CURRICULUM VITAE

Abdel-Hamid Kamel Osman
Pioneering Founder of
Department of Cytology and Histology
Faculty of Veterinary Medicine
Suez Canal University
Ismailia, Egypt
Tel: (+20-64) 3207052 Fax: (+20-64) 3207052
E-Mail: ahkosman@vet.suez.edu.eg

1. Name: **OSMAN** (Last) **Abdel-Hamid** (First) **Kamel** (Middle)
2. Date of Birth: 8 / 8 / 1952
3. Sex: Male
4. Citizenship: Egyptian
5. Passport #: 4746061
6. Married Status: Married
7. Telephone: Home (+20-64) 3211140 Mobile (+20-122) -4282041

8. Education:

A. College of Vet. Med. Zagazig Univ. ***B.V.Sc.*** *May 1976*

B. College of Vet. Med., Alexandria Univ. ***M.V.Sc.*** *(6/11/ 1979)*
Histology (Histological studies of the ruminal mucosa, reticular mucosa, omasal and abomasal mucosa of the Egyptian water buffalo during ontogenetic development).Under the supervision of Prof. Dr. habil R. Berg, of the Humboldt University, Germany.

C. College of Vet. Med., Alexandria Univ. ***Ph. D.*** *(13/10/ 1981)*
Histology (Histological studies on the mucosa of the small and large intestine of the Egyptian water buffalo during the prenatal stage). Under the supervision of Prof. Dr. habil R. Berg, of the Humboldt University, Germany.

9. History of Professional Positions to Date:

A. August 8th, 2012 to present
Professor of Cytology & Histology, Faculty of Veterinary Medicine, Suez Canal University

A. December 4th 2002 to August 7th 2012
Professor of Veterinary Histology and Head of the Department of Cytology and Histology, Faculty of Veterinary Medicine, Suez Canal University

B. October 19th , 1999 to October 3rd ,2002
Vice Dean for student and educational affairs, Faculty of Veterinary Medicine, Suez Canal University.

C. June 17th , 1991 to October 18th , 1999
Professor of Veterinary Histology and Head of the Department of Cytology and Histology, Faculty of Veterinary Medicine, Suez Canal University.

Responsibilities: Teaching Cytology, Embryology and normal system histology of domestic animals; teaching histology of poultry and fishes, also graduate courses in specialty areas, particularly in ultrastructure. Postgraduate courses in Cytology, Embryology and Histology to

College of Vet. Med. (CVM) and non- CVM investigators. Have supervisory responsibility for the artistic activities of the College's students and provide consultation and assistance in this area. Have Supervisory responsibility for the Master and Ph.D. theses in the Department. Member of the Faculty Council and Postgraduate Research Committee. Research in microscopic anatomy of various species, applied histology and embryology. Recent research activity on the endocrine functions of the cardiomyocytes of the camel's heart. Research on in vitro embryo production.

D. April 18, 1987 to June 16, 1991
Associate professor of Histology and Head of the Department of Anatomy and Histology, Faculty of Veterinary Medicine, Suez Canal University.

Responsibilities: as above noticed

E. September 1st, 1986 to April 17, 1987
Lecturer (Assistant Prof.) of Vet. Histology, Faculty of Vet Med., Suez Canal University

Responsibilities: Supervising the creation and social organization of the department of Anatomy and Histology in addition to the previous duties.

F. December 29, 1981 to August 31, 1986
Lecturer (Assistant Prof.) of Vet. Histology, Faculty of Vet. Med., Alexandria University

Responsibilities: Taught histology and practical courses on the anatomy of the locomotory apparatus of domestic animals. Taught graduate courses in histology and ultrastructure. Served on several Ph.D. and Master students in histology. Conducted original investigations on the histogenesis of the small and large intestines of camel and liver of buffalo; pharmacohistological studies on the effect of pollen grains (Poljuven) on fertility of senile males and the effect of some anthelmintic drugs .

G. December 15, 1979 to December 28, 1981
Assistant lecturer of Veterinary Histology, Faculty of Vet. Med., Alexandria University

Responsibilities: Taught practical histology and anatomy for the undergrad students. Worked as a technician in the Histo-lab for the expression of the histology and embryology slide sets and the other educational instruments. Preparation of the Ph.D. thesis.

H. August 11, 1977 to December 14, 1979
Demonstrator of Veterinary Histology Faculty of Vet. Med., Alexandria University

Responsibilities: As above-mentioned in addition to the preparation of the Master thesis

10. Memberships:

A. The JSPS Alumni Association, 2008-present
B. The JICA Alumni Association, 2009-present
C. The Egyptian Society of Reproduction and Fertility, 1998
D. The Egyptian Society of Electron Microscopy, 1997
E. The World Association of Veterinary Anatomists, 1994-present
F. The American Association of Veterinary Anatomists, 1990-present.
G. The Egyptian Society of Histology & Cytology, 1978-present
H. Syndicate of the Egyptian Veterinarians, 1976-present

11. Participation on Committees

A. Department of Cytology & Histology.
Member of the Departmental Research Proposal Review team.

B. College of Veterinary Medicine
Member, Faculty Council
Member, Student affairs and education Committee

C. Suez Canal University
Advisor, Center of Electron Microscope

12. Citations

1- Recognized in Who's Who in Science and Engineering published by Marquis in USA as one of the leading scientists in the world since 2010.
2- Elected member, Board of Directors, JSPS-Alumni Association-Cairo, 2014
3- Foreign Nomination members for the "international Prize for Biology"- Japan Society for the Promotion of Science, 2016

13. Personal Awards & International Fellowships

1) Department of Biomedical Sciences and Pathobiology (ultrastructural lab.), Virginia/Maryland Regional College of Veterinary Medicine, Virginia Polytechnic Institute & State University, Blacksburg Virginia 24061 USA (October 1. 1989- February 28. 1990).
This visit was sponsored by a Peace Fellowship.
During that visit I have conducted original investigations on:
*Functional Morphology of the Ventricular Myocardium of Camel; Ultrastructure of Coronary Microvessels of Camel; Morphological Evidence for an Endocrine function of the Ventricular Myocardium
*Ultrastructure of the Stomach of Tilapid Fish from the Nile River. Senior with Dr. Thomas Caceci
*Liver Ultrastructure and A New Cell Type in the Japanese Newt. Senior with Dr. Carl J. Pfeiffer

2) Department of Biotechnology, Institut fur Tierzucht und Tierverhalten (FAL), Mariensee, 31535 Neustadt, Germany (July 1 to September 30, 1996).
This visit was sponsored by a fellowship from the German Academic Exchange Service (DAAD). I've participated in a project studying the effect of reducing the number of cells of the inner cell mass on the viability of in vitro produced bovine blastocysts, and the further effect on pregnancy rates. The work has been done in collaboration with Prof. H. Niemann Head of the Department.

3) Department of Biotechnology, Institut fur Tierzucht und Tierverhalten (FAL), Mariensee, 31535 Neustadt, Germany (June 3 to July 31, 1999).
This visit was sponsored by a grant from the Deutsche Forschungsgemeinschaft (DFG).
During that visit I received training in the following activities:

** Preparation and analysis of RNA and DNA from embryonic cells, using Northern and Southern blotting techniques.

** Transformation of bacterial cells with circular DNA plasmid.

** Isolation and purification of plasmid DNA using QIAGEN protocol.

**Transfection of eukaryotic cells using plasmid DNA and cultured fibroblasts.

** DNA fingerprinting.

4) Department of Basic Medical Sciences, School of Veterinary Medicine, Purdue University, USA (August 23 to October 13, 1999).

This visit was sponsored by a grant from UNESCO (the International Program in Veterinary Medicine) to the aforementioned University.
During that visit I was participating in the evolution of a computerized database on comparative Cell and Tissue Biology of Buffalo and Camel. I have had advanced training in Power Point displays, digital cameras, and image processing using Photoshop for multimedia development. I gave way to a workshop on digitizing video for internet applications.

5) Department of Molecular Epidemiology, Kobe University Graduate School of Medicine, 7-5-1, Kusunoki-cho, Chuo-ku, Kobe 650-007, JAPAN (July 1, 2000 to June 30, 2001).
This one year visit was sponsored by a grant (foreign researcher) from the Japanese government and Kobe University. I have conducted original research on: 1) Immunohisto/cytochemical studies on the evidence and localization of the atrial (ANP) and brain (BNP) natriuretic peptides in the myocardiocytes of the one-humped camel, 2) Apoptosis in the myocardium of the adult dromedary camel, an ultrastructural study. In summation to the research activities, I was likewise involved in teaching selected courses in Histology to the undergraduate medical students.

6) Department of Marine Bioscience, Ocean Research Institute, the University of Tokyo, 1-15-1 Minamidai, Nakano, Tokyo 164-8639, JAPAN (October 1 to November 30, 2003).
This visit was sponsored by a fellowship from the Japan Society for the Promotion of Science (JSPS). I have studied for the first time, in collaboration with Prof. Y. Takei Head of the Department, the molecular cloning of Atrial (ANP) and Brain (BNP) natriuretic peptides in the heart of camel.

7) Morphology Research Laboratory, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Virginia 24061-0442 USA (October 3 to October 17, 2008).
This visit was sponsored by the Suez Canal University to attend the workshop on the "recent methods of electron microscopy and molecular cell biology". During my visit I was able, together with Prof. Thomas Caceci, to examine the ultrastructure of the camel's pancreas.

8) Institute of Anatomy, Christian-Albrechts University of Kiel, Olshausenstr. 40, D-24098 Kiel, Germany (July 5 to August 30, 2010).
This visit was sponsored by a grant from the Deutsche Forschungsgemeinschaft (DFG). During that visit I studied, in collaboration with Prof. Rolf Mentlein, the ultrastructural characterization of the camel's blood-brain barrier. The fine structure of the camel's hepatic sinusoids was also looked into.

9) Departments of Parasitology and Pathology, Graduate School of Health Sciences, Kobe University, 7-10-2, Tomogaoka, Suma-ku, Kobe 654-0142, Japan (November 15 to December 30, 2010).
This visit was sponsored by a bridge-fellowship from the Japan Society for the Promotion of Sciences (JSPS). I have studied, in collaboration with Prof. Uga and Prof Kamoshida, the immunohistochemistry of the caspase-dependent and independent apoptosis in human colon.

10) Division of Anatomy and Developmental Neurobiology, Kobe University Graduate School of Medicine, Kobe 650-0017, Japan (June 30 to October 1st, 2011).
This visit was sponsored by the Japanese Ministry of Education and Kobe University Graduate School of Medicine. I have achieved a novel study on the immunhistochemical expression of molecular biomarkers of apoptosis and autophagy in normal tissues of camel.

11) Institute of Anatomy, Christian-Albrechts University of Kiel, Olshausenstr. 40, D-24098 Kiel, Germany (August 24 to October 20, 2012).
This visit was sponsored by a grant from the German Academic Exchange Service (DAAD). During that visit I studied, in collaboration with Prof. Rolf Mentlein the immunohistochemical mapping of the Brain Natriuretic Peptide (BNP) in the contractile and Purkinje myocytes of the ventricular myocardium of camel.

12) Lab of Sem Cell Biology and Regenerative Medicine, Department of Biomedical Sciences and Pathobiology, College of Veterinary Medicine, Virginia Tech, Blacksburg, Virginia 24061-0442 USA (August 11 to December 8, 2015).
This visit was sponsored by a grant from the USAID (Cairo Initiative Fellowship). I studied, in collaboration with the stem cell research team, (1) wound repair and vasculogenesis in C57BL/6 and MRL/MpJ strains of Mus musculus, and (2) Ephrin A receptor 4 negatively regulates toe-regeneration of transgenic mice.

14. REFERENCES:

Ibrahim Fares, BVSc, MVSc. PhD

Dean of the faculty of Veterinary Medicine, Suez Canal University, Ismailia, Egypt

Thomas Caceci, PhD

Prof.. Dept. of Biomedical Sciences and Pathobiology, College of Vet. Med., Virginia Polytech., Blacksburg VA, USA

Carl J. Pfeiffer, PhD
Prof., Dept. of Biomedical Sciences and Pathobiology
College of Vet. Med. Virginia Polytech., Blacksburg VA, USA

Shigeaki Sato, PhD
Director, Hyogo Prefectural Kakogawa Hospital,
770-1, Awazu, Kakogawa-cho, Kakogawa, Hyogo 675-8555, Japan

14. Significance of Research Activities:
My current area of engagement is the investigation of the apoptotic and autophagic markers in the brain, heart and liver of the camel as a mammalian model living under harsh environmental conditions. The ultrastructural apoptotic alterations (plasmalemmal blebbing, nuclear chromatin margination and condensation, nucleolar disruption, mitochondrial swelling and cristal disorganization, cytoskeletal lysis and apoptosome formation) together with the immunohistochemical mapping of caspase-dependent and independent apoptotic markers, and autophagic markers might be of special value to explore the relationship between food deprivation and thirst for long time and heat stress on the cell survival or death in the absence of a clear cut etiology. The in vitro embryo production in bovine and fishes is also another

area of interest. I have a strong bent for the histological aspects of the prenatal life of buffalo and camel, and have published several papers in international and local journals. These papers have mostly dealt with the histogenesis of the digestive and uro-genital systems. These papers have been cited by several investigators in this field. I'm also interested in the investigation of the structure-function relationship of the myoendocrine cells of the heart of camel (Camelus dromedarius). These cells represent a fairly source for cardiac hormones which regulate blood pressure and blood volume in some animal species. Therefore, acquiring knowledge about these hormones in camel is of very special importance, because this desert animal has a precise tolerance to thirst and desiccation in hot climate and water-deficient soil. The detection of these hormones in the camel's heart will discuss distinctively their possible role in cardiovascular, renal and hepatic functions amongst both healthy and diseased conditions. I am also interested in studying the immunohistochemical co-localization of natriuretic peptide family and adrenomedullin in cardiac and non-cardiac tissues in desert-dwelling mammals subjected to prolonged thirst and starvation. Aside from myoendocrine cells and the possible role of their hormones, I have special interest on the ultrastructure of the camel's cardiac myocyte surface structures. The question of force transmission in myocardium is important to understanding the etiology of congestive heart failure, and the mechanical interconnections of cardiac myocytes to fibrillar and nonfibrillar components is not well understood. By visualizing the distribution of known connector macromolecules on the myocyte surface, with relation to intercellular collagen fibers, it will be possible to shed light on this question.

The importance of aquaculture and mariculture to maintaining food supply at adequate levels is very great. Large-scale farming of Nile River tilapia is already a developing industry in Egypt. Therefore, my investigations into the ultrastructure of the digestive system of this species aim to know the response of these tissues to certain insults in further studies.

LIST OF PUBLICATIONS

Presented by

Abdel-Hamid Kamel Osman

Papers in Refereed Journals and Presentations:

Metawally S, Farouk SM, **Osman AHK**. 2019. Molecular cloning and cellular expression of the cholesterol synthesizing enzymes during the prenatal development of the optic nerve in the dromedary camel (Camelus dromedaries). Acta Histochem. 121: 584-594

Osman AK, Minamino N, Marei HE. 2019. Identification and mapping of brain natriuretic peptide in the normal ventricular myocardium of a desert-dwelling mammalian model, the camel (Camelus dromedarius): Immunohistochemical and ultrastructural study. J Cell Physiol. 234: 3067-3077

Osman AK, Abbott LC, Ahmed AAM. 2018. Survey of nuclear progesterone receptor expression in the uterus of the cyclic and pregnant camel (Camelus dromedarius). Anat Histol Embryol. 47: 544-550

Osman, A-H K, Shintani, M., Caceci, T. 2018. Immunohistochemical expression of apoptosis-related biomarkers in normal tissues of camel (Camelus dromedaries): A survey in a desert-dwelling mammalian model. Acta Histochem. 120: 385-394

Osman AK, Shintani M. 2018. Autophagy in normal tissues of camel (Camelus dromedarius) with focus on immunoexpression of LC3 and LC3B. Biotech Histochem. 93: 557-564

Abdel-Hamid K. Osman, Amal A.M. Ahmed. 2018. Immunohistochemical Survey of Endometrial Estrogen Receptors in the Cyclic and Pregnant Camel (Camelus dromedarius). Annals of microscopy (Singapore), 17; 45-54

Kwiatkowski A, M. Piatkowski , M. Chen, L. Kan, Q. Meng , H. Fan , **A.H. Osman** , Z. Liu, B. Ledford , J.Q. He . 2016. Superior angiogenesis facilitates digit regrowth in MRL/MpJ mice compared to C57BL/6 mice. Biochem Biophys Res Commun. 473: 907-912

Kwiatkowski A., M. Piatkowski, M. Chen, L. Kan, Q Meng, **A.H.K**. **Osman,** and J.Q. He. 2015. Wound Repair and Vasculogenesis in C57BL/6 and MRL/MpJ Strains of Mus musculus. The 17th Annual Conference of the North Carolina tissue Engineering and Regenerative Medicine Society. Winston-Salem, NC 27101, U.S.A.

Osman A.H., S.M. Farouk, H. Eidaroos, L.C. Abbott, and A.A. Ahmed. 2014. Prenatal Metanephrogenesis of The Camel: Morphological Evidence of Epithelial-Mesenchymal Interaction. Anat Histol Embryol. 43: 141-152

Farouk, S.M., **A.H.K. Osman**, H. Eidaroos, and S.M.S. Ammar. 2013. Prenatal histogenesis of uterine cervix of the one-humped camel (Camelus dromedarius). Global Anim. Sci. J. 1: 1172-1194

Osman, A.H.K., H. Eidaroos, and E. Metwally.2013. Histogenesis of the Camel Retina (Camelus dromedarius). Cell Dev Biol 2: 109. doi:10.4172/2168-9296.1000109

Farouk, SM, **A.H.K. Osman**,and H. Eidaroos.2012. Histogenesis of the Vagina of the One-Humped Camel (*Camelus Dromedarius*): Morphological Evidence of the Histochemical Aspects. Cell Dev Biol 1:105. doi:10.4172/cdb.1000105

Osman, A.H.K., S. Sato, T. Caceci, and D.C. Pfeiffer. 2010. Apoptosis in the myocardium of the adult dromedary camel: Ultrastructural characterization. Anat. Histol. Embryol. 39: 34-41

Osman, A.H.K., S.M. Farouk, H. Eidaroos, and A.A.M. Ahmed. 2008. Histogenesis of camel mesonephros. Suez Canal Vet Med J. 13: 377-386

Abdelalim EM, **A.H.K**. **Osman**, T. Takada, R. Torii, I. Tooyama. 2007. Immunohistochemical mapping of natriuretic peptide receptor-A in the brainstem of Macaca fascicularis. Neuroscience. 145(3):1087-1096.

Pfeiffer, C.J., **A.H.K. Osman,** and D.C. Pfeiffer. 2006. Ultrastructural analysis of the integument of a desert-adapted mammal, the one-humped camel (Camelus dromedarius), Anat. Histol. Embryol. 35(2):97-103.

Amal A. Mokhtar and **A.H.K. Osman**. 2006. Ultrastructure of the camel's pulmonary alveoli with special reference to the air-blood barrier. Assiut Vet. Med. J. 52: 1-18.

Amal, A.M. Ahmed, E.A.M. Mousa, **A.H.K. Osman**. 2005. Anatomical and histological studies on the nasal cavity of the dromedary camel (Camelus dromedaries). 4th Int. Sci. Conf., Mansoura Univ., Egypt, 815-840.

Osman, A.H.K., S. Yuge, S. Hyodo, S. Sato, S. Maeda, H. Marie, T. Caceci, N. Birukawa, A. Urano, K. Naruse, and Y. Takei. 2004. Molecular identification and immunohistochemical localization of atrial natriuretic peptide in the heart of the dromedary camel (Camelus dromedaries). Comp. Biochem. Physiol. (A) 139 (4): 417-424.

Osman, A.H.K., S. Sato, and T. Caceci. 2002. Apoptosis in the myocardium of the adult dromedary camel. Annual scientific meeting of FASEB, New Orleans, USA.

Osman, A.H.K., A.A.M., Ahmed, and T. Caceci. 2000. Immunolocalization of relaxin in the corpus luteum of the dromedary camel (Camelus dromedarius). Kobe J. Med Sci. (Japan). 46: 245-463.

Elseweidy, M., S., Ibrahiem, S., Saleh, **A.H.K., Osman**, and D., Abo Elmaaty. 2000. Effect of certain natural products and iron chelating agents on iron haemostasis of STZ-diabetic iron overloaded rats. Arab J. Pharmaceut. Sci. 1: 5-28.

Osman, A.H.K., A.A.M., Ahmed, and T. Caceci. 2000. Immunolocalization of relaxin in the ovary of the dromedary (Camelus dromedarius). Annual scientific meeting of FASEB, San Diego, U.S.A.

Osman, A.H.K., A.A.M., Ahmed, S.A., Smith and T., Caceci. 1998. Comparative histology and histochemistry of the esophagus of some marine fishes. Annual scientific meeting of the American Association of Veterinary Anatomists. Virginia Polytech., Blacksburg VA, USA.

Eidaroos, H., M.N., Attia and **A.H.K, Osman**. 1997. Carbohydrate histochemistry, cholinergic innervation and enzymatic reactions in the nasal mucosa of goat with special refernece to the olfactory mucosa ultrastructure. Egyp. J. Histol. 20: 121- 140.

Marei, H. and **A.H.K. Osman**. 1996. An ultrastructre and immunohistochemical study on the chicken's endocrine heart. Assiut Vet. Med. J. 35: 176-187.

Osman, A.H.K. 1995. Recent Advanced in Functional Histology; Part II: Microscopic Anatomy (lecture notes). Suez Canal University Press.

Osman, A.H.K., H., Geniedy and H., Eidaroos. 1995. A histochemical study on the effect of exogenous growth hormone, insulin and thyroid hormone on the growth and differention of the digestive tract of Oreochromis niloticus. Annual meeting of the Egyptian Society Of Histology and Cytology, Cairo.

Osman, A.H.K. 1994. Recent Advances in Functional Histology; Part I: Cell and Tissue Biology (lecture notes). Suez Canal University Press.

Marei, H.; T., Caceci and **A.H.K. Osman.** 1993. Ultrastructure and Immunohistochemical study of the Avian Endocrine heart. Annual scientific meeting of the American Association of Veterinary Anatomists, University of Minnesota, USA

Marei H., **A.H.K. Osman** and T. Caceci. 1993. Histological approach to the Myoendocrine cells of the camel's heart. Annual scientific meeting of the American Association of Veterinary Anatomists, University of Minnesota, USA

Osman, A.H.K. and T. Caceci. 1991. Histology of the stomach of Tilapia nilotica from the River Nile. J. Fish Biol. 38: 21 1-223.

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Osman, A.H.K. and T. Caceci. 1990. Histology of the stomach of Nile River Tilapia. American Association of Veterinary Anatomists, July, Texas A&M Univ. USA.

Osman, A.H.K. and S.M. Abuzaid. 1990. Fine structure of the small intestinal epithelium of Bolti fish (Tilapia nilotica). New Egyp. J. Med. 4: 1271-1276.

Osman, A.H.K. 1990: The effect of seasonal changes on the structure of the intratesticular excurrent ducts of goat in Sinai. Assiut Vet. Med. J. 24: 1-14.

El-Nahla, S.M. and **A.H.K. Osman**. 1990. Some gross anatomical studies on the prenatal morphological features of the spinal cord of the one-humped camel (Camelus dromedarius). New Egypt. J. Med. 4: 11331136.

Abuzaid, S.M., **A.H.K, Osman**, S.M. El-Nahla and M.S. Nada. 1990. Prenatal Development of the mandibular salivary glands of the one-humped camel. Annual conference of the Egyptian Anatomical Society, Cairo.

Osman, A.H.K., S.M. Abuzaid, H. Eidaroos and H. Marei. 1990. Histogenesis of the fetal uterus of the Egyptian water buffalo (Bos bubalus L.). Zagazig Vet. J. 18: 167-180.

Abuzaid, S.M., S.M. El-Nahla, **A.H.K. Osman** and R. Metwally. 1990. "Prenatal development of the ovaries of the buffalo. I; Gross morphology". Zagazig Vet. J. 18: 8-24.

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Osman, A.H.K., S.M. Abuzaid and S.M. El-Nahla. 1989. The role of epithelio-mesenchyma interaction in the organogenesis of the parotid salivary gland of the camel fetus. Assiut Vet. Med. J. 22: 1-7.

Abuzaid, S.M., S.M. El-Nahla, **A.H.K. Osman** and M.Erasha. 1989. Some gross anatomical studies on the morphology and arterial segmentation of the spleen of the lion (Panthera leo) in Giza zoological garden. Assiut Vet. Med. J. 22: 8-13.

Osman, A.H.K. and A. El-Bahrawy. 1988. A morphological study on the integument of Varanus griseus in Sinai. Alex. Univ. J. Agric. Sci. 9: 561-575.

Osman, A.H.K., S.M. Abuzaid and S.M. El-Nahla. 1988. Histological observations on the integument of Clarius lazera. Annual conference of the Egyptian Society of Histology and Cytology, Cairo

Moustafa, I.A., E.I. Enany, **A.H.K. Osman** and M.E. Amin. 1986. Development of the mesonephros of the Egyptian water buffalo. Alex. J. Vet Sci. 2: 1-9.

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Von R. Berg, A.S.K. Hemmoda, **A.H.K. Osman** and A.M. Kassem. 19&5. Untersuchungen uber die struktur intramuraler koronaterien der linken herzentrikelwand von zwergziegen und schafen bei unterschidlicher haltungs form (Studies into structures of intramural coronary arteries of left papillary muscles and left cardiac ventricle wall in pigmy goat and sheep in response to differentiated keeping regime). Mb. Vet. Med. 40: 275-277.

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Osman, A.H.K., A.S. Dougbag and A. Kassem. 1984. Organogenesis of the fetal liver of the Egyptian water buffalo (Bos bubalus L.). Annual conference of the Egyptian Society of Histology and Cytology, Cairo.

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Osman, A.H.K., A. Dougbag and R. Berg. 1983. Studies on the tunica mucosa of the small and large intestines of camel (Camelus dromedarius).

I. Histogenesis of the small intestinal mucosa. Z. mikrosk. anat. Forscih., Leipzig 97: 993-999.

II. Histogenesis of the colonic mucosa. Z. mikrosk. anat. Forsch., Leipzig 97:1000-1004.

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