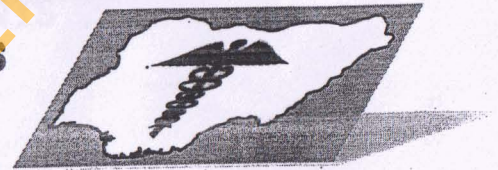


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**TRADITIONAL AND MODERN
HEALTH SYSTEMS
IN NIGERIA**



Edited by
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12

TABLE OF CONTENTS

List of Tables and Illustrations	xi
Acknowledgments	xv
Introduction – <i>Toyin Falola and Matthew M. Heaton</i>	1
PART A. RESEARCH AND ACTIVISM	
1. The Redeemed AIDS Programme Action Committee <i>Olufunke Adeboye</i>	13
2. The Catholic Church, Social Justice Teachings and Healthcare Delivery in Nigeria <i>Anthony Attah Agbali</i>	37
3. Theater for HIV/AIDS Counseling Education among Young People in Abuja <i>Barth O.Y. Oshionebo</i>	91
4. Health Literacy and Instructional Strategies: A Study among Adult Learners in Oyo State <i>Elizabeth Oluwakemi Augustus</i>	105
5. A Review of the Medicinal Values of <i>Momordica Charantia</i> (Bitter Melon) in the Management of Illnesses <i>R.I. Bakare, O.A. Magbagbeola and A.I. Akinwande</i>	121
6. Comparative Metabolic and Histopathological Effects of <i>Croton Penduliflorus</i> (A Herbal Abortifacient) and Depo Provera in Non-Pregnant and Pregnant Dutch White Rabbits <i>O.S. Odesanmi, G.M. Saibu, S.A. Ojokuku, A.T. Faremi, R.I. Bakare, and A.F. Banjo</i>	131
7. The Rockefeller Brothers Fund and the Modernization of the Pharmaceutical Industry in Nigeria <i>Hakeem I. Tijani</i>	147

PART B. PERCEPTIONS AND REPRESENTATIONS

8. The Press, Politics and Historical Memory: The Influenza Pandemics of 1918 and 1957 in Lagos Newspapers 161
Matthew M. Heaton
9. Yoruba Traditional Family Structure and HIV/AIDS Patients 179
Joshua Aransiola
10. Songs and Politics of the Lunatic: Okekwe's Foray into the Malaise of a Nation 193
Ijeoma C. Nwajiaku
11. Illness: Environmental and Political Injustice in Tess Onwueme's *Then She Said It!* 205
Juliette Bartlett-Pack
12. Poverty and Illness in Nigeria: A Parable of Conjoined Twins 231
M.A.O. Aluko
13. The Medico-Spiritual and Historical Origin of Malaria Disease 247
Sunday Olusola Aluko-Arowolo
14. Notes on the Clinical Pharmacy Practice in a Hospital Setting 257
Oladapo Augustus

PART C. BALANCING TRADITIONAL AND MODERN MEDICAL SYSTEMS

15. Indigenous Medical and Healthcare Systems and the Challenges of Development in Africa 269
Ibrahim Waziri Abubakar
16. African Health on Sale: Marketing Strategies in the Practice of Traditional Medicine in Southwestern Nigeria 287
Akintúndé Akínýemí
17. Ritualizing Communal Wellbeing: The Igala Anthropology of Healthcare and Contemporary Nigerian Healthcare Delivery 305
Anthony Attah Agbali
18. The Traditional Healing System among the Yoruba 365
Ibìgbolade Simon Aderibigbe
19. Health Human Capital Condition: An Analysis of the Determinants in Nigeria 381
A.A. Adebayo and S.I. Oladeji
20. Illness: Causes and their Meanings among the Yoruba 399
M.A.O. Aluko

21. Cassava Processing and Its Related Health Hazards 411
B.O. Akintunde and T.Y. Tunde-Akintunde
 22. Combatting the Guineaworm Scourge in Nigeria: An Engineering Approach 417
A.O. Coker and F.A. Olutoge
 23. Crime Detection Methods and Health Implications: Forensic Science versus the Traditional African Legal System 429
Oluyemisi Bamgbose
- Contributors' Biographies 451
Index 459

CRIME DETECTION METHODS AND HEALTH IMPLICATIONS: FORENSIC SCIENCE VERSUS THE TRADITIONAL AFRICAN LEGAL SYSTEM

Oluyemisi Bamgbose

INTRODUCTION

Between a crime commission and its prosecution in a criminal court lies a process of investigation, detection and case preparation. Crime detection is the establishment of the genuine truth. The majority of crime investigations are undertaken by the police. The purpose of any judicial enquiry is to ascertain the truth of the matter in dispute so that the applicable law or custom can be applied. In criminal cases, the innocent should be cleared and the guilty convicted. It is a cardinal principle of judicial trial that the court's judgment on an issue shall be based on direct oral evidence of competent and reliable witnesses who were subjected to cross-examination by the opposing party. A competent witness includes a person qualified to testify on a fact by reason of having acquired the knowledge of that fact through the perception of one of their senses. Qualified and registered medical or forensic experts are expert witnesses on medical or forensic matters that may arise in modern judicial trials. Persons that are knowledgeable in the traditions of the people are regarded as experts and are involved in traditional trials. In certain cases, especially where it relates to homicide, sexual assault and stealing, legal knowledge alone may be insufficient for the administration of justice and must be supplemented by other methods. The methods used must be lawful, reliable and morally impeccable. The effective investigation and detection of a crime must use the many varied resources that are available.

In contemporary times, apart from the psychological disciplines and police detection, another discipline that could be used in the courts is forensic science. Forensic science has helped prosecutors to convince jurors of the guilt of defendants. At this time, it is believed that a successful detection of crime largely depends on a full and efficient use of natural and technical sciences. Criminology is the science of crime detection that provides efficient crime detection techniques. The present stage of crime detection has evolved a

coherent system of scientific knowledge that is characterized by a high degree of scientific and technical achievement. It is in the light of this that both the medical profession and forensic scientists should appreciate that they are partners with the legal profession in the administration of justice.

Under the traditional African legal system, specifically since men began to live in groups, there arose the need to establish rules to regulate conduct and set out sanctions for breaches of such rules. Hence, before the advent of the colonial rulers in the African states, there existed the traditional method of administration of justice. For example, in the traditional criminal justice system, particularly investigation and detection of crime, the use of supernatural powers and other traditional methods played not only a prominent role but also a critical one. People believed in the efficacy of such powers and other traditional methods.

The methods adopted under the traditional African legal system and in forensic science have been discovered to have health implications. Hence this paper discusses and examines various methods under the African traditional legal system and in forensic science especially as they apply to various cases of homicide, sexual assault and stealing.

CRIME DETECTION UNDER THE TRADITIONAL AFRICAN LEGAL SYSTEM

In the maintenance of law and order in the traditional African legal system, the use of superstitions, supernatural powers and extra-judicial devices played a crucial role. People believed, and they still do, in the efficacy of such powers, beliefs, myths and traditional methods of crime detection. The strong belief in deities and the ubiquitous spirit of their ancestors was a compelling force in ensuring due regard for law and for detection of crime.

Laws have a quality of authoritativeness, absolutism and sacredness. They seek to justify, explain or validate a belief, and, in many local communities, they serve as a source of social control. Black Law Dictionary defines laws "as that which is laid down, ordained or established". It is further defined as a rule or method according to which phenomena or actions coexist or follow each other.¹

Under the traditional African legal system, the use of extra-judicial process is a common, approved and accepted method for the administration of justice, especially in crime detection. Extra-judicial process can be described as a method considered to be above and beyond institutional legal procedure. There are certain institutions, categorized as social, secret or religious, considered necessary in the African judicial system.² The extra-judicial

process takes several forms and is carried out through the agencies of secret societies, ancestral and religious societies.

Secret societies are so named because of the fact that their membership is not made known to the public. The proceedings are kept secret, objectives are not made public and members are under oath of secrecy as a matter of obligation.³ There is much controversy over the use of the word "secret". Some societies have argued against the use of the word. Many of such societies exist in Africa. Examples include the *Ogboni* and *Oro* in Yorubaland in Nigeria the *Egbo* society in old Calabar in Nigeria, the *Poro* and *Sande* in Sierra Leone, and the *Mivetyi* and *Nda* in Southern Guinea. In communities in Africa where these societies are recognized, they help in exercising social control, especially in the absence of stronger political ties of a defined chieftainship.

Superhuman elements are also consulted to influence and possibly reach out to justice in traditional societies. According to Olaoba, these methods veer away from openly tested and humanly ascertainable options.⁴ Where a crime cannot be detected by human wisdom and integrity it becomes inevitably necessary to look for other means of adjudication. Though the method is humanly induced and projected, it is done on the authority of supernatural intervention that cannot be explained. The following are the few methods often adopted under the traditional African legal system in detecting crime:

1. Influence of supernatural powers; superstitions and secret societies;
2. Trial by ordeal;
3. Oath taking;
4. Divination through oracle.

Chambers encyclopedia defines superstition as a term used to describe a credulous attitude towards the supernatural in relation to beliefs and practices surviving from a primitive state of culture.⁵ The contradictory and often indeterminate character of these beliefs show that they are survivors of earlier cult practices which have lingered on after they have lost their original meaning and purpose in society. They tend to recur under abnormal circumstances, in times of war, or other occasions of great provocation such as in crime detection. According to Ojo, only a small minority in a modern community treats superstitions seriously.⁶ Religious beliefs are intractably bound with attitudes and behavior towards social transgression.

These beliefs act as a strong deterrent to crime and are very often useful in crime detection in traditional societies. Crime detection is seen as a social responsibility that may be achieved by discussion or by violent means. Cases do occur in traditional societies where the most earnest and judicious effort to

detect the commission of a crime fails; hence, appeal must be made to some spiritual arbiter to reveal the offender. In Papua New Guinea, the belief in sorcery is widespread, as it is in many pre-scientific societies. In the absence of technological explanation for events or modern techniques to detect crimes, people seek the explanation in gods, spirits and sorcerers.⁷ The method is also used where the crime to be detected in the traditional society is by nature cultic, such as in a charge of witchcraft. It is apt to state that the belief in supernatural powers in crime cuts across global boundaries.⁸ Gunther buttresses this fact when he states that the belief in magic is universal throughout black Africa. He further states:

We in the United States and Great Britain should think twice before we dismiss the primitive belief of Africans as balderdash or laugh at their occult custom... But we use fetish like foxtail on automobiles. Do you in Brooklyn or Bognor Regis like to walk under ladders, sit down thirteen at dinner, or light three cigarettes from the same match: Do you ever knock on wood?⁹

Ordeal is a severe test of character and evidence. This is often enforced where none of the suspects to a crime is prepared to confess to his or her guilt. Equally when divination cannot detect who among the suspects is the offender, the suspects may be subjected to a form of ordeal considered appropriate in the circumstances.

Trial by ordeal is used mostly in cases of theft and murder: According to Elias, in cases of ordeal, guilt is based on the presumption of innocence of the person or persons subjected to it. He, however, points out that the element of chance which trial by ordeal involves is too great to make it judicially desirable and socially just.¹⁰ However, in the absence of a developed alternative technique for detecting crime, nearly all human societies have at one stage or another of their legal evolution employed the ordeal for the judicial determination of guilt. Elias further claimed that trial by ordeal was used in Italy until it was stopped in 1819.¹¹ Enforcement of a trial by ordeal may be in the form of a concoction specially prepared for the suspects to drink; for example the extracted juice from sasswood or a burnt powder mixed with water. It is believed that if the suspect is guilty, he or she will become sick and may subsequently die. Another form of ordeal is the heating of a knife, or any metal, in fire and instructing the suspects to pick up the object with bare hands. The belief is that a guilty person will suffer severe burns. Furthermore, suspects to a crime may be taken to a flowing river and asked to step in. It is believed that any person who drowns is guilty of the crime alleged. In traditional Yorubaland, in Nigeria, the *edan*, which is the symbol of authority of the secret cult of *ogboni* is placed in a bowl of water with a little earth and

given to the suspects to drink in a trial by ordeal. It is confidently believed that the guilty one will die within two days.

Among the Tiv people, a group in the Middle-Belt North of Nigeria, it is said that in the 1930s it was a practice during trial by ordeal to administer the sasswood to a chicken produced by the suspects. If the chicken died, the suspect that brought the chicken was said to be guilty of the crime. The next stage of the ordeal was the administration of the sasswood mixture to the suspect. It was believed that a suspect who vomited the poison was innocent, while a person who died after drinking it was guilty. The trial was carried out in a place called the *ijir* with all the elders present. According to Downes, during an infestation among the Tiv people suspected to be the act of witches, the men in the village were alleged to have said, "If the white men were not here they would pull all the suspected persons the ordeal of sasswood 'gba kor' and the matter will be settled."¹²

This practice has been stamped out among the Tiv. Among the Bantu Tiriki people of Western Kenya and the Kpelle of Liberia, trial by ordeal was a traditional method of crime detection that has also now been outlawed.¹³ Olaoba, however, states that it is not only the drinking of concoctions that is employed. In research carried out in a town in the southwestern part of Nigeria, he said the simple act of sprinkling powdery substance on the ground where the disputants are standing may produce an instant reaction, such as dizziness, experienced by the guilty party. He also described a method among the people where the complainant and defendants are made to climb a hill sprinkled with some substance. It was expected that the guilty person would not make it to the top of the hill.¹⁴

However archaic the trial by ordeal may be, it is not the exclusive invention of African societies, nor is it peculiar to Africans. According to Elias, a modern form of ordeal is found in the United States with the use of the truth serums to extort confession in criminal investigation. A report by Yale University said some people under the influence of the drugs in the truth serum were able to confess to crime they did not commit, while others were able to cover up their guilt with ingenious lies.¹⁵

Oath swearing is a common judicial method used not only under the traditional African legal system, but also used in the modern legal system. Ilesanmi defines oath as a religious normal and psychological enforcement of an act over an agreed situation or a confirmation of the truth by naming something held sacred, a statement of promise confirmed by an appeal to a sacred higher being to enforce the attached sanction.¹⁶

Oath taking is used in the determination of guilt at a time when evidence seems apparently contradictory. Under the traditional African system, oath

taking is swearing to the traditional deities whom the adherents believe will wreck vengeance on a false swearer. Under the modern judicial system, oath taking is carried out by the use of the Holy Bible or Koran for Christians and Moslems, respectively. Individuals who do not practice either of these two religions are made to affirm to the truth of the evidence to be given.

According to Bascom, oath taking induces a guilty person to confess to a crime; as such a person is made to swear by any of the deities of the community that if he or she is not telling the truth then an evil should befall him or her.¹⁷ In the same vein, Adelola believes that oath taking helps to distill truth from lies in detecting crime.¹⁸

Oath taking is carried out in religious sanctuaries. These could be traditional shrines or places of traditional worship, where it is believed that calamity will befall a person who swears falsely. Such calamities include strange sicknesses or death. Under the Gurege traditional system in East Africa, where there is insufficient evidence to support the plaintiff's charge, the plaintiff can issue a challenge to the defendant to swear to a ritual oath of innocence.¹⁹

In crime detection, where it becomes difficult using human wisdom to detect the truth in a case, it is common under the traditional system to appeal to some spiritual arbiter. Most commonly, an oracle or diviner is consulted. It is believed that consultation with the oracle is a way of reaching the unknown realm by asking the deity who is deemed to have the ability of discernment and future telling. The diviners are the ones that consult the deities, and it is the belief of the people that the diviners can interpret the minds of these deities. The diviners are said to be men of proven integrity who have a sense of justice and fair play. According to Olaoba, such divination could be used to detect a crime. He, however, states that the predictions of diviners no longer hold sway in present day society, as it is difficult to come by honest diviners (some are alleged to be neck deep in corruption). This has cast doubt on the genuineness of this traditional way of detecting crime. This method, unlike oath taking, is not recognized in contemporary law courts.²⁰

PRESENT STATUS OF TRADITIONAL CRIME DETECTION METHODS

With the introduction of British law in parts of Africa came also the police and scientists whose functions included crime detection using modern methods. Steady encroachment on traditional societies by missionaries brought about the decline in traditional ceremonies, which constitute the heart of native belief. The decline in traditional methods of crime detection is also associated with the advent of British law, the introduction of formal

British education and, finally, the introduction of Christianity completed the process of degeneration. These Webster sums up:

The man who knew how to sacrifice to the gods became a Christian, the sacred precincts were explored, bull roarer became the play thing of boys and the old man sat and wept over the profanation and their loss of power and privileges.²¹

This fact is buttressed by Osadolor who said, "the efficacy of a myth recedes upon the advance of knowledge."²²

In recent times, there has been a demystification of traditional practices. This is because practices or actions hitherto considered an abomination are taking place in traditional shrines and religious groves. These places, once considered sacred and impenetrable by non-adherents, are no longer regarded as such. An example of such recent action is the invasion of Okija shrine in the eastern part of Nigeria in August 2004. Following a tip off of "shocking" activities at the shrine, law enforcement agents in Nigeria invaded the shrine, which for centuries no one dared enter with shoes or slippers. According to reports, the Okija shrine on 4 August 2004 hosted a hundred pairs of shoes, and it was reported that it would receive more thereafter. The old myth associated with the powerful deity known as *Ogunwunu* from prehistoric times was broken. During the invasion, the natives were alleged to have exclaimed, "were the gods asleep when the invasion took place?"²³ Olaoba's assertion about the level of corruption in these institutions reechoed during the Okija shrine invasion. The deity of the shrine was acclaimed to possess strange powers to identify robbers, detect stolen goods, proclaim a person guilty and kill anybody adjudged guilty in any dispute. The police, however, claimed that all these statements were a deceit by a group of persons to dispossess people of their goods and money. They claimed that poisoned concoctions were used on persons to be killed. The assertion by the police was as a result of the statement made by the ninety-five year old chief priest of the shrine. He said that "every member of the sanctum lived in opulence; mansions; drove flashy cars and owned choice property in heavenly locations around the country". He added that the corpse of any person who died as a result of the oath in the shrine must be returned to the shrine for disposal with "a cow, goat, rams, cock and a reasonable amount of cash running into thousands of Naira in appeasing the gods". He further stated that "the entire property of such a person including cars, household items, and wearing apparel" must be brought to the shrine and all these things, called "will", are executed by a priest of higher status.²⁴

Despite the fact that colonialism has eroded much of these traditional methods of crime detection and its effects, there are some local communities

in Africa that still adopt such methods in the absence of any modern legal system. Among the Afrikpo Ibo of eastern Nigeria, although sorcerers and diviners are not politically active, and supernatural sanctions are not imposed, the force of the supernatural is still seen. Oath swearing and recourse to oracles are adopted where legal means fail.²⁵

How the traditional methods of crime detection work cannot be scientifically explained, while the medical implications are also unknown. Victims who die in the process are regarded as evil and their bodies are taken away by the traditional priests and thrown into the forest. In such traditional societies, there is no opportunity to know the cause of death, nor is there any facility to determine the cause of death. The operation of such a method, according to Egbokhare, can only be left to scientific enquiry.²⁶ It will therefore continue to be a mystery.

FORENSIC SCIENCE, LAW AND CRIME DETECTION

Forensic science plays an important role in the development of crime detection tactics and in the improvement of tactical methods used in crime investigation proceedings. Legal knowledge alone is deficient for the administration of justice. This must be supplemented by medical knowledge. Members of the medical profession should appreciate that they are essential partners with the legal profession in the administration of justice. According to Justice Obi-Okoye, the law has frequent need of medical and scientific knowledge both in pursuing its enquires and in preparing and presenting evidence in court.²⁷ Medico-legal matters should not be regarded as an unwelcome or an unnecessary intrusion on the ordinary duties of medical science.

Prior to the end of the 17th century, there was little or no criminal investigation carried out in the western world. It was considered unnecessary so long as a culprit was arrested. The need arose towards the end of the 17th century when a number of people had begun to see injustice inherent in the witch hunting system of solving crime. This paved way for the growth of forensic science as a more effective way of solving crime.²⁸

Forensic science and scientific evidence are based on accepted laws or theories that have been proved beyond any reasonable doubt by making use of standardized equipment or experiences that could be accurately repeated when the same procedure followed which is summarily defined. Forensic science however, means the science of law. The term "forensic" derives from the Latin word *forensis*, which means to debate or to argue. Furthermore, it is the application of science to those criminal laws that are enforced by the police agency in a criminal justice system.²⁹ It is also the use of scientific practices within the criminal and legal process.³⁰ Webster's defines forensics as "the study and application of scientific fact and technique to legal problems".³¹ In

the same vein, it is a science applied in the interest of justice. According to Black, the term is used in relation to law courts and courts of justice.³²

The aim of forensic science is to enable a court of law to arrive at a proper conclusion on a contested question affecting life and property. It provides an alternative to confession evidence and, arguably, it is more reliable.³³ Its function is also to assist the court to determine whether or not a person is guilty of the crime with which he is charged. Forensic science, therefore, seeks physical evidence by scientific investigation of materials associated with crime and converts suspicion into a reasonable certainty of either guilt or innocence.³⁴

It is interesting to know that there existed evidence of forensic science in the Roman Empire. It is said that a physician examined Julius Caesar, who was assassinated in 44 B.C, and concluded that of the thirty-two knife stabs received, only one was actually fatal.³⁵ Polsky stated that the Justinian Code, which is a legal document dating as far back as AD 529, provides for the opinion of medical experts on a number of legal problems, such as rape, murder and poisoning.³⁶

It is suggested that modern forensic science developed in Germany. In the early German Caroline Code, published by emperor Charles V, it was laid out for the first time that expert medical/scientific testimony must be obtained for the guidance of the judge in cases of poisoning, murder and rape.³⁷ In the United Kingdom, the establishment in 1991 of the Forensic Science Service (FSS), an agency in the Home Office, shows the commitment of the legal system to forensic science. The objective of the FSS is to serve in the administration of justice mainly by offering scientific support in the investigation of crime and provision of expert evidence in court. In Great Britain, the FSS is the largest provider of forensic science to the United Kingdom forces. The agency enjoys a high reputation for integrity, quality of work and for its research and development program. It also recovers its cost by direct charging. In Britain, since 1991, the police have had to pay a sum to the FSS every time they send an item of evidence to it for investigation.

In the United States, forensic science derived much of its early inspiration from Britain, and, over time, has acquired an aura of infallibility.³⁸ Judge Joseph Harris of Albany, New York, after sentencing a defendant in a murder case, hinged the conviction on forensic evidence. According to him, "forensic science is the single greatest advance in the search for truth since the advent of cross examination."³⁹

The development of forensic science in Nigeria is still very primitive and still in its infancy. There is little or no instruction or knowledge by the police on forensic science, and there is little systematic or formal instruction on the subject in the institutions of higher learning. Presently, however, there is only

one forensic laboratory based in Lagos. The lack of development of forensic science in Nigeria has been a setback for the legal system. In Nigeria today, over ninety percent of crimes committed, and for which conviction is secured, are solved through confession. This is due to the very slow development or lack of interest in the application of science and technology in criminal investigation. The effect is that due to lack of conclusive proof criminal cases that could have been judiciously handled have not been. This present state of underdevelopment of forensic science in legal matters in particular has been bemoaned by Ehikhamenor, who has said that with such a facility in Nigeria, the identity of burn victims could be established.⁴⁰

The development of forensic science has come a long way from the times of primitive man. According to Odepe, there seems to be no end in sight in the continuing discovery of science's gift to law.⁴¹ The progress of science and technology extends the possibility of forensic science and brings to life new types of such examination. There are several types of forensic services. The type needed depends on the object to be examined and the type of issue to be solved. I will now discuss some of those relevant to the detection of homicide, rape and theft.

According to Edmond Locard, every contact leaves a trace. The identification of this trace provides evidence of contact. Such a trace left behind at a scene of crime can be regarded as exhibit for forensic examination.⁴² The effective use of technical means with natural science increases the chances of detecting and examining evidence, making it possible to expose dangerous criminals, as well as discover real evidence that cannot be found by other means. In crime detection, exhibits are important. An exhibit is a document or anything produced for the inspection of the court or shown to a witness giving evidence. The report of a forensic examination is an exhibit. The cooperation between the investigator and the scientist sometimes arises before a case gets to court, especially where there is an urgent need to examine the scene of a crime. It is not in all cases that forensic examination is necessary to detect a crime. According to Blakey, a police chief in the United Kingdom, the whole thrust of crime detection is more, not less, reliance on intelligence work, surveillance and forensic science, all suitably integrated.⁴³

Forensic radiology is fully exploited in the industrialized nations, especially the United States. This is not the case in developing countries where forensic science is still generally rudimentary. The role of radiology to crime detection is very crucial, and it is necessary to appreciate it both within the existing facilities and for planning the development of forensic practices in developing countries. In Great Britain, diagnostic radiographs were first admitted as evidence in 1895, and one year later in America, in the case of

Smith vs Grant.⁴⁴ Conventional radiographs are not only admissible evidence in crime detection but useful in forming an opinion in the law court. Law at times requires radiographs, which are impressive visual evidence, in order to demonstrate the nature and extent of injury at the time of trial. In recent times, newer techniques like the Computerized Tomography (CT) have been introduced.

The indication for radiology in forensic science is for the diagnosis of injuries or the determination of nature and extent of injury and localization and determination of number, sizes, and shapes of foreign bodies, such as pellets and metallic particles, in cases of shooting or poisoning. Identification is one of the most common indications of radiology in forensic science. For example, this form of forensic examination is important for age and sex determination where autopsy is not possible or of limited value in a decomposed body, or in severe cases of poisoning.⁴⁵

Identification is often made by means of fingerprints. At a scene of crime, finger or palm prints may be discovered. An expert in forensic science compares the finger or palm prints with those of the defendant. It may be discovered that having compared the two sets of prints, the fingerprints at the scene of the crime were made by the defendant. Such evidence is usually a convincing proof of identity in crime detection.⁴⁶ The analysis of fingerprints gives a perfect theoretical accuracy because no two fingerprints are identical.⁴⁷ In the entire history of fingerprint investigation, no one has been able to successfully change the uniqueness and individuality of fingerprints. It has been shown statistically that the likelihood of two different people having identical fingerprints is one in a billion.⁴⁸ Fingerprints remain an undeniable means of identification. Today the individual nature of the fingerprint and its absolute reliability as a means of identification are unquestionable.

Usually in a case of burglary, where there is no other evidence of identity, as is often the case, the evidence of fingerprints may be sufficient to convict an accused person. In Castleton's⁴⁹ and Bacon's⁵⁰ cases, the Courts of Appeal in Britain dismissed the appeals made by the appellants on the ground that identity was established by fingerprint alone. However, it should be noted that the fact that the fingerprints at the scene of crime are those of the accused does not mean the accused committed the crime. The case of R v Court is illustrative of this fact.⁵¹ The accused was convicted of receiving a stolen motorcar. His fingerprint was found on the rearview mirror of the car. The Court of Criminal Appeal held that this fact was insufficient evidence. The court held that at best it may be sufficient evidence of taking a car without consent or that he was carried in it.

Crime may be detected by the use of DNA profiling. This is a development in science that is very useful in the investigation of homicide and sexual offences. This is the analysis of the material of which chromosomes are made. DNA is used to identify people through their distinctive gene pattern, also called genotype features. It is the basic component of all chromosomes and is the same for all the cells in a person's body, including skin, blood and semen. In the American case of Tommy Lee Andrew, there was conclusive proof that the defendant committed the offence because there was scientific proof that DNA of semen found on the victim matched that of Andrews.⁵² DNA techniques make positive identification virtually certain. The evidence through this technique has a very high probative value. Blood or bloodstains found at a scene of a crime, or semen found on a rape victim, or other biological specimens, such as a hair with its root, can be shown to belong to a particular individual.

The use of DNA profiling has been hampered by the fact that not all laboratories are equipped to perform DNA analysis. In addition, because of the cost, many detectives and prosecutors do not make full use of the method. As in most research techniques, doubts have been expressed about the use of DNA profiling. In the case of *R vs Gorden* the court held that it did not doubt the validity and value of DNA evidence, but the effect of the evidence. In this case, the court allowed additional evidence and ordered the retrial of the case. Similarly in *R vs Deen*, Lord Taylor warned of the danger that may occur in relation to DNA evidence.⁵³ In the use of DNA results, the courts have warned that experts should not usurp the function of the court by giving an opinion as to whether it was the accused that committed the crime or not. In *Doheny v Adams*, the court held that all the scientist should do is to give evidence of the match in the DNA between the crime stain and the defendant.

In spite of the doubts expressed, many courts in advanced countries accept DNA evidence. In the United States, since 1989, DNA testing has aided in more than 20,000 convictions, particularly in sexual assaults.⁵⁴ At the same time, DNA evidence has also been responsible for the release from prison of an increasing number of persons after testing has shown that they could not have committed the crime for which they were imprisoned.⁵⁵ DNA is still considered to be the greatest forensic advance since fingerprinting.⁵⁶ Complex criminal cases that had spanned over a long period of time stand the chance of solution with DNA. The rape of a fourteen year old in 1981 was solved in 1999 with the help of preserved samples collected from the victim at the time of commission of the assault. In 1999 it was matched with that of the accused, who had been arrested for another crime.⁵⁷

The discussion above is not exhaustive. Other forms of forensic examination carried out in homicide and rape cases are forensic toxicology, which

investigates detection of poison, and forensic serology, which studies body fluids such as blood, semen and saliva. Post mortem examination, wherever it is possible, must be associated with laboratory investigation. The issue of post mortem examination has some relevance to forensic science. For example, a pathologist can only return a verdict of poisoning if toxicological confirmation has been obtained from a reliable forensic laboratory. A final post mortem report is made when all the laboratory investigation and tests are completed and the results released.⁵⁸

USE OF FORENSIC SCIENCE REPORTS IN CRIME DETECTION.

Forensic examination is carried out by an expert knowledgeable in that particular aspect. The function of the expert is to assist the court in matters that the court does not consider itself an expert. The report issued after the forensic examination is evidence in court. It is a rule of the law of evidence that all evidence may be given orally before the court in oath or affirmation. The report of the forensic examination is documentary evidence and the maker must tender it in court. The only exception is where the maker, as in this instance, the expert, is dead, unfit by reason of mental or bodily condition or cannot reasonably be found. With this rule in place, the maker of the report will be physically present in court, where his demeanor will be observed by the judge to ascertain whether he is telling the truth or not, while the expert can be cross examined on the content of the report.

The forensic examination report may corroborate the real evidence that is tendered in court. The real evidence may be in the form of a bloodstained dress tendered as an exhibit in court. The report of the examination of the bloodstain or fluid found on the clothing together with the stained clothing will assist the court in its judgment as to whether the accused committed the crime or not. The forensic expert must, therefore, express a genuine and honest opinion based on the examination carried out. To express an opinion in favour of a particular party where such opinion is not honestly held by the expert is "to prostitute science and to act fraudulently".⁵⁹

Lord Campbell, in *Tracey Peerage's* case, stated that the opinion of an expert on its own without the result of a forensic examination is viewed with suspicion. The Learned Judge said that there is the likelihood that such experts come with a bias on their mind to support the cause in which they are embarked.⁶⁰ In the Nigerian case of *Adebayo v Adebayo*, the above view was restated by Judge Taylor.⁶¹ There were two conflicting reports in the evidence of two medical experts on the same issue. The judge then said, "I wonder how the evidence of two medical experts could vary so grossly on a matter within the competence of a lay man". The court in the case placed little weight on the evidence of the two experts.

The court is not under any obligation to accept the opinion expressed in the report where there is other cogent and compelling evidence to contradict the report. In the same vein, where the report supports any evidence on the ground, the report strengthens that piece of evidence. In a controversial case in Nigeria in October 2004, the autopsy result by a consultant pathologist put to rest the controversy on how a man met his ultimate death on October 12, 2004. The initial statement from the investigation claimed that the victim died as a result of an auto crash. However, bullet holes were found on the car at the scene of the alleged accident, as well as the body of the victim.⁶² Where there is conflict in the opinion of two or more experts on the same issue, the court may reject one or the other of the opinions. It should, however, be noted that if the opinion in the report is not contradictory with any other evidence and is unchallenged, the court must accept it. The courts have advised that in the use of forensic reports, experts should avoid highly technical terms, except in cases where such terms cannot be expressed in the layman's language.

TRADITIONAL AFRICAN METHODS VERSUS FORENSIC SCIENCE

The tussle between the use of traditional African methods and forensic science for the purpose of detecting crime will continue for some time to come. The mystified nature of the traditional methods, their acceptance and sacredness, define their uniqueness in societies where they are adopted. The infallibility and reliability of some forensic methods have endeared forensic science to the heart of investigators and judicial officers.

The traditional and scientific methods are carried out in designated places. Forensic examinations are carried out in scientific laboratories while the scene of crime, the market places, shrines and religious sanctuaries are places where the traditional practices take place. Egbokhare has stated that in drawing parallel lines between the two methods, the same result is achieved using different instruments. He said the scientist uses gadgets while the traditional method uses organics and verbal interplay. The handlings of the processes are by persons acknowledged to be "experts", either as scientists on one hand or priests and diviners on the other. Non-experts, whether in the traditional or scientific setting are not qualified to handle these issues.

There is no doubt that the traditional African methods of crime detection have been adopted and practiced for several centuries and passed down through many generations. Many families have evidently inherited the use as part of the legacy bequeathed to them by their fathers and their forefathers. There is a strong belief in its efficacy. Forensic science, on the other hand, is based on accepted laws or modern theories that have been proved beyond any

reasonable doubt by making use of standardized equipment with results that could be accurately repeated when the same procedures are followed.

The non-recognition of traditional methods in modern criminal justice administration and the intervention by legislation in many African countries whereby extra-judicial processes are no longer legal have whittled down the use of these methods. Sections 106, 207 and 208 of the Nigerian Criminal Code applicable in southern Nigeria, for example, make it a crime to adopt the trial by ordeal method.

In modern judicial procedure, it is inadmissible to resort to any method that is still at the stage of testing, as well as various unscientific and morally inadmissible methods. In many African countries, there are concerted efforts to improve and increase scientific techniques, as well as create awareness of the importance of forensic science to crime detection.

The use of forensic science techniques, processes and gadgets in crime detection has to a large extent replaced the traditional methods. However, in Africa, there is the concern that it will need better strategies, a firm knowledge base, and sufficient funds for effective crime detection methods for forensic science to be properly established. The development of forensic science has come a long way from the time of primitive man, and there seems to be no end in sight to the continuing discovery of science's gift to law. Therefore, to reduce infringement in law and order in African states, it is necessary to persistently improve crime detection techniques.

In spite of the fact that several factors hinder the continuing existence of traditional methods of crime detection, some of these methods are still used in some rural communities in Africa. This has been attributed to different reasons, ranging from high cost, to the cumbersome process and lack of confidence in the modern legal system.

CRIME DETECTION METHODS AND HEALTH IMPLICATIONS

In the process of crime detection, certain persons are subjected and exposed to health hazards. Under the traditional African system, particularly the trial by ordeal method of crime detection, consumption of concoctions not subject to safety tests, inhaling of noxious substances, handling of harmful objects, or embarking on strenuous and dangerous expeditions in an attempt to prove innocence, all pose health hazards. Similarly, during forensic science examinations, there are health hazards during the process of examining samples, collection of samples and on persons involved in the whole examination process either as patients, workers or the public. This is particularly the case where radiation is involved. Sources of radiation are essential to modern healthcare, as it is a vital diagnostic tool. It has been recognized since early

studies on x-rays that exposure to high levels of radiation can cause clinical damage to the tissues in the human body. Workers pursuing their occupation and patients in diagnosis are most likely exposed to occupational and medical hazards.⁶³ These are normal exposures. Members of the public may also be exposed to health hazards. Therefore there are occupational, medical and public exposures.⁶⁴

It is virtually certain that some radiation exposure will result from the normal performance of practices, the magnitude of which is predictable. Such exposures are termed normal. There are also cases where there is potential exposure through equipment failure or design or operating error.⁶⁵

Biological effects of the exposure to radiation can be caused by the damage inflicted in cells by the radiation rays when ionizing radiation, such as the x-ray, interacts with living tissue. It is the absorption of radiation energy in this tissue that causes damage. This absorption of x-rays in the human body initiates a chain of events that may lead to damage of some cells and, eventually, cell death. This biological effect depends on factors like amount of exposure, rate of exposure, area of body affected, and the type of radiation.

Other radiation sicknesses which affect the health of persons are diarrhea, nausea, hemorrhaging and, if the dose is high, it may result in death. The effect of radiation may be short or long-term. The long-term effect may result in a disease like cancer.⁶⁶ Radiation in pregnancy is considered very dangerous. Therefore, in the course of an investigation of a crime, a pregnant woman must not be exposed to radiation unless it is absolutely necessary, in which case it should be reduced. There are health hazards on infants due to exposure of the embryo or foetus to radiation. The damaging effect of radiation on such foetuses in the first three months of pregnancy has been widely expatiated; hence it should be strongly discouraged. The effect includes a greater risk of leukaemia. Where there is exposure above the threshold dose and in severe exposure in the first three months of pregnancy, severe mental retardation and congenital malformation may occur.⁶⁷

Computed Tomography (CT), which is another equipment used in crime detection processes, can give very high eye doses coupled with the possibility of damaging the eye lens in patients.⁶⁸ Smeltzer, O'Connell and Bare have indicated that pregnancy and breastfeeding are said to be contraindications to certain computed tomography examination.⁶⁹

Adequate care must be taken also in handling instruments used in the process of crime detection and the samples collected for examination, as these could be hazardous to health. This is particularly important because of the HIV/AIDS virus. Moreover, adequate care must be taken where bodies are exhumed for forensic examination to prevent an epidemic.⁷⁰ Concerning tra-

ditional methods of crime detection, in as much as they are not subject to any scientific proof, there are still health implications arising from their use. The concoction administered during the trial by ordeal is alleged to be poisonous and not proven to be fit for human consumption. Therefore, the likelihood of poisoning, serious ailment, sickness or even death is not ruled out. Another issue is the burn resulting from the handling of hot metals by a crime suspect. A result contrary to this cannot be scientifically proved, as burns in scientific studies are the likely results of such an act.

RECOMMENDATIONS

In many African countries, better-equipped forensic laboratories should be established. In Nigeria, after the Okija shrine discovery, the necessity for a national dental data bank was emphasized. It was appreciated that with such information from the data bank, the identity of the numerous corpses recovered at the shrine and cause of death would have been known.⁷¹ Forensic science is arguably considered to be reliable. However, its use is affected by financial constraint. Government and scientific institutions should invest more in updating the laboratories. This was a big problem in the United Kingdom in 1994 where financial constraint was said to have an effect on the use of forensic science by the police.⁷² The police are the major arm of the criminal justice involved in crime detection. Therefore, to be more efficient the police need to be supported with the most up-to-date technical aid, minimizing risks. The acceptance by the society of risks associated with forensic science is conditional on the benefits to be gained from its use. Nonetheless the risk must be restricted and protected against by the application of safety standards. Servicing and periodic checks of equipment must be carried out to ensure that they are in good working order. Samples must also be properly handled to avoid mix-up. The use of scientific and technical means and methods in criminal investigation should not be confined to forensic examination. Forensic science is interdependent on other forms of investigation. Therefore, there should be integration of intelligence work, surveillance and forensic science. All parties in the criminal proceeding should have access to forensic science. This should be readily available and affordable not only to the prosecutor but also the defendant.

CONCLUSION

For proper crime detection in Africa, there is the concern that it will require better strategies, and firmer knowledge base. There is no doubt that the British legal system has come to stay, although it is overtaking and encroaching on the traditional system. The modern legal system recognizes logicity of judicial proceeding, proof, and it frowns at any method veering

form natural and reasoned adjudication. The methods adopted under the African traditional system may continue to be a possible way out of the legal dilemma in communities where they are approved and certified, until a more modern and scientific method is introduced and accepted. As to the future of forensic science in Africa, it will continue to advance in its work of aiding law enforcement.

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Part C: Balancing Traditional and Modern Medical Systems

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Crime Detection Methods and Health Implications

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