

Case 1. Tissue from a turkey.

MICROSCOPIC DESCRIPTION: Non-feathered skin. There are multifocal areas of epidermal and dermal coagulative necrosis **(2pt.)**, which are characterized by a distinct loss of stain affinity, distinct hypereosinophilic of the overlying epidermis **(1pt.)**, congestion of dermal vessels **(1pt.)** with a loss of visualization of the vessel wall and endothelium, and marked edema of the superficial dermis. Within the deeper dermis, there is also marked edema **(1pt.)**, infiltration of moderate numbers of heterophils **(1pt.)** and histiocytes **(1pt.)**, and congestion of deep dermal vessels with multiple fibrin thrombi, and multifocal hemorrhage and fibrin **(1pt.)** admixed with numerous colonies of 2-4 rod-shaped bacilli**(1pt.)**. The remaining subcutis is markedly edematous with wide separation of fibrous connective tissue, vascular endothelium is markedly reactive **(1pt.)** (demonstrating the marked vascularity of the tissue), and there are numerous well-delineated areas of necrosis **(1pt.)** composed of a central area of edema, heterophils, histiocytes, cellular debris and bacteria surrounded by a dense band of reactive blood vessels, viable and degenerate heterophils, histiocytes, cellular debris, and numerous extra- and intracytoplasmic bacilli **(1pt.)**. Skeletal muscle fibers are variably-sized, multifocally hypereosinophilic with loss of cross-striations (degeneration, contain contractions bands and mineral (necrotic), and are infiltrated by low to moderate numbers of heterophils and histiocytes **(1pt.)**.

MORPHOLOGIC DIAGNOSIS: Non-feathered skin: Dermatitis and cellulitis, necrotizing and heterophilic, multifocal, severe, with multiple infarcts and numerous bacterial colonies. **(3pt.)**

CAUSE: *Pasteurella multocida* or *Erysipelothrix rhusiopathae* **(3pt.)**

O/C: **(1pt)**

WSC 2011-2012, Conference 21

Case 2. Tissue from a bobwhite quail.

Small intestine **(1pt.)**: There is multifocal extensive loss of mucosal crypts and villi **(2pt.)** with replacement by a coagulum of abundant fibrin **(2pt.)**, necrotic debris **(1pt.)**, and many colonies of robust rod-shaped **(1pt.)** 1x4 um bacilli **(2pt.)** which often form dense mats. Adjacent villi are multifocally eroded and ulcerated and remaining mucosal and crypt epithelial cells are often swollen and microvacuolated (degeneration) **(1pt.)** or brightly eosinophilic, angular and shrunken with pyknotic nuclei (necrosis) **(1pt.)**. The necrosis, as well as many heterophils and fewer histiocytes multifocally extend s transmurally **(2pt.)** through the submucosa, tunica muscularis, and serosa, where it is admixed with moderate hemorrhage, fibrin, edema, and cellular debris. Multifocally, adventitial vessels are markedly congested. The pancreas is diffusely autolytic.

MORPHOLOGIC DIAGNOSIS: Small intestine: Enteritis, necrotizing, transmural, multifocal, severe, with numerous robust bacilli. **(3 pt)**

CAUSE: *Clostridium colinum* **(3 pt)**

O/C: **(1pt)**

WSC 2011-2012, Conference 21

Case 3. Tissue from a chicken.

MICROSCOPIC DESCRIPTION:

Lung, bronchus: There is diffuse necrosis and loss of the tracheal mucosa **(1pt)** with replacement by moderate to large numbers of heterophils **(1pt)** and histiocytes **(1pt)**, lymphocytes occasionally forming lymphoid follicles, and rare plasma cells which expand the submucosa **(1pt)**, and are admixed with moderate hemorrhage, fibrin, edema **(1pt)**, and cellular debris. The cellular infiltrate is diffuse, but more prominent in perivascular areas. Similar cells and debris are admixed within abundant fibrin **(1pt)** to form a pseudomembrane which circumferentially overlies the ulcerated mucosa **(2pt)** Small stretches of remaining trachea epithelium remain, in which epithelial cells are flattened and attenuated **(1pt)**. Along the ulcerated mucosa, beneath the pseudomembrane, there are a few epithelial syncytial cells **(2pt)** containing up to 3 nuclei. Epithelial cells and syncytial, both viable and sloughed, occasionally contain round eosinophilic intranuclear inclusion bodies **(2pt)** that are 3-6 um in diameter, surrounded by a clear halo, and peripheralize the chromatin. **(1pt)**

MORPHOLOGIC DIAGNOSIS: Trachea: Tracheitis, fibrinonecrotic and subacute, diffuse, severe, with viral syncytia and intranuclear viral inclusion bodies. **(3pt)**

CAUSE: Gallid herpesvirus-1 **(3pt)**

O/C: **(1pt)**

WSC 2011-2012, Conference 21

Case 4. Tissue from a canary.

MICROSCOPIC DESCRIPTION: Non-feathered skin, subcutis, and bone from phalanx and claw (toe) **(1pt)**: There is profound and diffuse orthokeratotic hyperkeratosis **(2pt)**, and moderate epidermal hyperplasia **(1pt)**. Multifocally, within the keratin, predominantly adjacent to the epidermis, there are oval to elongate, 35 to 100um diameter clear spaces (mite tunnels) which frequently contain sections of arthropods **(1pt)** that are oval to elongate, range from 125 to 250um in diameter **(1pt)**, have an eosinophilic, spiny, chitinous **(1pt)** exoskeleton, jointed appendages, a hemocoel, striated muscle **(1pt)**, and focal accumulations of deeply basophilic 2um diameter nuclei (nervous system). Smaller nymph forms are scattered throughout more superficial layers of the excessive keratin **(1pt)**, and rare mite eggs with a spiny shell are present. Within the mite tunnels there are scattered accumulations of golden-brown, granular and globular material (mite feces) **(1pt)**. There are frequent intracorneal abscesses **(1pt)** composed of degenerate heterophils and eosinophilic cellular and karyorrhectic debris. Dermal vessels are surrounded large numbers of lymphocytes and lesser numbers of histiocytes and plasma cells which extend into the surrounding dermis **(1pt)** and to a lesser extent, the subcutis.

MORPHOLOGIC DIAGNOSIS: Skin of foot: Hyperkeratosis, orthokeratotic, diffuse, severe, with numerous intracorneal adult and immature mites, epidermal hyperplasia, and lymphohistiocytic dermatitis. **(4pt)**

CAUSE: *Cnemidocoptes jamaciensis* (*Cnemidocoptes pilae* OK) **(3pt)**

O/C: **(1pt)**