

Meena

UNIVERSITY OF JAFFNA
SRI LANKA



DR. ARUNASALAM SIVAPATHASUNDARAM

Memorial Lecture

By-

PROFESSOR V. K. GANESALINGAM

1999



Dr. Arunasalam Sivapathasundaram

Memorial Lecture



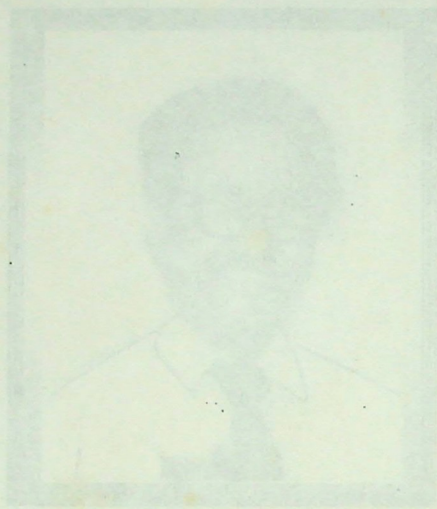
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Late Dr. A. Sivapathasundaram Memorial Lecture

- First Edition December 1999
- Printing: Registrar's Office, University of Jaffna
- Pages: 31



Type set: S. Preman
Printed & Published By: Dr. K. Kunarasa,
on the Behalf of the University of Jaffna
at the Registrar's Office, University of Jaffna
Sri Lanka.

Late Dr. Arunasalam Sivapathasundaram Memorial lecture

INTRODUCTION

Although twelve years have elapsed since Dr. A. Sivapathasundaram met with his tragic end while on duty, at the prime stage of his life, his rich memory prevails in all of us. He was an outstanding and eminent paediatrician. He considered his service above his own self.

The University community and the public graciously established " Dr. Arunasalam Sivapathasundaram memorial lecture" to honour him for his yeoman service. This lecture, not only cherished his memory but also promotes his field of specilization incorporating new and modern dimensions.

Prof. V. K. Ganesalingam a Senior Professor of Zoology and former Dean, Faculty of Science is good enough in fulfilling this task today, by presenting a paper titled. "Some scientific evidence in criminal offences against children and adults". I am sure, this paper would give an impetus and inducement for our staff. students and general public to know about this matter still more.

I wish every success on this occasion

Prof. P. Balasundarampillai
Vice Chancellor
University of Jaffna
07.12.1999

The Dr. Anandarama Memorial Lecture

MEMORIAL LECTURE

Although he has been blind since Dr. A. Anandarama met with his tragic and noble end, at the prime stage of his life, his rich memory pervades in all of us. He was an outstanding and eminent personality. He considered his service above his own self.

The University community and the public generally established "Dr. Anandarama Anandarama Memorial Lecture" in honour of his glorious service. This lecture not only enriched his memory but also promotes his field of specialization by providing new and novel dimensions.

Prof. V. K. Chandrasekhar, a Senior Professor of Zoology and former Head, Faculty of Science, IIT Bombay, in fulfilling this role today, by presenting a paper titled "Some scientific advances in chemical sciences against children and adults". I am sure, this paper would give an impetus and redoubtment for our staff, students and general public to know about this matter still more.

I wish every success on this occasion.

Prof. P. Balasubramanian
Vice-Chancellor
University of Jammu
07.12.1996

**SOME SCIENTIFIC EVIDENCE IN
CRIMINAL OFFENCES
AGAINST CHILDREN AND ADULTS**

PROFESSOR V. K. GANESALINGAM

Late Dr. A. Sivapathasundaram:

This is Dr. Arunasalam Sivapathasundaram's memorial address. Late Dr. Sivapathasundaram was an eminent paediatrician and served in many parts of Sri Lanka. He performed his duties with responsibility and a spirit of service. I have associated with him for about 15 years when he was working in the Base hospital, Point-Pedro and Jaffna Teaching Hospital. During this period I came to know him very intimately. It is very unfortunate that he lost his life under tragic circumstances.

Children are our treasures:

It gives me great pleasure to deliver Dr. Sivapathasundaram's memorial lecture today. As a paediatrician, late Dr. Sivapathasundaram devoted himself in looking after the health of children, to make them physically and mentally healthy in their life. Our children are our treasures. They should be happy and prosperous in their life. They should be encouraged to become leading citizens in this country.

Abuse of children:

But unfortunately, the abuse of children for nefarious purposes is becoming a menace nowadays. Juvenile prostitution and pornography are rampant, and in many instances, this activity is unnoticed by the law authorities. This takes place in the "underground market". Such trade is well planned and is being executed meticulously all over the world irrespective of whether it is a developed or developing country.

Some female children of tender age group between 8-13 years or 13-18 years are living in an unprotected world and in the midst of sex perverts. They are innocent and they do not have strength to fight against it. Equally, some boys of school going age are being used for pleasure for just a few coins, lunch or dinner. Perhaps this is directly or indirectly encouraged by some parents for their steady income with no investment.

Moreover, the children are surrounded by thorns and hooks, such as parental problems, economic conditions, drop out of school, childhood trauma, cultural changes, uncertain future, bad company, fear of death *etc.*

Often female children are being raped making use of available opportunity. Female adults too are being

raped in lonely places. In order to hide this crime, another crime is committed subsequently to get rid of evidence by murdering them by cutting the neck or strangulation or dumping into wells. The culprit who performed such crime should be searched for and brought to book by scientific evidence. Thereby an appropriate punishment should be given to the culprit according to the prevailing law and order. Thus the scientific evidence is essential for proper administration of justice in criminal offences committed on adults as well as children.

Criminal offences:

The criminal matters are concerned with the offences which are considered to be against the interest of the general public. Offences against person, property, public safety, security of state and many other matters come under criminal law. Here the dispute is between the state, represented by the crown counsel as directed by the Attorney General and the accused who may be represented by the defence counsel(s).

A criminal offence has to be established with regard to homicide, suicide or accident.

The manner of death accidental and suicide differs based on the type of evidence involved.

Death due to asphyxiation is a common cause of death. Hanging, strangling, drowning, poisoning and suffocation may cause death, which may be suicide accident or homicide. Wounds inflicted by firearms, knife and stabbing are difficult to be identified whether they are due to accident, suicide or homicide.

The sexual offence, such as rape is defined as "unlawful sexual intercourse by a man on woman, by force, fear or fraud". This is a serious offence

It is an offence if a pregnancy is terminated by illegal means in many countries. It amounts to homicide. An abortion may also be natural, or legal if performed for therapeutic or medical reasons.

In this paper, a few topics concerning the scientific evidences, such as (I) estimation of time of death by rigor mortis and entomological evidence, (ii) identification of culprit by finger prints, hairs and genetic finger printing/DNA profiling and (iii) the unscrupulous actions of the rapists and abortionists, and (iv) behavioural conduct of criminals, are dealt with.

1) Estimation of the time of death by rigor mortis:

The myofibrils are the contractile elements in muscles and they are made up of Myosin filaments and Actin filaments (Fig: 1). The Actin and Myosin combine to form Actomyosin during muscle contraction. The energy comes from ATP which dissociates into ADP and energy (Fig: 2).

After death the muscle passes through two distinct phases. (a) A state of elasticity which does not change appreciatively. (b) Later a phase of rigor appears (in -elasticity)(Fig: 3).

Although it develops uniformly throughout the body it is usually detectable first in the smaller muscles such as those around the eye and mouth, the jaw and fingers.

The most important practical interest in rigor mortis is in the estimation of the time of death. For this matter, deep rectal temperature is determined and the environmental temperature is measured. The time after death may be determined approximately as the fall in temperature depends on the environment, warm or cold climate (11) (Fig: 4).

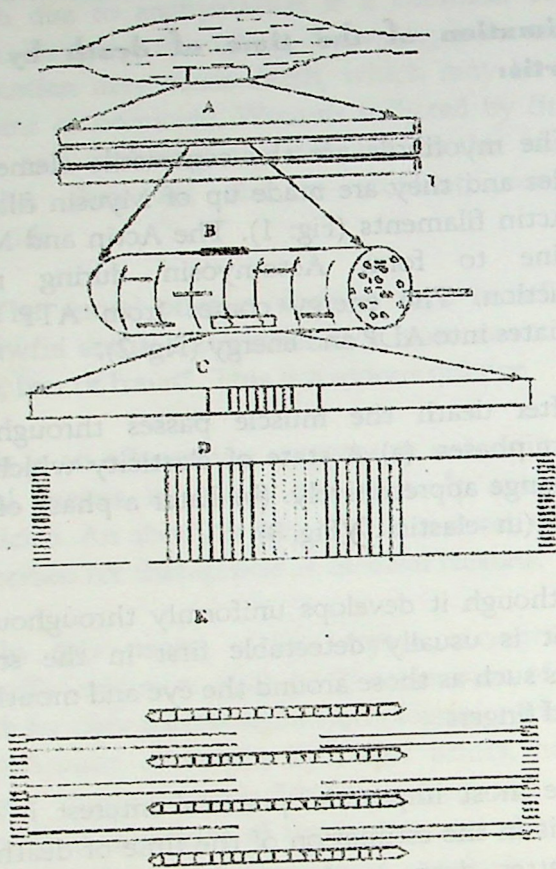


Fig 1: Schematic diagrams of striated muscle

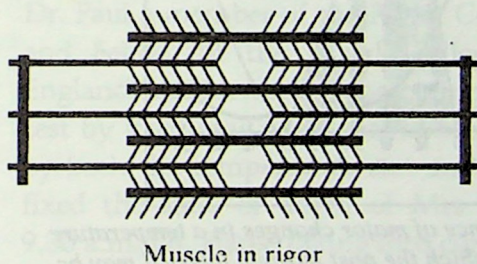
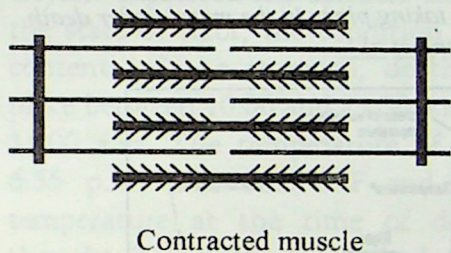
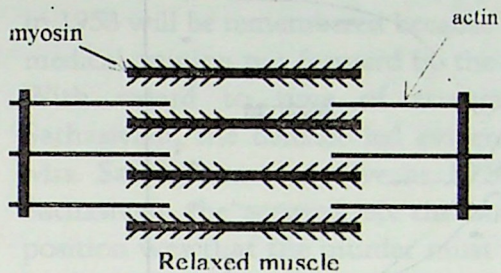


Fig 2: Schematic arrangement of the myosin and actin filaments in the muscle fibre.

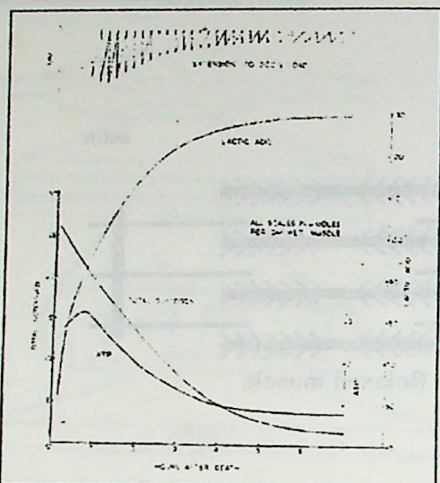


Fig 3: The changes taking place in the muscle after death
(After: Doering et al.)

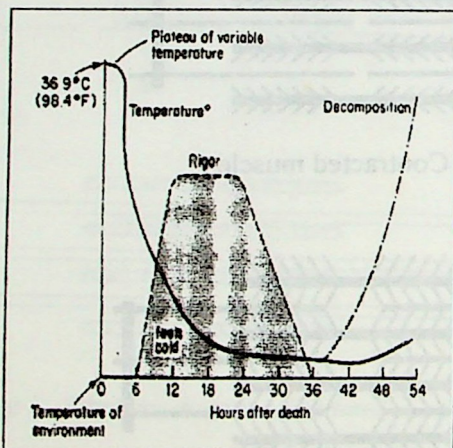


Fig 4: The sequence of major changes in a temperature environment by which the post mortem interval may be approximately estimated. (After: Bernard Knight, 1991)

One of the famous criminal cases of Sri Lanka, Mrs. Sathasivam's murder case, (2) which took place in 1953 will be remembered because of the conflicting medical opinion put forward by the eminent doctors. With regard to time of strangulation of Mrs. Sathasivam, the defence led evidence to prove that Mrs. Sathasivam was alive at 10.30 a.m. after Mr. Sathasivam the accused left the house. The defence position was that the murder must have taken place between 11.00 a.m. and 12.00 noon. Dr. de Saram, Professor of Forensic Medicine at the University of Ceylon expressed his opinion that having regard to the state of rigor, the condition of eye lids and the contents of the stomach, death must have taken place between 10.00 and 11.30 a.m., probably close to 11.00 a.m. The temperature of deceased's body at 6.55 p.m. was 93.3 ° F and fixing the normal temperature at the time of death as 98.4°F, he thought 7 and 1/2 hours had elapsed after death, which would fix the time of death about 11.30 am. Dr. Paul a member of the Royal College of Physicians and Fellow of the Royal College of Surgeons of England, put forwarded the opinion that rigor mortis test by itself was not a satisfactory method and that by both the temperature test and alimentary test he fixed the time of death of Mrs. Sathasivam about 9.30 a.m. Dr. Pieris, taking into consideration that the string hoppers complete digestion in about two hours, agreed with Dr. Paul. Sir Sydney Smith, a distinguished Professor of Forensic Medicine from the

University of Edinburgh placed reliance only on the temperature and rigor test and not on the nature of the contents of the stomach for various reasons. Coupled with the state of rigor, which he thought was accelerated in the case, he was of the opinion that death must have taken place between 11.00 a.m. and 12 noon.

On the totality of evidence, relating to the time of death, the defence counsel could legitimately claim that the prosecution had not proved beyond reasonable doubt that Mrs. Sathasivam was dead at 9.30 a.m.; instead the death should have taken place between 11 a.m. to 12 noon. This is a matter which must have given adequate benefit to the accused and Mr. Sathasivam was acquitted as he has taken up the defence that he left the bungalow at 10.30 in the morning and his wife was alive at that time.

In Pauline De Croose case, (2) it was told that at 2.30 p.m. on 7th February, Pauline and the boy Gota, the son of her boy friend Kirambakanda, were seen together near a well. Nobody has seen Pauline pushing the boy into the well. But Pauline was seen somewhere else between 2.30-3.00 p.m. with the school bag of the boy. However the body was not seen in the well between 6.00-6.30 p.m. on 7th. But the body was discovered in the well at 6.30 a.m. on the following day, 8th. Dr. Buultjens concluded that

the death would have taken place between 8.30 am on 7th and about 8.30 p.m. on 8th.

According to Dr. Chandra Amerasekara, based on his own experience of rigor mortis, the death would have taken place between 12 midnight of 7th and 3.00 a.m. of 8th. However Pauline De Croose was convicted based on circumstantial evidence in that the boy was assaulted on 7th and was put into the well in an unconscious condition late at night.

Entomological evidence of time of death:

Sir Sidney Smith was involved in solving the problem in finding out the culprit in a murder case in the famous Ruxton murder case (6). Among the evidence collected were some maggots, legless larvae that had been feeding on decaying remains. The maggots were taken to Sir Sidney Smith's laboratory at the University of Edinburgh, where their age was determined. Because these larvae must have developed from the eggs laid by flies on the remains, their age indicated the minimum time that could have elapsed since death. Thus the maggots provided a strong clue as to time of the murder.

When housefly ova, larvae or pupae case are found in the corpse, it could give some idea on time of death. The eggs of the housefly are laid with commencement of putrefaction. This is about the

third day. The larva will hatch out in twelve hours at 80 °F and in three days at 50 °F; the larva transforms into pupa in seven to ten days. The pupa subsequently transforms into adult.

By watching the various life stages in the corpse, date of death may be determined. However due consideration should be given for periods of such stages because it varies from place to place.

A woman was missing since December 3, 1971. The larvae of *Protophormia terraenovae*, a fly, was found on the corpse of the woman on December, 29. Based on the temperature prevailing it was concluded that oviposition would have most likely occurred on December 10 or later. Based on this one would say that the woman was dead on December 10 or later.

In Hungary, a ferry captain arrived at his ferry at 18.00 hours one evening in September. A few hours later, the murdered body of a postmaster was found in the ferry. A postmortem examination was carried out the following day at 16.00 hours, when large number of blowfly eggs and larvae were found on the body. This entomological evidence was ignored at the trial, and the captain was sent to prison for life for this murder. Eight years later, however, the case was reopened. It was pointed out that no carrion flies were active in Hungary at 18.00 hours in September. So the eggs must have been laid not on the day when

the captain went to the ferry but much before this date. The captain was acquitted of the murder and released.

A policeman found the body of a newborn child wrapped in linen and infested with mature larvae of *Calliphora vicina*. Experimental rearing of *C. vicina* under similar conditions enabled to establish the oviposition very likely occurred about 20 days earlier and to estimate correctly the time when the body was hidden. This example illustrates the advantage of having local rearing experience with the specific insect in question.

As the body decomposes, different species of insects will be attracted to it at different stages of decomposition. Thus there is a faunal succession. By identifying the species on the corpse at a given time it will be possible to fix the time of death. However the faunal succession varies greatly according to the geographical location, season, weather, surrounding vegetation, altitude and so on.

Entomology, the study of insects is a powerful tool in forensic investigation, but the potentiality is by no means fully exploited. This is because forensic entomology is a young subject and has yet to be wholly incorporated into the field of forensic medicine (10). However entomological evidence can

be used as a corroborating evidence with other evidences.

2) Identification of the culprits:

Finger prints:

Finger print marks (13) may be taken from the place of murder, say on glass, metallic containers, polished furniture etc. There are some technicalities of finger printing, which the experts know well and are undisputable. The finger print of a person is almost unique. The chance of finger print in two persons being identical is about one in sixty four billion. Even the identical twins do not have identical finger prints. Charles Darwin's idea on variation can be quoted here as a true fact.

The pattern of prints comprises, arches, loops, whorls or composites. In addition the loops may open towards the radial or ulna side. By comparing the finger prints of the suspect with the finger prints in the murder scene, finger prints can be used not only to track down the suspect, but also to identify the victims (9).

In addition to finger prints, palms and sole prints are equally identifiable. Research is also being carried on lip crease patterns, ear shape and vein pattern in the dorsal part of the hands, all of which seem to have individual characteristics.

Genetic fingerprinting and DNA profiling:

Genetic finger printing was developed in the University of Leicester by Alec Jeffreys and colleagues. Recent version is called DNA profiling (5) (12).

There are 100,000 genes in the human genome (the genome being the total DNA in a cell). About 95% of DNA is non-coding. About 30-40% of this DNA consist of short sequences of bases which are separated many times. The repeated sequence of base is said to be **Satellite DNA**. Only a small number of repeats of bases are known as **Minisatellites**. Genetic fingerprint is a way of analyzing the lengths of the minisatellites of a given individual.

DNA is extracted from the cells and treated with restriction enzyme which cuts either side of minisatellites. Agarose gel electrophoresis is used to separate the DNA fragments. The technique is described as DNA analysis. The pattern for an individual is characteristic and therefore known as finger print. The radio active DNA probes are used to reveal DNA finger print visible to human eye.

Since the discovery of DNA finger printing, it is a deciding factor in criminal cases to identify the culprit based on the DNA with higher certainty using

the blood, semen, hairs and other biological matters left at the scene of crime, (7) (Fig : 5).

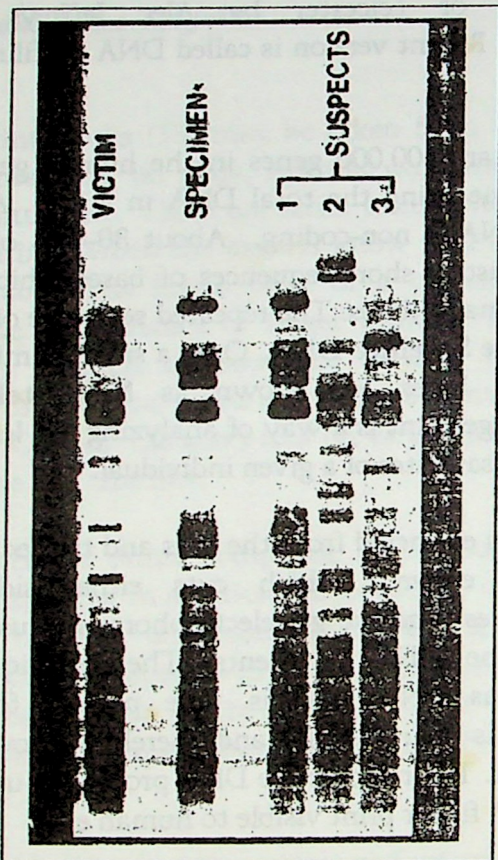


Fig 5: Genetic fingerprint of a victim's blood semen (specimen) and the blood of suspect rapists. (After : Taylor et al. 1997)

DNA finger prints help in deciding paternity too as a forensic tool. DNA finger prints of mother, child and alleged father are compared. One half of the bands in the child comes from the mother and the other half comes from the father. All of the paternal bands in the child DNA finger print must match with the alleged father for positive identification.

Carrying out DNA finger printing is expensive, technically demanding and involves the use of potentially hazardous human tissue. The DNA testing needs to deal with complex scientific technology.

The DNA forensic test should satisfy the following: 1) The underlying scientific theory must be considered valid by the scientific community. 2) The technique itself must be known to be reliable. 3) The technique must be shown to have been properly applied in the particular case.

In USA more than 1,000 criminal cases have been involved on evidence of DNA finger printing, but only in a few dozen cases the DNA evidence was challenged in pre-trial hearing. It is hoped that with appropriate national standards and regulations, forensic laboratories with reliable DNA forensic technique, the criminal justice will be carried out without ambiguity.

Hairs:

Hair is of ectodermal origin, but has its root in the dermis the mesoderm. It may indicate the suspect of a particular crime or victim or connection between the suspect and a victim or between the victim, weapon and suspect (8).

Age, racial, sex identity and to a certain extent presence of a certain poison can be determined by examining the root as well as the shaft of hair. The entire hair complete with its root is necessary for the identification of age, sex and certain poisons, such as arsenic.

The mercury poison in a corpse can be detected by determining the mercury content of house fly emerging from a corpse. A concentration of 0.12-0.15 parts per million of mercury was isolated from houseflies which were developing from a dead body when death was due to mercury poisoning. Unfortunately the insect analysis for mercury content is an entomological work and it will take more years to rely on this analysis.

In one of the sensational and famous criminal cases in Sri Lanka, the victim Adeline Vitharane (4), was becoming an unbearable nuisance to Anandagoda, a school master. The use of his car to run over the neck and body of Adeline Vitharane in

an unconscious state was made several times to get rid of her life. After the crime, he got this car serviced by petrol instead of diesel to avoid any indications of murder, specially the underside of his car. However, he never thought that the blood and blood stains and the tuft of hair in the under side of the car would give enough materials to indicate that his car was used for the crime. The findings of four hairs under the carriage of his car were items of circumstantial evidence against the owner of the car. These four strands were compared with hair taken from the scalp of Adeline Vitharne and found to be similar in texture and pigmentation. This was items of circumstantial evidence against the owner of the car, sufficient to prove to the satisfaction of a reasonable jury that Anandagoda caused the death of Adeline Vitharne by running over her body by his Fiat 1100 car. Anandagoda ultimately paid the extreme penalty by being hanged on 21st June 1962.

In another famous criminal case of Sri Lanka, Dr. Kularatne's poisoning case (2) in which Dr. Kularatne, a medical practitioner from Galle, was accused in assisting to commit the murder of his wife by providing Potassium arsenic from his own dispensary. The stomach and its contents, kidneys, a part of liver and lungs and small intestine of Mrs. Kularatne were examined for arsenic. The examination of hair, hair follicle, fingers were not made. However the presence of arsenic in the

stomach contents of the deceased, improbability of the deceased having obtained arsenic from any other source, and the circumstantial evidence established, went against Dr. Kularatne. But later the court of criminal appeal squashed the conviction, acquitting all the accused involved in this case.

2) Unscrupulous actions of rapists and abortionists:

Rapists:

Rape (11) is the sexual intercourse by a man by force against a woman's will. If a woman has indicated consent it is not a rape, provided that her consent must be free, voluntary and conscious.

It is essential that a woman resists rape as far as possible, thereby marks of violence by man on a struggling woman are possible on any part of the body, specially the private parts. When a woman is overpowered by more than one man, then the marks of evidence are little or not at all. Marks of violence may not be evident if the woman is under the influence of drugs or alcohol or in coma or unconscious or after being given anesthetics.

The evidence of rape comes from local signs of physical violence on man as well as woman on all parts of the body of both. The marks of violence and

resistance depends on the physical condition of the individuals.

Both have to be examined medically. The examination of all the clothes they wore and the place of incident should be made with care. The examination of the accused and the victim should be done with their consent in the presence of witnesses. The whole body with regard to bruise marks and blood stains have to be examined. The private parts of male and female have to be examined for the presence of seminal matter. Spermatozoa may be alive in vagina for about 6 days (Fig: 6). As the spermatozoa are liable to be present in the vagina, the vaginal contents are taken off by glass rod or spatula and examined for living sperms. Presence or absence of blood stains, discharge, redness or inflammation must be distinguished as to whether it is new or old.

Rape on a woman who has not had previous intercourse results in the rupture of the hymen. The broken hymen heals completely in a week, but it never rejoins. Although hymen may have been broken previously due to many other reasons, one must make sure whether the hymen is broken by rape or earlier. In women who had repeated intercourse earlier, the hymen would have completely disappeared and the vaginal orifice is dilated and the mucous membrane is wrinkled and thickened. If a child is raped, little sign of general violence is

expected as the child does not know what is happening. However, the child has to be examined for injury, bleeding and inflammation of the private parts.

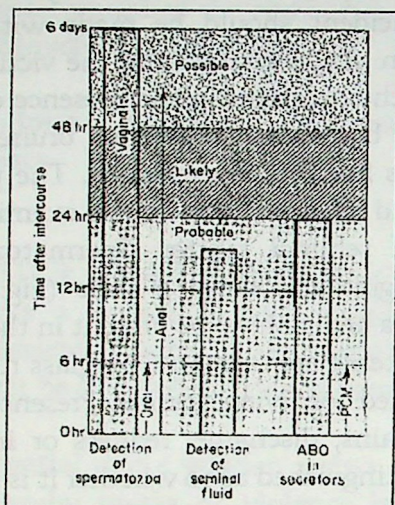


Fig 6: Swab potentials in the living spermatozoa(After: R.L.Williams, 1978. Police Journal)

Examination of accused should be done immediately for any scratches on the private parts, back, chest and the presence of blood stains on the body, genitals or clothes.

The dresses of the parties are examined for marks of struggle, tears, torn off buttons and semen. In light fabrics seminal stains present a greyish-white appearance, looking as irregular spots or map-like

areas. This is scraped off with a razor without damaging the clothes or bed. This is later stained for confirmation. Examination of spermatozoa with electron microscope will give its clear structure or subject it for DNA profiling.

Abortionists:

After fertilization, pregnancy commences (9). Loss of foetus up to 28 weeks is usually called abortion or miscarriage.

Deliberate termination of pregnancy is against the legal provision in this country. However, the law of this country allows termination of pregnancy under certain medical conditions.

There are many illegal methods to perform abortion. It is dangerous to adopt the crude and cruel methods of abortions. These methods are not only dangerous for the mother's life but also the claws of law will not allow her to live peacefully. Such illegal abortion could be done by several methods by abortionists. Drugs of several kinds and various toxins are used to get rid of the unwanted pregnancies. A host of vegetable compounds or chemical poisons or animal extracts has been used for this purpose. Several types of instruments may be forced through into the uterus to make injuries to the foetus, but by mistake it may harm other vital organs

of the mother. General violence such as punching and kicking may injure foetus. Even violent exercises, skipping, jumping, horse riding, bicycle riding may also cause abortion. Chemicals such as Potassium permanganate crystal applied to the upper vagina and cervix would cause chemical burns and death of the foetus. Syringe aspiration, with plastic cannula pushed through the cervix causes expulsion (Fig: 7).

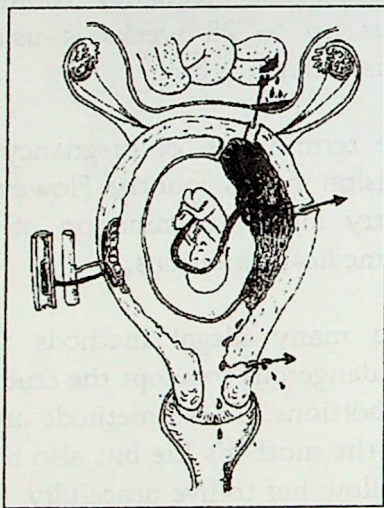


Fig 7: Diagram illustrating the complications of criminal abortion.

Any of the above methods can be dangerous due to use of unsterile instruments and in the hands of people who have no anatomical knowledge.

4) Behavioural conduct of criminals:

The behavioural pattern of the criminals show their weakness which may exhibit as evidence of scientific value against them.

Their motive, preparation, opportunity, and subsequent conduct reveal more evidence of their act.

They are always tense, fearing that their crime would be discovered. They show signs of anxiety and feel that they are constantly watched. They show some unusual conducts which become evidence of their crime.

Every action of theirs is suspicious. They refuse and confuse any question put to them. Some of the criminals take many people into confidence and talk what they have in mind which may go against them in the court.

Some criminals are boastful and divulge voluntarily or involuntarily the part they have played in the crime. The murderers dispose of the murdered body by burrying, burning or dropping into wells, tanks or sea. They think they will be exonerated on the belief that "No body - no murder". In fact, there is no benefit to proceed with the case in the absence of the corpse. Somehow or other the body is exhumed, or a part of body or skull or skeleton is

obtained to proceed with the case to the disappointment of the accused.

In Alfred de Zoysa case (3) all the above matters came as a complicated net work. Once Alfred de Zoysa boasted to his victim "More people like you, greater people than you, have been sent by me to moon". Alfred de Zoysa, Kalu Albert and Willie mama were accused of conspiracy and the murder of P.K.D.Perera and Julius Sandarasagara. The indictment contained 169 witnesses and 274 productions. Ultimately they exhausted all legal remedies and on July 20, 1972 Alfred de Zoysa walked to his death. The following morning Kalu Albert followed him to scaffold. Willie mama was committed to life imprisonment in view of his age - he was 72.

The criminals, without their knowledge, commit some blunders in their act which when discovered results in disaster to themselves. They leave behind their articles which will identify them. Finger prints, blood stain, hairs, saliva, semen, handkerchief, cap.etc. left in the place of crime indicate their part in the foul play.

The criminals are always eager to visit the scene of the crime for curiosity. They come back to the place of crime as a member of the public to find out the progress. It was evident in Adeline Vitharane's

murder case (4) in which Mr. Anandagoda, the murderer visited the scene of the murder within 24 hours. Visit to the scene of crime became strong evidence against him.

Sometimes the person responsible for the murder, may come to the place of murder immediately and indicate involvement of some others as accused. If this person is a respectable man his words will have great value. In late S W R D Bandaranayake's case (1), this was evident. Buddharakkita Thero, who has plotted and planned with others the murder of the Prime minister addressed the nation over the radio on September 27th after the death of the Prime minister on September 26th 1959. He spoke over the radio with feeling and sympathy. The murderers consider that they are more cleverer than anyone else until it is proved that there are cleverer people to deal with their cases.

Quite often the problems crop up among the partners. The evidences by them may differ. In this way each partner may try to save himself. Under such circumstances the culprit is cornered by his own partners. Although the selection of partners depends on trust, sometimes partners exterminate one another.

There is no room for emotion and sympathy in a court of law, which needs hard facts. The facts are

unchallengeable. The courts treat each case with utmost thoroughness and beyond reasonable doubt. For this matter courts need the clear evidence, the scientific evidence "to catch the thief".

Conclusion:

The forensic science has developed to such an extent to say that "you cannot argue with science". The scientific methods give forensic evidence strength to be used in a criminal trial for successful apprehension of the culprit.

Evidence of such scientific nature may be able to trap the culprit with great certainty beyond reasonable doubt. However, all such evidences should be crystal clear in the administration of justice. The scientific evidence should be accurate and unquestionable when presented. Although scientific evidence is the answer for all unsolvable crimes, the evidence should be absolutely accurate and sharp still more.

"Justice should not only be done, but It should be seen to be done"

Therefore, I urge for an establishment of a Faculty of Law in the University of Jaffna for specializing the medico-legal aspects of crimes.

ACKNOWLEDGEMENTS

My sincere thanks are due to Dr. R. Rajendraprasad, Dean, Faculty of Medicine; Dr. C. S. Nachinarkinian, Acting Head, Department of Forensic Medicine and Dr. S. V. Srirajeswaran, Acting JMO, Jaffna Teaching hospital, for their comments and encouragement.

My grateful thanks are due to Miss Abyerami Balasubramaniam and Miss. Nithiagowry Ratnasabapathy for their clerical assistance.

I thank the Faculty of Medicine for giving me an opportunity to deliver this Dr. Arunasalam Sivapathasundaram memorial address.

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He joined the University of Ceylon, Colombo as a Demonstrator in Zoology in 1962. He was appointed as an Assistant Lecturer (Prob.) in Zoology in the University of Ceylon, Peradeniya in 1965, and subsequently as a lecturer in 1970. He was appointed as the founder Professor of Zoology and Head, Department of Zoology in the University of Jaffna, Sri Lanka in 1975. He served as the Dean, Faculty of Science in 1988 - 1991, acting Vice Chancellor for three months in 1988, Acting Dean, Faculty of Science for ten months in 1996 and again he was elected as Dean, Faculty of Science for a period of 1996-1999.

He did his B.Sc. in the University of Ceylon, Colombo (1962), M.Sc. in the University of Hawaii, U.S.A. (1965) and Ph.D. in the University College London (1969). He was a visiting Professor at the University of Wales (1978-1979); Imperial College of Science and Technology London (1986-1987) and British Museum (Natural History) London (1990).

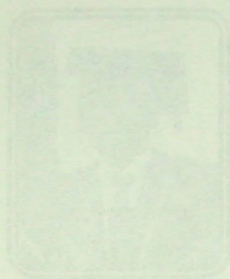
He was a recipient of the Scholarship / Fellowship of East-West Center USA(1963), Commonwealth Universities Association (1978/79), Nuffield Commonwealth (1986 / 87), University of Baroda (1984) and GTZ Germany (1986) and British council (1990). He published several research papers in local and foreign journals.

He was the President, Family Planning Association DAC Jaffna District, President, Consumer's Society of Jaffna District, Deputy District Governor of Lions International 306B, and President of NGO consortium of Jaffna District. Presently he is the President of SLRCS Jaffna Branch, President SLRCS Point Pedro Division and Vice President of SLRCS NHO Colombo. Recently he participated at the International Conference of Federation of Red Cross and Red Crescent Societies, and visited ICRC, IFRC, UN, ILO, WHO in Geneva (Switzerland).

16.11.1999.

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