**Concept of Veterinary Jurisprudence in India**

 Veterinary Jurisprudence (VJR) Veterinary Forensic Medicine (VFM)

 Legal aspect of veterinary medicine

 Two subjects are closely related

**Forensic Medicine:** It is also called legal medicine. The name forensic comes from ‘forum’- the Roman market place where lawyers did their business from ancient times. It is a branch of veterinary medicine, which covers the application of the principles and knowledge of veterinary medicine for the purpose of law. Examples: veterinary medical knowledge in deciding the cases of mischief, cruelty, bestiality, mischievous killing etc.

**Scope of forensic medicine**

* It deals with those veterinary medical subjects, which are needed for application of scientific facts in legal matter, both civil and criminal offense cases.
* Emphasize forensic pathology and toxicology in order to bring it into partnership with the process of law.
* Application of principles and knowledge of facts of veterinary medicine to the purposes of law, both civil and criminal offense cases

**Branches of veterinary forensic medicine**

1. **Forensic obstetrics:**
* Use of corticosteroid in abortion cases
* Normal and abnormal delivery
1. **Forensic serology:** Using serological test to detect criminal offense.
2. **Forensic ballistics:**
* Basic knowledge of common firearms
* Physical aspects of the firearms injury
* Investigation of firearms ammunition and problem arising from their use
1. **Forensic toxicology**:
* Sources, characters and properties of poison
* Signs and symptoms they produce
* Details about the treatment to be undertaken
* Postmortem changes
* Collection of samples and analysis of poison
1. **Forensic pathology: Pathological techniques in determining the cause and manner of death due to-**
* Violence
* Suspicious case
* Unexpected case
* Sudden death
* Medically unattended case

**Why veterinarian needs fair knowledge of forensic medicine:**

1. Practicing veterinarian treat patients irrespective of origin, so they get some victims of criminal act to treat-
* Poisonous case
* Surgeon treat victims of criminal wound
* Treating cases of criminal abortion
* Practicing veterinarian will be required to appear as an expert witness in a court of law
* Forensic medicine prepare veterinarian to face such situation effectively
1. Veterinarian may be asked at any time to give their expert opinion in case of unexpected death. Forensic medicine helps to face such situation.
2. Fair knowledge must be needed to safeguard of a veterinarian from criminal cases
3. Veterinarian comes to know his own code of conduct-what to do and what not? through forensic medicine.

**Veterinary Jurisprudence:**

The word Jurisprudence comes from ‘juries’-law and ‘prudentia’-knowledge. It deals with the knowledge of law in relation to the veterinary practice. It also deals with the responsibilities of the veterinary doctors. Examples: Doctor-patient-owner relationship, veterinary medical negligence cases, rights and duties of veterinary doctor, infamous conduct and consent, veterinary medical ethics etc.

**Write down the difference between veterinary forensic medicine and veterinary jurisprudence**

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| --- | --- |
| **Veterinary Forensic Medicine** | **Veterinary Jurisprudence** |
| It deals with the veterinary medical aspects of law | It deals with the legal aspects of the practice of veterinary medicine |
| Brings veterinary practitioner into contact with courts of law | Brings relationship between veterinarian and owner of the patients and society |
| Application of paraclinical and clinical knowledge in the administration of justice | Legal responsibilities of veterinarians with: veterinary negligence case, veterinarian-owner, veterinarian-student, vet.-satae,veterinarian-veterinarian |
| Applied to all | Applied only veterinary practioner |

**Veterinarian and the law**

1. **Criminal law**
* Criminal law that concerns offences which are considered to be against the general public’s interest.
* Offences against the person, against property, against public safety, against the security of the state etc**.**
1. **Civil law**
* Concerns dispute between two individual rather than state
* The dispute may be over the negligence, contact, debt, libel or slander (false statement) where one citizen claims that another has caused him private wrong or disadvantages. But this crime has no public concerns or severity of state
1. **Combined civil and criminal law:** Sometimes same incident has both criminal and civil proceedings. Example: A car crush lead to both criminal prosecution for dangerous driving (public offense) as well as a civil action for damages for personal injuries suffered by someone as a result of driver’s negligence.

**Some terminology**

**Defendant:** In both types of law (civil & criminal actions) the accused person is called defendant**.**

**Offense:** The term which implies the unlawful acts which are liable to pay, damage, to fine or imprisonment or even sentenced to death**.**

**Warrant:** A written order from legal authority regarding arrest of the caused or for forcible production in coast**.**

**Summon case:** It is a case relating to offense punishable with imprisonment for one year or less than that.

**Affidavit**: It means written declaration under oath.

**Deposition:** It is a written statement on oath made by witness in a judicial proceeding and signed by the witness and the magistrate.

**Document:** Any matter expressed or described upon any substance by means of letter, figures or masks or by more than one of those means, intended to be used or which may be used as evidence for that matter.

**Evidence:** All legal means, which help to prove or disprove any matter of fact the truth of which is submitted to judicial investigation.

**Testimony**: It means the evidence oral or written of a witness under oath.

**Complaint**: An allegation made orally or in writing to the magistrate with a view to taking action under criminal procedure code that some person known or unknown has committed the offense.

**Perjury**: Willful giving false evidence by a witness under oath or failure to state what he knows and believes to be true.

**Courts of law and their powder**

There are three (3) classes of courts of law-

1. **Civil court (munsef court)**: Civil court is the court of the lowest order handling matters pertaining to civil matters in India. It is usually controlled by the district court of the respective court**.**
2. **Criminal court (magistrate court**): Criminal court is the lowest court where all the criminal proceedings start. Some civil matter also decided in this court.
3. **Both civil and criminal court:** a) Hight court b) Supreme court c) Session court

Structure of magistrate court:

 2nd class magistrate Magistrate court 3rd class magistrate

 District magistrate 1st class magistrate Additional district magistrate

 Upazila magistrate

Assistant district magistrate

 Metropolitan magistrate

**Power of high court:** It may try any offense or it may pass any sentence authorized by law**.**

 Death sentence High Court Life long imprisonment

 Imprisonment with solitary confinement

**Power of Supreme Court:**

* Supreme court is the highest body of the adjudicator
* If a person is dissatisfied with verdict of the high court, he can appeal to the supreme court which tries that case again.

 Can deal any appear Supreme Court Can pass any verd

 Any ruling declared by it must be followed in lower court

**Power of session court**: Session courts are the judicial subdivisions which may include one district or more.

The session judge court Session court The assistant session judge court

* Can try any case Can try any case
* Can pass any sentence authorized by law Can pass any sentence authorized by law,
* But death sentence must be approved by high court except death and imprisonment exceed 10 years

**Witness**:

Witness is a person who narrates evidence in the court from the personal knowledge about the fact in question. In other words, the person who saw, heard or knew the incident and is called upon by the court to give evidence is known as witness.

Types of witness-

1. Common witness: The person who give evidence about the facts observed by him. Example: In case of traffic accident the people who witness the accident becomes a common witness.
2. Expert witness: An expert witness is one who an account of his professional training and skill is capable of giving opinion. Example: Medical man, Veterinary practioner, Firearm expert, Finger prints experts, Hand writing expert etc.
3. Hostile witness: The person who during his deposition in the court, is assumed to have an interest or motive for concealing the truth or part of it or for giving the false evidence. A common or expert witness may be become hostile.
4. Other witness:

Court witness: The person who appears the court on behalf of the court is a court witness

* Veterinary doctor is a court witness
* Skilled or scientific witness-Photographer

**Veterianry medical evidence**

**Evidence:** All legal means, which help to prove or disproving any matter in question is called evidence.

1. Oral evidence
2. Direct evidence: This is an evidence of the eyewitness who has knowledge about the fact which he has seen.
3. Indirect evidence: In case of alleged murder of A by B in certain place on a particular day and time. B was seen by C running away with a blood stained knife. C’s evidence in the case would be indirect or circumstantial evidence
4. Documentary evidence

Three types

* Vet. Medical certificate
* Health certificate
* Death certificate
* Age certificate
* Insanity certificate
* Bestiality certificate
* Pregnancy certificate
* Abortion certificate
* Post mortem report
* Age certificate
* Lunacy certificate

 Other documents:

* Dying declaration
* Deposition of witness taken in lower court
* Chemical examination report
* Hospital record- date of treatment given
1. Hearsay evidence: Evidence that does not proceed from the personal knowledge of the witness but from the mere repetition of what he has heard others say.

**Write down the hints for giving evidence in the court**

A veterinary witness for giving evidence should observe the following hints-

* Always get up the facts of the case before going to court by a reference to your original notes and consider what possible questions you may be asked and be prepared with your answers.
* Speak slowly and distinctly
* Avoid technical terms as far as possible, use simple and plain language
* If unable to give any answer say, I can n’t answer
* Do n’t loose your temper. The lawyers have latitude (scope of freedom) in putting questions to the witness in cross-examination and may put questions of an irritating nature
* Quotations from books should be avoided. You are supposed to express an opinion from your knowledge and experience.
* Books are sometimes quoted by counsel (lawyer) and the witness is asked whether he agrees with the quotation.
* If the witness does not do so, he should before replying, ask to be allowed to read the passage quoted himself in order to see that the context does not give a different meaning to it from that assumed for it by the counsel.

**Common offences against animals**

The common offences against animals are-1) Mischief 2) Cruelty and 3) Bestiality

1. Mischief (Harmful behavior)

This includes killing, poisoning or maiming of animals

1. Poisoning: Poisoning is a commonest method of mischievous killing of an animal
* *Abrus precatorius*
* Arsenic
* Aconite root
* Snake venom
* Datura leaves
* Seeds of yellow oleander
1. Maiming: Maiming means making an animal useless by the use of violence. This type of offense is also common and its aim is to harm the owner when an animal damages the crop or other property. The common form of rendering useless are-
* Cutting of tendon and ligaments, particularly of the legs and neck
* Dislocation or opening of joints
* Injuries to the eyeball leading to blindness of an or both eyes
* Injuries to the udder of milch animalsof
* Tearing of vagina or rectum by introducing sharp or blunt object
* Punctured wounds or opening up of the abdomen and thorax
1. Killing: Mischievous killing of animals includes-I) Poisoning II) Slaughtering III) Violence IV) Starvation V) Strangulation VI) Drowning

Noted observation in molested animals:

* The nature site and magnitude of the wound
* The presence or absence of hemorrhage
* Probable period of existence of the injury
* Probable prognosis
* The effect it has had or is likely to have on the usefulness of the animal
* If a bullet, a broken piece of a knife or dragger or any other foreign body is found in a wound, it should be handed over or sent in sealed cover to the police and a receipt obtained
* Such foreign bodies afford valuable evidence

**Punishment/ Penalties**:

* Whoever commits mischief by killing , maiming or rendering useless of any animal or animals of the value of ten rupees or upwards, shall be punished with imprisonment of either description for a term which may extend to two years or with fine or both (Section 428, IPC= Indian Panel Code)
* Whoever commits mischief by killing, poisoning, maiming or rendering useless any elephant, camel, horse, mule, buffalo, bull, cow or ox, shall be punished with imprisonment of either description for a term which may extend to five years or with fine or with both. (Section 429, IPC= Indian Panel Code)
1. **Cruelty:** This is a very common crime, probably due to sadistic nature (individuals who derive pleasure from suffering of others) of an owner or attendant. The crime usually consists of beating, overloading, overdriving or cruelly binding healthy animals or using a diseased animal for work. Others form of cruelty like starvation and the operation called phuka.

**Penalties:**

* Animals which are subjected to cruelty are usually detained in recognized hospital for treatment and cost is recovered from the owner.
* It is punishable with fine up to Rs-100/- and / or imprisonment for the three months under the cruelty of Animal act .
* The act is applicable only to areas to which it has been specially extended by the provincial government and there also to acts of cruelty committed in public places or visible from public places
1. **Bestiality**: Bestiality or sexual intercourse of human with the animals. Sexual intercourse by a man with an animal usually per vagina or anus is called bestiality. It means carnal intercourse with man, woman or animal against the order of nature.

**Reasons for bestiality**:

* The common belief among illiterate people that intercourse with she-donkey is a remedy for gonorrhea
* Excessive sexual desire with less opportunity for natural intercourse
* Young villagers, who go out to graze cattle in field far away from human eye, are incited, owing to loneliness and the proximity of the animals to commit this crime.
* People having some mental abnormalities
* In bestiality crime, the human male is active agent and the passive agent is a goat, donkey, mare , cow or even hen
* No cases of the human female are publicly known

**Diagnosis of bestiality:**

*Signs in accused person*

* The offender are usually caught red-handed
* Penis may be contaminated with animal feces, vaginal secretion or hair
* Marks of injuries on the body of the accused person due to kicks, teeth or claws of the animal
* Presence of animal hair on the external or the cloth
* Some animals urinate during the act and the urine may soak the cloths of the accused or cloths may emit the peculiar smell of the species

 *Signs in the animal*

* Presence of human spermatozoa in the vagina or the anal canal
* The possibility of natural intercourse with a male of the same animal species should not be forgotten or ascertain the availability of the male and whether female animal was in heat or not
* Friction, abrasions or lacerations of the vagina or anal canal should be examined
* If the accused is suffering from gonorrhea, the presence of organism in the vagina or anal canal
* Examination of seminal stains may be examined by physical, chemical or serological test.

 **Penalties:**

* Bestiality is punishable under the section 377 IPC
* Whoever voluntarily has carnal intercourse against the order of nature with the a man, woman or animal should be punished with transportation for life or with imprisonment of either description for a term which may extend to 10 years, shall also liable to fine.

**Examination of dead animals in criminal cases**

The objectives of examination of dead animals is to find out the cause of death and manner of action of this cause

* The examination is best performed where the body is found, but the body may have to be removed to an open place or to a mortuary
* The carcasses presented are frequently decomposed or partly eaten by wild animals
* The cause and manner of death in each case are ascertained by applying veterinary knowledge and common sense
* The examination should be conducted in broad daylight and the time date and place of each examination should be noted
* If the examination is conducted at the site of occurrence, the position attitude and surrounding of the body should be carefully examined for anything significant.
* Information available from source regarding the ante-mortem symptoms, duration of illness if any, probable cause of death etc. should be noted
* General features of the carcass e.g. warmth, rigormortis, decomposition or any significant external appearances like injuries, cutting and denudation of hair should not be overlooked
* A detailed record of lesions whether connected with the cause of death or not should be kept
* In cases where specialized scientific help like chemicolegal examination is required, the material should be send to expert person.

**Mischievous killing of animals**

Methods of mischievous killing of animals are-a) Poisoning b) Slaughtering c) Violence d) Starvation e) Strangulation and f) Drowning

1. Poisoning
* Dips or spray (ectoparcitida)
* Herbicides
* Insecticides
* Insect bait
* Wood preservatives

*Application of poisons:*

* Common form of poisoning by charmer to cattle for the skin
* Arsenic oxide/Sodium arsenate is usually powdered with oil. A quantity of this often wrapped in a banana leaves or enclosed in a bundle of grasses or ball of flour feeding to the victim

*Abrus precatorius* poisoning:

Charmer or leather worker use these seeds for poisoning. Abrin is the active principle of *Abrus precatorius* and is a toxalbumin similar in action to ricin.

**Preparation of spike for Abrin poisoning:**

* The decorticated seeds are soaked in water and ground into mass, which make into small pointed object and dried in the sun
* These needles are fixed into a bamboo rod
* A forcible blow is then stuck with the handle, driving the protruding spike into the animal flesh where they are left for 18-24 hours
* The needles are inserted at selected areas like throat or hind quarter, so that symptoms resemble to hemorrhagic septicemia or black quarter.

 **Snake venom:**

* At first Cobra is irritated to bite a banana, which is crushed and placed on a rag
* Charged rag inserted into the rectum of a victim by means of split of a bamboo, which tears the rectal mucosa, so enabled the venom to be absorbed.

Mechanism of snake venom poisoning

Elanpine (Cobra): Neurotoxin paralysis of respiratory center

Viperine: Hemotoxin Damage vascular endothelium

**Datura:**

* Seeds and leaves of datura used for poisoning through orally
* Alkaloides: Atropine, Hyoscyamide, and Hyosine

**Oleander:**

* **Glycosides:** Oleandroside, neriside-cattle and horse die after eating 28.36 gram of green leaves

**Test of poison:**

Arsenic: Reinch test

*Abrus precatorious* poisoning: Agglutinating red blood cell.

Datura poisoning: A drop of patient urine instilled into eye of young cat, dog or rabbit. Then, animal should be kept in a dark room for half an hour. Examine the eye in the bright light to see the dilated pupil in poisoning cases.

**Post mortem examination of poisoning cases:**

* The carcass should be particularly examined for the state of pupil and the marks of corrosion in the mouth, throat, stomach and intestine
* Collect stomach, rumen contents, liver and urine for chemical examination
* Do n’t neglect to check the other parts of the body

**Arsenic poisoning**:

* Intense rose-red inflammation and edema of the gastro intestinal tract
* Rupture of the blood vessel and necrosis of the intestine
* Submucosal hemorrhage in the stomach, duodenum and cecum
* Inflammation of the abdomen is pronounced

**Rati (Abrin) poisoning**

* Needle detected under the skin
* Intense inflammatory edema at the site of implantation (quarter, throat region)
* Enlarged, edematous, hemorrhagic lymph node

**Snake venom poisoning**

* Rag may be found in the rectum of dead animals
* Extravasations of blood in the tissues

**Datura poisoning**

* Lesions are not characteristics

**Oleander poisoning**

* Gastro-enteritis
* Petichial hemorrhage on various organ

**Drowning:**

* Drowning is a form of asphyxia in which the entry of atmospheric air into the lungs is prevented due to aspiration of fluid into air passages, caused by submersion of the mouth and nostril under water or any other liquid
* Drowning is rarely employed as a means of the mischievous killing of animals, but when dead bodies are recovered from water, the veterinarian may be asked to decide whether the cause of death was drowning or some other factors which are responsible for death
* Veterinarian can decide by the examination of carcass whether the animals was alive at the time of drowning or whether the dead animals was thrown into the water

**Diagnosis of drowning in sensible animals**

* While froth at the mouth and nostrils and corrugated skin
* Early rigormortis and white froth in the respiratory tract
* Edematous, distended balloon shaped lungs
* Presence of mud, sand or floating matters mixed with water in the respiratory tract and stomach

**Unconscious animals**: Hardly swallow water

**Dead body thrown in water:**

* All these feature of sensible animals are absent
* Then examine the dead animals for other causes like violence, poisoning, diseases etc.

**Penalties:** Mischievous killing or poisoning of the large animals or other animals costing 50/- or more is a cognizable offense and punishable.

**Accidental deaths of animals**: It may occur due to lightning stroke and electrocution are sometimes suspected to be malicious or criminal

**Lightning stroke**:

1. **Animals in open field**
* Lightning stroke is seasonal
* Flashes of linear lightning during thunderstorms may prove fatal to animals
1. **Animals under the tree**
* Trees which are tall, spreading and well developed, just beneath the ground surface tend to be struck more often by lightning
* Damp ground act as a conductor for electricity passing
* Animal electrocuted by standing on electrified earth
1. **Animals in other place** : Fences, house, pools of water prone to lightning stroke

**Causes of electrocution of animals:**

* Faulty electric circuit in cowsheds and barns causing electrocution of animals when standing in water or damp ground.
* Transmission wires may break and fall down on animals: Direct on animal causes killing animals instantly, chew the electric cord, electrify pool of water

**How do lightning stroke or electrocution cause death of animals?**

* Severe nervous shock
* Paralysis of respiratory centre
* Ventricular fibrillation of heart

**Diagnosis:**

1. **Lightning stroke:**
* History of thunderstorm in the locality
* Evidence of the effect of lightning-damage house or trees
* If veterinarian investigating insurance claims, in that case both the owner and the insurance representative should be present at the time of necropsy
* Necropsy findings revealed externally singeing or burning marks
* Half chewed food in the mouth
* Brain may be congested or disorganized
1. **Electrocution :**
* Burnt marks at the point of contact with the wire
* Rigormortis develops quickly
* Bloody discharge from all natural orifice
* Distended rumen and swollen carcass
* Congested upper respiratory tract
* Longitudinal fracture of long bone
* Burning marks on the feet or muzzle

**Post mortem examination of vetero-legal case:**

**Objectives:**

* To ascertain the time since death and
* To determine the cause of death

**Rules of post-mortem examination:**

* A vetero-legal postmortem examination should be done by written order from the police or the district magistrate
* Before examination carefully read the police report
* The examination should be done in daylight
* The postmortem examination should be through and complete
* All the details observed by the veterinary officer should be carefully noted in the postmortem report in the spot of post-mortem examination
* The notes and the report should be sent to the court
* A veterinarian should have a fair knowledge of the normal pathological appearance of the viscera
* Time and date of arrival of carcass should be noted
* There should be no unnecessary delay in holding post-mortem examination
* No unauthorized person should be allowed to be present at the time of examination

**Instruments required for post mortem examination**: Two knives, enterotome, scissors, thumb forceps, bone cutting saw, costotome, chisels, rubbergloves, bucket, glass bottle, measuring tape and probe

**Procedure of post-mortem examination**:

1. External examination:
* Note the general condition of the carcass
* Note the species, age, breed and sex of the animal
* Examine the body surface for injuries, burning marks, swelling etc.
* Looking any discharge from natural orifice
* Examine visible mucous membrane
* Examine the external genitalia
* All the bones should be thoroughly check up to see the fracture or joint dislocation
1. Internal examination:
* The bovine carcass should be placed on the left side down in order to keep the rumen out of the way
* The right fore and hind limbs are served by cutting all muscles and attachments. It is better to disarticulate the right limb
* The abdominal wall is removed by making incision along its periphery
* The rumen, reticulum, omasum and abomasums are opened in situ. Then, remove the contents and examine properly.
* The thoracic cavity is exposed: The lungs and heart are removed with trachea and esophagus
* Examine the genital organs, rectum and urinary bladder

**Common frauds in the sale of livestock and livestock products**

The veterinarian is sometimes asked to examine living animals alleged to have been fraudulently sold or transferred**. The frauds are usually three types-**

1. Alteration of description of an animal which has been stolen or which is known to be defective
2. Attempts to make an aged animal appear younger
3. Attempts to mask a disease or deformity in animals for sale
4. **Alteration of description of an animal which has been stolen or which is known to be defective**

 It is usually done in the following ways-

* Castration
* Close clipping of mane and tail
* Docking the tails of horses and dogs
* Punching holes in the ears of cattle and buffaloes, cutting away the ear of dogs
* Picking the tuft of white hair from the tail of cattle and buffalo
* Distorting brand marks
* Coloring the white patches on the side and face of a horse with a hair dye or henna : In this case suspected part should be carefully rubbed with cotton wetted with saline or dilute ammonia
1. **Attempts to make an aged animal appear younger**
* Making a small hole on the table surface of teeth with a hot pointed iron and filling the hole with black substance. The regular appearance of these marks and the fact that they are similar in all teeth usually betray their artificial nature
* Aged horses are sometimes made to appear younger by blowing air under the skin of their supra-orbital fossae
1. **Attempts to mask a disease or deformity in animals for sale**
* Chronic ulcer or fistulae are often covered with clay or mud colored to match the animal coat
* Lameness of one limb sometimes masked by artificially inducing lameness in the opposite limb

**Penalties:**

Frauds in the sale of livestock are punishable under the section 420 IPC.

**Frauds in the sale of livestock products**

It is rare for the veterinarian to be called upon to examine livestock products for fraud as the food safety laws are not strictly enforced.

1. Reduction of fat of milk
2. By adding water: Adding water dilutes milk. It is sometimes dangerous due to introducing germs from polluted water. Normal or pure milk does not contain nitrate but ordinary water does. So, the percentage of nitrate in the milk is a sure test of adulteration of milk by adding water. Detection of specific gravity can also measure the adulteration of milk by adding water. Normally specific gravity of water is 1.000, but 1.028-1.032 is in milk.
3. By skimming milk: The fat of the milk is removed by adulteration. This can be detected by its high specific gravity, low percentage of fat and high percentage of solid non fat. The milk becomes less viscous.
4. Frauds in the sale of meat (Falsification of meat): Horse flesh is falsified for beef, goat’s meat for mutton and flesh of cat for rabbit etc.

There are three main methods for the detection of falsified meat-

1. Physical examination of meat b) Chemical examination and c) Serological examination
2. **Physical examination of meat**

 **Characteristics of mutton:**

* Rich fat deposition between group of muscles
* Fat is white in color, farm and hard
* Meat is dark red color and ammoniacal odor
* Bone marrow is slightly red
* Fat not mixed with muscles

**Goat meat**

* Paler than mutton
* Muscles contain very little fat
* Odor of meat resemble the odor of buck

**Pork meat**

* Whitish-grey but it becomes grey-red in aged animals
* Fat is white and granulated
* Bone marrow is pink red in color
* Fat intermixed with muscles

**Dog meat**

* Fat is slightly intermixed with muscles
* Dark red in color but fat is white in color

**Beef**

* Fat intermixed with muscles
* Saturated red in color with a brown tinge
* After chilling fat acquires a firm consistency

**Horse meat**

* Meat is dark red
* Air exposed meat becomes blackish in color
* Fat is golden to dark yellow in color
* Bone marrow is greasy

**Poultry meat**

* Muscles fiber are firm and fine
* Fat intermixed with muscles
1. **Chemical examination of meat**
2. Glycogen test: Glycogen more in horse meat and pig liver as compared with other meat
3. Test for fat of the animals : Horse fat contain Linoleic acid 1-2%, the percentage of this acid is not more than 0.1%
4. Determination of Iodine value**:** Iodine absorbed by unsaturated fatty acid present in the fat. Refractive index of horse fat is 35.5, ox fat 40, and in pig fat above 51.9.
5. **Serological examination**
6. Precipitation test
7. Agar gel diffusion test

**Penalties:** Frauds in the sale of livestock products are punishable under the section 415 IPC.

**Vetero-legal wounds (Medico-legal wounds)**

**Wound:** A wound may be defined as damage to living tissue. Breach of continuity of the skin or mucous membrane**.**

**Classification of wound:**

1. **Wound by hard blunt object or fall on the ground**
2. Abrasion or scratches b) Bruise or contusions c) Lacerated and d) Fracture and dislocations
3. **Wound by sharp object**
4. Incised wound b) Punctured ( penetrating and perforating wound)
5. **Gunshot wound by firearms**
6. **Wound from heat/lighting/corrosive chemical/ boiling liquid/steam:** Burn, Scald
7. **Wound by various types of bomb splinter**

**Bruise or contusion wound**

* The pattern and size give an idea of the extent and degree of violence
* The weapon used can be roughly estimated e.g. whips, chains, ligature, vehicles etc.

**Lacerated wound**

* Barbed wires
* Attack from other animals (claw, teeth, horn)

**Vetero-legal importance**

* Edges, width, length (greater than width and depth)
* Types of laceration may indicate the cause of injury
* Foreign bodies found in the wound may indicate the circumstances in which crime has been committed

**Incised wound**

* Length is greater than width and depth
* The shape may indicate the nature of the weapon
* The age of the injury can be determined
* Position and character of wounds may indicate nature of death like accident or homicide

**Age of incised wound**

* Fresh wound: Hematoma
* 2 hours: Edges are red, swollen, adherent with blood and lymph
* 24 hours: Continuous layer of epidermal cells cover the surface, scrab of dried clot is seen
* 36 hours: Network of capillaries become complete
* 48 to 72 hours: The wound is filled with fibroblast and capillary buds
* 3-5 days: Thickening of vessels are seen
* 1-2 week: Scar formation starts

**Punctured or stab wound**

* Shape of the wound may indicate the type of weapon
* Depth of the wound may indicate force of penetration
* The age of injury
* Position and direction of wound may indicate the mode of production like homicide or accident

**Differences among the incised lacerated and punctured wound**

|  |  |  |  |
| --- | --- | --- | --- |
| Trait | Incised wound | Lacerated wound | Punctured wound |
| Site | Any where | Usually over body prominence | Usually chest and abdomen |
| Manner of production | Sharp object or weapons | Blunt object or weapons | Pointed sharp or blunt weapons |
| Shape | Linear or spindle shaped | Varies, irregular | Linear or irregular |
| Dimension | Usually longer than width and depth | Longer than deep | Depth greater than length and breadth |
| Margins | Smooth even clear cut | Irregular | Clean cut, parallel, lacerated if weapon is blunt |
| Abrasion on edges | Absent | Usually present | Absent |
| Bruising | Absent | Bruising of surrounding and underlying tissues | Rare |
| Hemorrhage | Profuse and external | Slight, except external scalp | Varies, internal |
| Hair bulb | Clearly cut | Crushed or torn | usually clean cut |
| Bones | may be cut | may be fractured | may be punctured |
| Foreign bodies | Absent | Usually present | Present or Absent |

**Gunshot wound (Firearm wound)**

The entrance of the gunshot wound is smaller than exit**.**

**Professional infamous conduct**

* Adultery (extra marital sex scandal), alcohol drinking and addicted to drug
* Association with bad people or manufacturer
* Conviction (someone guilty due to criminal offense)
* Covering-association with unqualified or unregistered person practicing medicine in such a way that members of public are misled
* Veterinarian should not employ professional knowledge and skill to cause a deterioration of the quality of veterinary service
* Veterinarian should never refuse treatment without good cause
* If a veterinarian called upon by an owner to see a sick animal which has recently been in the case of another veterinarian , he should decline to attend
* Unless first veterinarian has retired from the case
* The owner has informed doctor that his service are no longer required
* The veterinarian called in must also inform the veterinarian, he is superseding (taking place of other)
* To issue certificates and notifications of professional characters
* It is unprofessional for any veterinarian to give testimonial in favor of proprietary or patent articles, medicine or animal foods
* Relationship between veterinarian and employment should purely on professional relationship (honor, good faith and mutual trust)

Veterinarian should not employ or use or permit any persons to diagnose the disease medical and surgical treatment of animal

* When veterinarian is asked by an insurance company or similar body to examine the cause already in under treatment. He must ascertain the name of veterinarian in attendance and give his adequate notice of the time and date
* Veterinarian should communicate to all other veterinarian in that area in case of setting up a new private practice
* In private practice a partnership should be clearly expressed in writing
* Canvassing is unprofessional for veterinary practice

**Professional malpractice/ Professional negligence**:

Types of malpractice

1. Civil malpractices
* Failure to prescribe Tetanus Toxoid (TT) to a patient of road injuries, castration or other punctured wound
* Breaking of needle during injection
* Prescribing overdose of medicine
* Giving poisonous drug carelessly
1. Criminal malpractices
* Performing criminal abortion
* Issue false health certificate
* Leaving instrument or swab in the site of operation
* Mitch matched blood transfusion
* Use of wrong drug in the eye causing loss of visions

**Write down the precautionary measures against malpractice**

* Never guarantee for cure
* Employ ordinary skill and care at all time
* Keep full accurate medical records
* Do n’t fail to get consent before recto vaginal palpation
* Do n’t fail to get written informed consent before operation or giving anesthesia
* The diagnosis should be confirmed by laboratory investigation
* When diagnosis is obscure, consult a specialist
* Immunization should be done to check tetanus
* Sensitivity test should be done before injecting any drug
* The drug should be identified before being injected or used otherwise
* On a criminal wounding operation should not be performed unless necessary
* A qualified person should give anesthesia
* Proper instruction or post operative care should be properly taken after surgical operation
* Do n’t leave a patient with labour
* Do n’t fail to get written consent of the owner if an operation is made

 **Insurance**

* Insurance of animals has not become popular in Bangladesh probably because most of them are of low value
* Some valuable animals like racehorses and pedigree dogs are insured against death or accident
* Certain short-term insurance covering the risks involves in some operations like castration
* In all such cases the veterinarian is called upon to examine the animal for freedom from special influence tending to shorten life and or judging its market value
* Usually insurance company sends a prescribed to be filled in
* A detailed description of the animal is to be noted and a detailed post-mortem examination made to ascertain the cause of death
* Even though this information is not always required, it will be useful if any dispute arises later
* It seems unfair for a veterinarian to be asked a judge the market value of an animal. He should try to avoid giving an opinion on this point but in case of extreme necessity he should give a non-committed reply
* The insurance company like others clients must pay the fees

**Wound certificate**

No. Date:

This is to certify that at the request of Mr. X, Village: Y, District: Z. I have this day examined a Cow/Bull/…..having the following identification marks, age 6/7….years, breed local/ cross and color white/ black belonging to Mr. X

The said animal has got the following injuries on its body

I am of opinion that……

Place… Signature

 Qualification and Designation

 **Veterinary Medical Ethics**