is due to the ignorance of the natives, and that, as intelligence spreads, uncommon poisons will be used more frequently.

If no poison has been found, it should be noted that it may have been administered in the following cases : —

A poison may be given in various ways and yet be not detected.

1st—if a poison has been given for which there are no chemical tests;

2nd—if a detectible poison were used for which the Chemical Examiner was not led to examine;

3rd—if a volatile poison has been used which has been placed in circumstances in which it might have volatilized;

4th—if certain organic poisons have been used, and a sufficient time has elapsed for their decomposition;

5th—in the case of most organic poisons it is only the part left in the stomach after death that can be discovered, that which is absorbed into the system becomes chemically changed; so that it is really the part that does not cause death that is detected. Consequently, if the stomach has been well cleared out by the stomach pump or vomiting, or if sufficient time has elapsed before

death to allow the poison to be absorbed, none may be detected;

6th—even in the case of metallic poisons, which can be detected after absorption, if sufficient time (three weeks to a month) elapse before death the whole of the poison may be eliminated from the system by the kidneys, etc., and the patient may die from the lesions caused by the poison.

APPENDIX B.

(a) A SHORT MEMORANDUM BY THE CHEMICAL EXAMINER, PUNJAB, OF THE SYMPTOMS PRODUCED BY SOME OF THE MORE COMMON POISONS.

<i>Poison</i>	<i>Usual Symptoms</i>
<p style="text-align: center;">ARSENIC</p> <p><i>Native name</i> Sammal-far Sankhya Hartal and Mansil</p>	<p>Vomiting: burning pain in the stomach; great thirst: purging; sometimes cold skin; cramps in the limbs and sleepiness. Sleepiness; pupils small; complete insensibility, skin sweating: vomiting seldom occurs.</p>
<p style="text-align: center;">OPIUM</p> <p>Afium Afim</p>	<p>Numbness and tingling in the mouth and throat, afterwards in the limbs; fothing at the mouth: sleepiness; occasionally convulsion or delirium or paralysis.</p>
<p style="text-align: center;">ACONITE</p> <p>Bish</p>	<p>Sleepiness; pupils enlarged; delirium; insensibility; vomiting rare.</p>
<p style="text-align: center;">DHATURA</p> <p>Dhatura</p>	<p>Sleepiness; pupils enlarged; delirium; insensibility; vomiting rare.</p>
<p style="text-align: center;">Nux <u>VOMICA</u></p> <p>Kuchil</p>	<p>Twitching in the limbs followed by violent spasms and often lock-jaw. The spasm ceases for a time and then again returns, often without evident cause; it usually affects the whole body .</p>

Shortest time before symptoms, 5 minutes.

Shortest time before death 1 hour.

NOTE—Any one of the above symptoms may be absent though the poison by which they are usually caused has been administered.

Arsenic.—Ordinary interval between taking the poison and the appearance of symptoms, 1/2 to 1 hour.

Ordinary time before death, 6 to 12 hours.

Opium.—Ordinary interval before symptoms, 1/2 to 1 hour.

Ordinary interval before death; 6 to 12 hours.

Aconite.—Ordinary interval before symptoms. 15 minutes, Ordinary .. interval before death, 1 to 8 hours.

Dhatura.—Ordinary interval before symptoms, 5 To 10 minutes.

Ordinary interval before death, 6 to 12 hours.

Nux-Vomica.—Ordinary interval before symptoms, ¼ to 1 hour.

Ordinary interval before death, 6 to 12 hours

(b) QUESTIONS THAT MAY BE PUT TO MEDICAL AND OTHER WITNESSES IN CERTAIN CASES.

No. I.

Questions which may be put to a medical witnesses in a cases of suspected poisoning after post-mortem examination of the body.

1.— Did you examine the body of late a resident of,and, if so, what did you observe?

II.--What do you consider to have been the cause of death? State your reasons.

III.—Did you find any external marks of violence on the body? If so, describe them.

IV.—Did you observe any unusual appearances on further examination of the body? If so, describe them.

V.--To what do you attribute these appearances; to disease, poison or other cause?

VI.—If to poison, then to what class of poisons?

VII.—Have you formed an opinion as to what particular poison was used?

VIII—Did you find any morbid appearances in the body besides those which are usually found in cases of poisoning by ? If so, describe them.

IX.—Do you know of any disease in which the post-mortem appearances resemble those which you observed in this case?

X.—In what respect do the post-mortem appearances of that disease differ from those which you observed in the present case?

XI.---What are the symptoms of that disease in the living?

XII.—Are there any post-mortem appearances usual in cases of poisoning by..... but which you did not discover in this instance?

XIII.—Might not the appearances you mention have been the result of spontaneous changes in the stomach after death ?

XIV.—Was the state of the stomach and bowels compatible or incomplete with vomiting and purging ?

XV.—What are the usual symptoms of poisoning by..... ?

XVI.—What is the usual interval between the time of taking the poison and the commencement of the symptoms ?

XVII.—In what time does.....generally prove fatal ?

XVIII.—Did you send the contents of the stomach and bowels (or other matters) to the Chemical Examiner ?

XIX.—Were the contents of the stomach (or other matters) sealed up in your presence, immediately on removal from the body ?

XX.—Describe the vessel in which they were sealed up and what impression did the seal bear ?

XXI.—Have you received a reply from the Chemical Examiner; if so, is the report now produced that which you received ?

XXII.—(If a female adult), what was the state of the uterus ?

No. II.

Questions that may be put to a non-professional witness in a case of suspected poisoning

I.—Did you know , late a resident of ? If so, did you see him during his last illness and previously ?

II.—What were the symptoms from which he suffered?

III.—Was he in good health previous to the attack ?

IV.—Did the symptoms appear suddenly ?

V.—What was the interval between the last time of eating or drinking and the commencement of the symptoms ?

VI.—What was the interval between the commencement of the symptoms and death? (If death occurred).

VII.—What did the last meal consist of ?

VIII.—Did anyone partake of this meal with ?

IX.—Were any of them affected in the same way?

X.—Had ever suffered from a similar attack before?

(If any of the following symptoms have been omitted in answer to question I, special questions may be asked regarding them as follows)

XI.—Did vomiting occur ?

XII.—Was there any purging ?

XIII.—Was there any pain in the stomach ?

XIV.—Was..... very thirsty ?

XV.—Did he become faint ?

XVI.—Did he complain of headache or giddiness?

XVII.—Did he appear to have lost the use of his limbs ?

XVIII.—Did he sleep heavily ?

XIX.—Had he any delirium ?

XX.—Did convulsions occur ?

XXI.—Did he complain of any peculiar taste in the mouth?

XXII.—Did he notice any peculiar taste in his food or water ?

*XXIII.—Was he sensible in the intervals between the convulsions ?

‡ XXIV.—Did he complain of burning or tingling in the mouth and the throat, or of numbness and tingling in the limbs?

No. III,

Questions which may be put to medical witness in a case of supposed death by wounds or blows, after post-mortem examination of the body.

1.—Did you examine the body oflate a resident of; and, if so, what

did you observe ?

*This is with reference to Nux-Vornica.

‡ This is with reference to Aconite.

II—What do you consider to have been the cause of death ? State your reasons.

III—Did you find any external marks of violence on the body ? If so, describe them.

IV.—Are you of opinion, that these injuries were inflicted before or after death ? Give your reasons.

V.—Did you examine the body internally ? Describe any unnatural appearance which you observed ?

VI.—You say that in your opinion.
was the cause of death; in what immediate way did it prove fatal?

VII.—Did you find any appearance of disease in the body ?

VIII.—If so, do you consider that, if the deceased had been free from this disease, the injuries would still have proved fatal ?

IX.—Do you believe that the fact of the suffering from this disease lessened his chance of recovery from the injuries sustained ?

X—Are these injuries taken collectively or is any one of them ordinarily and directly dangerous to life ?

XL—Have they been caused by manual force or with a weapon ?

XII.—Did you find any foreign substance in the wound ?

XIII—By what sort of weapon has the wound been inflicted ?

XIV.—Could the injuries have been inflicted by the weapon now before you (No in the Police charge sheet) ?

XV.—Could the deceased have walked so far, spoken etc., after the receipt of such an injury?

XVI.—Have you chemically, or otherwise, examined the stains on the weapon, clothes, etc., now before you (No. in the Police charge sheet)?

XVII.—Do you believe the stains to be those of blood?

XVIII.—What time do you think elapsed between the receipt of the injuries and death ?

XIX.—What was the direction of the wound, and can you form an opinion as to the position of the person inflicting such a wound with respect to the person receiving it ?

XX.— Is it possible for such a wound to have been inflicted by any one on his own person? Give your reasons.

XXI.—Give precise direction of the wound (in gun shot wounds).

XXII.—Did the appearance of the wound indicate that, the gun had been discharged close to the body or at some distance from it ?

XXIII.—Did you find any slug, bullet, wadding, etc., in the body ?

XXIV.—Do you think it possible that you could have mistaken the aperture of entrance for that of exit ?

No. IV

Questions that may be put to a medical witness In a case of supposed infanticide after post-mortem examination of the body.

Male

I.—Did you examine the body of a-----child

Female

sent to you by the District Superintendent of Police on the of 19 ? And, if so, what did you observe ?

II—Can you state whether the child was completely born alive or born dead? State the reasons for your opinion.

III.—What do you consider to have been the cause of death? Give your reasons.

IV.—What do you believe to have been the uterine age of the child ? State your reasons.

V.—What do you believe to have been the extra-uterine *age* of the child ? Give reasons.

VI.—Did you find any marks of violence or other unusual appearance externally ? If so, describe them accurately?

VII.—Did you find any morbid or unusual appearances on examination of the body internally? If so, describe them accurately.

VIII.—Do you believe the injuries you observed to have been inflicted before or after death? Give reasons.

IX.—Can you state how they were inflicted? Give reasons.

X.—Do you consider that they were accidental or not? Give reasons.

XI.—Had the infant respired fully, partially, or not at all?

XII.—Did you examine the person of..... the alleged mother of the infant? If so, have you reason to suppose that she was recently delivered of a child? Can you state approximately the _____ date of her delivery? Give reasons.

No. V

Questions that may be put to a medical witness in a case of supposed death by hanging or strangulation.

I.—Did you examine the body of..... late a resident of.....? And if so, what did you observe?

II.—What do you consider to have been the cause of death? State the reasons for your opinion.

III.—Did you observe any external mark of violence upon the body?

IV.—Did you observe any unnatural appearances on examination of the body internally?

V.—Was there any rope or other such article round the neck when you saw the body?

VI.—Can you state whether the mark (or marks) you observed were caused before or after death?

VII.—By what sort of articles do you consider the deceased to have been hanged (or strangled)?

VIII.—Could the marks you observed have been caused by the rope or other article now before you (No. of the Police charge sheet)?

VI.—Had she passed the age of puberty?

VII.—Can you state approximately what her age was ?

VIII.—Did you find her to be a strong, healthy woman; or so weakly as to be unable to resist an attempt at rape ?

IX.—Did you examine the person of the accused?

X.—Did you observe any marks of violence upon his body ?

XI.—Was he suffering from any venereal disease?

XII.—Did you find the woman to be suffering from a similar or other venereal disease ?

XIII.—Had a sufficient time elapsed. when you examined the person of the woman, for venereal disease to have made its appearance, in case of her having been infected ?

XIV.—Can you state, approximately, how long the accused had been suffering from this ,complaint ?

XV.—Can you state, approximately how long the woman had been suffering from this (venereal) complaint ?

XVI.—Have you examined the stained articles forwarded to you, and now in Court (No of Police charge sheet) ?

XVII.—What is the result of your examination ?

XVIII.—Do you believe that a rape has been committed or not ? State your reasons.

No. VIII.*

Questions that may be put to a medical witness in case of suspected insanity.

I.—Have you examined.....

II.—Have you done so on several different occasions so as to preclude the possibility of your examinations having been made during lucid intervals of insanity ?

III.—Do you consider him to be capable of managing himself and his personal affairs?

This is with reference to Nux-Vomica.

**This is with reference to Aconite.

IV.—Do you consider him to be of '*unsound mind*', in other words, intellectually *insane*?

V.—If so, do you consider his mental disorder to be complete or partial?

VI.—Do you think he understands the obligation, of an oath ?

VII.—Do you consider him, in his present condition, competent to give evidence in a Court of Law ?

VIII.—Do you consider that he is capable of pleading to the offence of which he now stands accused?

IX.—Do you happen to know how he was treated by his friends (whether as a lunatic, an imbecile or otherwise) prior to the present investigation and the occurrences that, have led to it ?

X.—What, so far as you can ascertain; were the general characteristics of his previous disposition ?

XL—Does he appear to have had any previous attacks of insanity?

XII.—Is he subject to insane *delusions*.

XIII.—If so, what is the general character of these ? Are they harmless or dangerous ? How do they manifest themselves ?

XIV.—Might such delusion or delusions have led to the criminal acts of which he is accused ?

XV.—Can you discover the cause of his reason having become affected ? In your opinion was it *congenital* or *accidental* ?

XVI.—If the latter, does it appear to have come on suddenly, or by slow degrees ?

XVII.—Have you any reason for believing that his insanity is of *hereditary origin*? If so, specify the grounds for such an opinion; and all the particulars bearing on it, as to the insane parents or relatives of the accused; the exciting cause of his attack; his age when it set in; and the type which it assumed.

XVIII—Have you any reason to suspect that he is, in any degree, *feigning* insanity? If so, what are the grounds for this belief?

XIX—Is it possible, in your opinion, that his in-sanity may have followed the actual commission of his offence, or has been caused by it ?

XX.—Have you any reason to suppose that the offence could have been committed during a lucid interval, during which he could be held responsible for his act ? If so, what appears to you to have been the duration of such lucid interval ? Or, on the contrary, do you believe his condition to have been such as altogether to absolve him from legal responsibility?

XXI.—Does he now display any signs of *homicidal* or of *suicidal* mania; or has he ever done so to your knowledge?

XXII.—Do you consider it absolutely necessary, from his present condition, that he should be confined in a lunatic asylum ? or again :

XXIII.—Do you think that judicious and unremitting supervision, out of an asylum; might be sufficient to prevent him from endangering his own life or the lives or property of others ?

No. IX.

Questions that may be put to a medical witness in a case of alleged causing miscarriage (Section 312-315, Indian Penal Code).

I.—Did you examine the person of
If so, when ? What did you observe ?

II.—Are you of opinion that a miscarriage has occurred or not ? Give your reasons

III.—In what mode do you consider the miscarriage to have been produced whether by violence per *vaginam*, or by external violence or by the use of irritants internally ? Give your reasons.

IV.—It is alleged that a drug called was used, state the symptoms and effects which the administration internally of this drug would produce. Do you consider that it would produce miscarriage ?

V.—Can you state whether the woman was quick with child when the miscarriage was produced? State your reasons.

VI.—Did you see the foetus ? If so, at what period of gestation do you consider the woman to have arrived ?

_____ No. X.

Questions that may be put to a medical witness in a case of greivous hurt.

1.—Have you examined.....? If so, state what you have observed.

II.—Describe carefully the marks of violence which you observed.

III.—In what way do you consider the injuries to have been inflicted ? If by a weapon, what sort of a weapon do you think was used?

IV.—Do you consider that the injuries inflicted could have been caused by the weapon now shown to you (No. of Police charge sheet) ?

V.— What was the direction of the wound, and can you form an opinion as to the position of the person inflicting such a wound with respect to the person receiving it?

VI.—Is it possible for such a wound to have been inflicted by any one on his own person? Give your reasons.

VII.—Do you consider that the injuries inflicted constitute any of the forms of "greivous hurt" defined in section 320 of the Indian Penal Code? If so, which of them ? Give reasons.

The Magistrate in putting this question will show the Indian Penal Code to the witness, or the Magistrate may vary the form of the question so as to elicit the required information without calling the Witness's attention to the Code.

VIII.—Do you consider that the person injured is now out of danger?

IX.—It is alleged that the injuries were caused by manner indicated ?

..... Could they have been caused in the

X.— Have you chemically or otherwise examined the stains (on the weapon, clothes, etc.), now before you (No...
..... in the Police charge sheet)?

XI.—Do you believe the stains to be those of blood?

N.B.—In case of the Injuries being gun-shot wounds, questions XXI to XXIV under the head of No. III (Death by wounds) may be put to the witness.

(C) POINTS TO BE INQUIRED INTO IN A CASE OF DEATH
FROM RUPTURE OF THE SPLEEN

*Report on rupture of the spleen, by Dr. Burton-Brown,
late Principal of the Lahore Medical College.*

Rupture of the spleen usually occurs from violence affecting the spleen when it is already diseased, but it may occur when the structure is quite healthy if the violence is very great, or it can happen without violence if the spleen is in a very diseased state; rupture has been known to have occurred either from muscular efforts, or straining, coughing or vomiting or even it is stated, spontaneously in intermittent fever, but these cases are very rare. It is, therefore, of great importance to determine what was the condition of the spleen in all cases in which death has been caused by rupture of this substance.

When the spleen is ruptured by violence the marks of that violence can sometimes be seen on the body but not in all cases, since rupture of the spleen often produces death so rapidly that no effusion of blood can occur, and also sometimes the violence appears only to affect the spleen, and not to injure other parts.

It is, therefore, quite possible that the spleen should be ruptured by violence and yet no evidence of the injury be seen on the skin or other parts of the body.

The condition of the spleen previous to rupture can generally be determined by its size and consistency after death. A healthy spleen measures about 5 or 5-1/2 inches long, 3 or 4 wide, and 1 to 1/2 thick; and it weights about 6 ounces—varying from 4 to 8. When the spleen is so diseased as to render a rupture

from slight violence probable, it will often weigh from 10 to 30 ounces, and measures from 7 to 12 inches in length. The healthy spleen does not project beyond the ribs but the diseased spleen does so,—often to a considerable distance.

The consistency of the spleen, when healthy, is moderately firm, so that it may be but with ease, leaving a sharp edge and smooth surface when divided, but in disease the spleen may become quite soft and pulpy or even diffluent, so as to fall away like a thick liquid when the capsule is divided. The condition, however, may also occur from putrefaction of the body if kept long after death or if the weather is very warm; and therefore these circumstances should also be ascertained.

The enlargement and softening of the spleen from disease is usually a result of previous attacks of intermittent fever or ague; it may also occur in other diseases, especially typhoid fever, scurvy and purpura.

The part of the spleen which is usually ruptured in the concave or inner surface and the extent of the rupture varies greatly; but death usually occurs more rapidly in proportion as the rupture is larger and deeper. When the rupture is small, the patient may live several days, or may even recover entirely. "

If the rupture is extensive, the person is usually incapable of moving from the place where the rupture occurred.

Lastly, in some instances the spleen is covered with a layer or membrane caused by previous attacks of inflammation; this may delay or even prevent death by limiting the rupture or preventing excessive bleeding.

The questions, therefore, which appear necessary to ask in cases of death from rupture of the spleen are---

Ist.—What appearances of external violence were perceptible on the body?

- 2nd.*—What was the size and weight of the spleen . after death ?
- 3rd.*—How far did it project beyond the ribs ?
- 4th.*—What was the consistency of the spleen—hard, firm, soft, pulpy or diffluent ?
- 5th.*—How long after death was the body examined and what the temperature of the air?
- 6th.*—Was the body much putrefied ?
- 7th.*—What was the position of the rupture ?
- 8th.*—What was the length and breadth of the rupture ?
- 9th.*—Is it, your opinion that the rupture was caused by external violence or not ? State your reasons for your opinion.
- 10th.*—Were there any adhesions about the spleen ; if so, were they older than the rupture or not ?