POST MORTEM

It is important to consider the *post-mortem* changes present in the corpse. The main ones are tympanization, *rigor mortis*, desquamation of epithelia and imbibition by hemoglobin and bile.

POST-MORTEM CHANGES

Rigor mortis: Consist on the hardening and a certain contraction of the striated and smooth musculature.
Tympanization: Is the fermentation that occurs in the stomach and intestines, causing great distension because of the presence of gas.
Imbibition: Due to hemolysis inside the blood vessels, the reddish plasma is absorbed by neighboring tissues and forms a red stripe along them. Imbibition with bile occurs when this liquid passes through the gallbladder wall and stains the adjacent tissues with a greenish color.

EXTERNAL INSPECTION

It must be carried out with care. It can give us information of possible skin diseases, dermatomycosis, Erysipelas, Circovirus, etc. The external inspection consists of the following steps.

DORSAL SUPINE POSITION

- Identification of the animal.
- Nutritional status.
- Inspection of skin, hair, hooves, bones, joints, and natural holes.

Follow the arrows

PRIMARY INCISION

Separate the union of the anterior members from the thorax by striking on each side through the pectoral muscles, between the scapula and the thorax.

The two incisions are continued forward, along the neck and the inner face of the lower jaw, until it joins the level of the mandibular symphysis; here the regional lymph nodes (mandibular, retropharyngeal, etc.) are exposed. Two incisions are made in the inguinal region to disarticulate the hind limbs, severing all the necessary muscles and opening the hip joint; the inguinal, prefemoral and coxofemoral joints lymph nodes are exposed.

ORGANS IN THE PRIMARY INCISION

Subcutaneous tissue should be slightly moist with variable degree of adiposity, blood congestion (hypostasis), edema, hemorrhages, and gas bubbles.

Evaluate muscular tissue color, consistency, stages of cachexia and malnutrition.

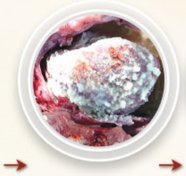
All lymph nodes are examined *in situ* for any anomaly in size, color, and consistency.

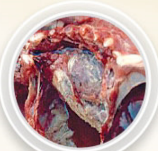
SECONDARY INCISION

The purpose of the secondary incision is to observe and inspect the organs located inside the body cavities.

Make a cross-section of approximately 10-15 cm. toward the sternum cephalic and sternohyoid muscles of the neck. Lift these muscles to ward the sternum. Remove the sternum, cutting through the costal cartilages of both sides simultaneously, from front to back. The cut must be continued along the abdominal cavity.

THORACIC CAVITY





Examine the viscera position and the cavity content. Evaluate the presence of water (hydrothorax), blood (hemothorax), and exudates (pleuritis, pleuropheumonia).

The pleura should be smooth, shiny and transparent.

The pericardium should be inspected *in situ*, there may be fluid (hydropericardium) or presence of fibrin (fibrinous pericarditis).

ABDOMINAL CAVITY

Evaluate the position of the viscera. Some *ante and post mortem* alterations can be detected.

In the *ante mortem* inspection check for circulatory disorders (hyperemia, infarction) and misplaced dark red viscera. Keep in mind that moving the carcass can lead to the displacement of viscera, especially of the intestines.

Normally, in the abdominal cavity there are approximately 5 ml. of peritoneal fluid (serous and crystalline). Abnormal contents include gases due to fermentation, and stomach or intestinal contents due to rupture. Also the presence of fluids as edema (ascites) blood (hemorrhagic ascites), fibrin (fibrinous ascites), parasites and fetuses (ectopic gestation).

VISCERAS EXTRACTION AND EXAMINATION

This order is recommended for extraction and inspection of organs.

1. Tonsils, heart, respiratory system, and tongue.
2. Esophagus, stomach, intestine, liver, and spleen.
3. Adrenal gland, renal system, and genital apparatus.
4. Musculoskeletal system.
5. Nervous system.

HEART, RESPIRATORY APPARATUS AND TONGUE

Remove the tongue with the hand and cut all the tissue that surrounds it. Examine the pharynx, tonsils and lymphoid nodes. When you get to the hyoid bone cut it into its joint. Hold the tongue with one hand and pull it back, continue to remove the trachea and esophagus. Remove the heart along with the lungs, trachea and esophagus until reaching the diaphragm. Cut the aorta and posterior vena cava near the diaphragm. Extract tongue, trachea, lungs, and heart together.

TONSILS

Inspection and sampling of tonsils is essential when suspecting bacterial diseases to rule out viral diseases. Tonsils are examined *in situ* and normally show a whitish gray color. The presence of redness is nonspecific and accompanies very morbid states. Abscesses are common.

HEART

The following routine can be followed:

Identify the sides of the heart. Take the heart with the left hand, with the left side of the heart to the right, leaving the pulmonary artery in sight.

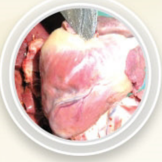
Open the heart in four cuts:

1st. Cut. On the right ventricle, make a cut from bottom to top, until reaching the pulmonary artery. Continue toward the lung; the endocardium, and ventricular myocardium. The semilunar valve and the vascular endothelium are observed.

2nd. Cut. Rotate the heart 360 degrees to the right of the prosector and cut from the base upwards until reaching the right atrium and vena cava; observations are made and recorded.

3rd. Cut. Return the heart to its initial position. Cut now on the left ventricle, from the bottom up, to the aorta.

4th. Cut. Rotate the heart 180 degrees to the left of the prosector and make a cut from the tip of the heart up, until reaching the left atrium and the pulmonary branches. During inspection evaluate the pericardium, epicardium, pericardial fluid characteristics, heart shape, and size. Also observe the parietal and visceral endocardium, and myocardium.



TRACHEA

Open in by cutting the tracheal muscle throughout its length, until it reaches the bifurcation; the mucous membranes are examined, there may be transudates, exudates and hemorrhages.

LUNGS

Start with an external inspection:

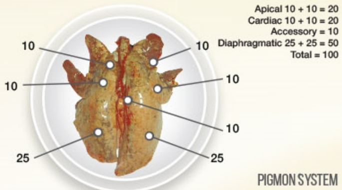
1. Visceral and parietal pleura.
2. Following the PIGMON system, check for presence of pneumonia.
3. Open the bronchi, following several of its ramifications in all the lobes. Observe the bronchial mucosa and pulmonary parenchyma.
4. Make several cross-sections through the lung parenchyma.

Pleura. It must be bright and transparent, fibrin membranes and adhesions can be observed in the neighboring anatomical regions.

Consistency. The palpation should be soft and fluffy. Consolidation occurs in cases of pneumonia.

Bronchios. They must be empty. Exudates or edema (foam) may be observed.

Pulmonary Parenquima. It must be pink, opaque and without liquid outlet when making cuts; changes could indicate pneumonia or circulatory disorders.



PIGMON SYSTEM

STOMACH, INTESTINE, ESOPHAGUS, LIVER & SPLEEN

1. Review the biliary flow to the duodenum.
2. Extraction of the liver, spleen, and digestive tract.
   - Remove the spleen and liver.
   - Check stomach, duodenum, and ileocecal valve.
   - Review cecum and colon.

ESOPHAGUS AND STOMACH

Check the serosa and the size of esophagus and stomach. Open the entire esophagus and stomach by its greater curvature, to observe the mucosa and the content. Remove and check the stomach content.

SMALL AND LARGE INTESTINES

Separate the intestinal loops, examine the serosa, mucosa and possible content.

LIVER AND GALLBLADDER

Liver. Check size, borders, capsule, consistency, and external color. Make several cuts in the parenchyma of all lobes.

Gallbladder. Check the degree of filling and characteristics of its content and mucosa.

LIVER AND GALLBLADDER

KIDNEYS

Check the size and the external capsule.

Remove the capsule from both halves of the kidney, checking the exposed surface. Split the kidney longitudinally into two halves to inspect the renal parenchyma and pelvis. Make several cuts through the parenchyma.

SPLEEN

1. Determine size, weight, external coloration, surface of the capsule, and consistency.
2. Make several cross cuts through the parenchyma, observing the surface of the cut.

MEASUREMENT

URETER

Check and look for changes in thickness and diameter.

With scissors, open both ureters to check the mucosa and content.

URINARY BLADDER AND URINE

Determine the filling of the bladder and make an incision to see the characteristics of the urine.

Open the bladder throughout its length and check the thickness of the wall and mucosa.

agrifirm

SPECIAL NUTRIENTS

EXTRACTION AND BRAIN EXAMINATION

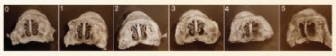
Detach the head at the level of the occipitoatlantoidea joint. Cut from the base of the zygomatic apophysis, towards the supra-orbital apophysis and the two cuts are united by means of another cut in the frontal bone. Examine the characteristics of the meninges and parenchyma, as well as the circumvolutions.

JOINTS

Ligaments must be separated to observe joint surfaces, synovial membranes, as well as the color and the consistency of the synovial fluid.

NASAL TURBINATES

Make a cross-section between the first and second premolar (the reference is the commissure of the mouth).



CLASSIFICATION OF RHINITIS B STRAW Dr. B. Straw