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SUMMARY

Two thousand buffaloes of both sexes and aged from 7 days to 10 years were examined at Cairo, Mit Ghamr, El-Wady EL-Gadid and Zagazig abattoirs beside the Clinics of the faculties of veterinary medicine, Cairo and Zagazig Universities, Mahalat Mousa Stud for buffalo breeding and El-Marg, during the period from 1998 – 2001 to detect the parasitic lesions in the different organs, and to look for the blood parasites. Specimens were collected from the liver, esophagus, intestine, rumen, abomasum, spleen lymph nodes lungs skeletal muscles, heart and skin of 92 animals and fixed in 10% neutral buffered formalin. Five micron thick paraffin sections were prepared, stained with hematoxyline and eosin, Van-Giesons, Giemsa and PAS, then examined microscopically. Blood smears were prepared from 50 buffaloes and stained with Giemsa to look for the blood parasites.

The obtained results, in this work, were classified into protozoal infections (Sarcocystosis “43.5%” Coccidiosis “3.25%” and theileriasis “20%”). Sarcocystosis showed macrocysts which appeared as milk white ellipsoid cysts embedded in the muscular tissues of the esophagus, peripharyngeal and perilaryngeal musculature beside the myocardium and the skeletal muscles. Microscopically, the macrocysts and microcysts of sarcocysts appeared in muscle fibers of the infected tissues. No evidence of inflammation was induced by the intact sarcocysts.

The coccidiosis-infected small intestine was generally mild. Macroscopically, it showed congestion beside thickened mucosa.

Microscopically, desquamation of the epithelial covering of the villi and congestion were found beside leukocytic infiltration mainly with lymphocytes, neutrophils, few eosinophils and macrophages in the lamina propria. Extremely few schizonts and gamonts were encountered in the enterocysts.

Examination of blood films for blood parasites revealed theilarial piroplasms in erythrocytes. Koch's blue bodies in lymphocytes.

The encountered trematodes included fascioliasis (23.9%) and paramphistomiasis (13%). Macroscopically, the infested livers with distomiasis were dark-brown and firm. The cut-surface of the liver showed large whitish areas of fibrosis. The hepatic capsule was thickened and opaque. The adult flukes were detected in the lumens of the bile ducts. The bile-ducts were large and prominent, their walls were thickened, tortuous and protruded above the hepatic surface. The wall of the gallbladder was thickened and showed petechial hemorrhages on its serosa. Microscopically, adenomatous hyperplasia of the epithelial lining of the bile ducts was seen. The affected bile ducts were surrounded with a thick zone of fibrous connective tissue. Some bile-ducts showed the adult fasciola in their lumina, where it induced chronic catarrhal cholangitis. The hepatic cells showed degenerative changes and coagulative necrosis. The portal area were occupied by fibrous tissue proliferation and hyperplasia of the bile ducts with some inflammatory cells. The hepatic capsule showed thickening by fibrous tissue infiltrated with round cells. The fibrous connective tissue was stained red by Van Gieson's.

The Paramphistomiasis affected reticulorumen showed, pear or flask shaped, pink or red mature flukes of paramphistomes attached to

their epithelial lining. The reticulorumen-folds were edematous. The mucosal surface of the duodenum was edematous, thickened, corrugated and covered with mucus. Microscopically, the rumen showed the parasites in its lumen. The ruminal epithelial lining was hyperplastic and showed ballooning degeneration and desquamation with eroded areas. The ruminal lamina propria was infiltrated with round cells and showed edema and hyalinization of fibrous tissue beside vacuolation of the muscle fibers. The duodenum showed chronic catarrhal duodenitis.

The encountered nematodes included ascariasis (22.8%) and trichostrongylus (10.8%). Ascariasis affected the intestine. Macroscopically, the intestine showed moderately congested intestinal segments. The lumen of the intestine was occluded with adult ascaris worms. The liver was large, congested and showed grayish-white or hemorrhagic foci under the capsule. The lungs were congested and edematous. Microscopically, the intestine showed necrosis and sloughing of the intestinal villi. Leukocytic infiltration especially with round cells and eosinophils was seen in the lamina propria. The lumina of the intestine contained round cells, red cells and desquamated epithelial cells. Some other cases showed the parasite in the intestinal lumen. The liver showed vacuolated hepatocytes and thickened walls of the blood vessels in the portal areas. The lungs showed small areas of hemorrhage and perialveolar capillaries were congested. Few round cells were present.

Trichostrongylus was embedded in the abomasal mucosa which showed diffuse congestion, and edema with slight mucus secretion. Erosions (2-5 mm in diameter) were scattered all over the pyloric and

fundic mucosa. Microscopically, the fundic mucosa showed destruction and desquamation of its epithelial cells with leukocytic infiltration, mainly eosinophils and round cells. The epithelial lining of the gastric glands suffered from mucinous degeneration with disappearance of the chief and parietal cells. Vacuolation of the muscle fibers was seen.

The encountered arthropods included pediculosis (32.6%) and acariasis (15.2%). Pediculosis infested the coat of the buffaloes. Macroscopically, the coat was rough and focally alopecic with marked pityriasis. The lice were present on the back, sides of the neck and base of the tail. The hide of the infested animals was damaged. Alopecia and dermatitis were seen. Microscopically, the epidermis was thickened with focal sloughing. Focal aggregation of inflammatory cells, especially eosinophils, were seen at the areas of the bitten areas by the lice. Mild edema and atrophic sebaceous glands were seen.

Acariasis was mostly seen on the root of the tail and on the sacral region of the infested buffaloes. Macroscopically, the affected skin showed excessive keratinization, hair loss and was covered by scabs. Microscopically, hyperkeratoses and parakeratosis with destruction of some parts of the keratinized layer were seen. The mites were seen in tunnel, formed in the stratum corneum. Some of the hair follicles showed necroses and appeared as empty cysts. Some sweat glands were cystic and lined by flattened epithelium. Hyalinization of the dermal connective tissue was seen.

The hemogram and some biochemical analysis were done in some buffaloes affected with mange, lice and theileria infected buffaloes.

It could be concluded that buffaloes are highly resistant to disease, however some protozoa (coccidiosis, sarcocystosis and theileriasis), trematodes (distomiasis and paramphistomiasis), nematodes (ascariasis and trichostrongyliasis) and arthropodes (pediculosis and acariasis) were encountered. Consequently, it is recommended to expand the buffalo farms because of their better qualities of milk and beef beside their high resistance to disease.