



MASTERCLASSES

(Tuesday May 21, 2024 – Bijloke, Ghent)

EXOTIC ANIMAL ENDOSCOPY PART 1: EQUIPMENT AND SMALL MAMMALS

Stephen Divers (*University of Georgia, Athens, USA*) & **Scott J. Stahl** (*Stahl Exotic Animal Veterinary Services Fairfax, VA*)

(21 May 2024, 08:00 – 10:00)

Elevate your exotic animal diagnostic and surgical skills to the next level by introducing endoscopy to your practice. Whether you are a private practitioner, zoo or wildlife vet, intern, resident, specialist, or academician, these masterclasses will introduce you to the wonderful world of minimally-invasive diagnosis and endosurgery in exotic patients. Learn how to prioritize equipment purchases, and how to market these exciting new services to your clients. Learn how to endoscope the respiratory, gastrointestinal, urogenital and coelom of birds, reptiles, and small mammals, including visceral biopsy, and basic endosurgery. Learn why you absolutely need endoscopy in your exotic animal practice.

PART 1: EQUIPMENT AND SMALL MAMMALS

This is the first of two 2hr masterclasses that focuses on essential and recommended equipment selection and handling, followed by an introduction to small mammal endoscopy (including oral, nasal, ear, and laparoscopic ovariectomy). There will also be a concurrent competition with the winner receiving a free place on the acclaimed 16 hr on-line virtual endoscopy course offered by the University of Georgia.

EXOTIC ANIMAL ENDOSCOPY PART 2: REPTILES AND BIRDS

Stephen Divers (*University of Georgia, Athens, USA*) & **Scott J. Stahl** (*Stahl Exotic Animal Veterinary Services Fairfax, VA*)

(21 May 2024, 10:30 – 12:30)

Elevate your exotic animal diagnostic and surgical skills to the next level by introducing endoscopy to your practice. Whether you are a private practitioner, zoo or wildlife vet, intern, resident, specialist, or academician, these masterclasses will introduce you to the wonderful world of minimally-invasive diagnosis and endosurgery in exotic patients. Learn how to prioritize equipment purchases, and how to market these exciting new services to your clients. Learn how to endoscope the respiratory, gastrointestinal, urogenital and coelom of birds, reptiles, and small mammals, including visceral biopsy, and basic endosurgery. Learn why you absolutely need endoscopy in your exotic animal practice.

PART 2: REPTILES AND BIRDS

The exotic animal endoscopy masterclasses represent an introduction to diagnostic and surgical endoscopy in reptiles, birds and small mammals. This is the second of two 2hr masterclasses that focuses on reptile and avian endoscopy, including clinical examples involving the coelom, respiratory, gastrointestinal, and urogenital systems. There will also be a concurrent competition with the winner receiving a free place on the acclaimed 16 hr on-line virtual endoscopy course offered by the University of Georgia.



RAPTOR NUTRITION THEORY AND PRACTICAL APPLICATIONS

Neil Forbes (*Homer Forbes International Ltd, Helensburgh, UK*)

(21 May 2024, 13:30 – 15:30)

Diseases of captive raptors related to the food they have consumed are many and varied, and form a large percentage of the cases presented to Veterinary Surgeons in practice.

This Masterclass highlights the basic theoretical principles of raptor nutrition, covering deficiencies, excesses, contaminations, obstructions, together with the risks associated with ingestion of foods of varying provenance.

The situations in which everything does go wrong, how to avoid clinical disease, how to recognise and treat it when it does occur. Feeding raptors in special / challenging circumstances will be addressed.

REPTILE AND AMPHIBIAN NUTRITION FOR PRACTICING VETERINARIANS

Thomas Boyer (*Pet Hospital of Penasquitos, San Diego, USA*)

(21 May 2024, 16:00 – 18:00)

Let's face it, most reptilian diseases are rooted in shaky nutrition. Veterinarians should be knowledgeable and educate clients to feed reptiles properly, to avoid, and treat, disease. Be knowledgeable, educate your clients, so that your patients survive and keep coming back! This first part of this masterclass will focus on insectivores and carnivores. If you see reptiles, do not miss these lectures, they will transform your practice! Eradicate nutritional diseases in reptiles and amphibians! This second part will focus on herbivores and omnivores. Most reptilian diseases are rooted in poor nutrition. Veterinarians should be knowledgeable and educate clients on how to feed reptiles to avoid and treat disease. Stay ahead of the curve and educate your clients, so your patients survive and keep coming back! If you see reptiles, do not miss these lectures, they will transform your practice! Eradicate nutritional diseases in reptiles!

VULTURE MEDICINE AND SURGERY

John Chitty (*Private Consultancy, Salisbury, UK*)

(21 May 2024, 08:00 – 10:00)

Old World and New World vulture species face threats worldwide and are of major conservation significance. Many of these species have previously been extremely common but have suffered major population crashes. Veterinarians working with these species – whether in zoos, rehabilitation, or as part of conservation projects- need an understanding of the unique biology of these birds in order to provide successful treatment and outcomes. Furthermore, their intelligence and complex social structures require an understanding of their behavior and behavioral diseases they may experience. These differences are highlighted by the sensitivity of some of these species to commonly used drugs, especially non-steroidal anti-inflammatory drugs (NSAIDs).



This masterclass will provide information about the natural history as well as rearing and husbandry of Old and New World vultures encountered in managed care, handling and examination, behavioral conditions (i.e., self-mutilation syndromes), common conditions, diagnostic techniques and clinical pathology, therapeutics, analgesia, anesthesia and surgical techniques, all while highlighting similarities and difference between vultures and other raptors.

VETERINARY CARE OF BREEDING FLOCKS OF BIRDS OF PREY AND PSITTACINES – TIPS AND TRICKS TO HELP YOUR CLIENT

Michael Lierz (*Justus-Liebig-University Giessen, Giessen, Germany*)

(21 May 2024, 10:30 – 12:30)

Captive breeding has contributed to the successful restoration of many species of birds of prey or psittacines. Avicultural techniques breeding include double clutching, direct fostering, cross fostering, hatch and switch, hacking, imprinting and assisted reproduction techniques such as semen collection and artificial insemination. However, reproductive failure is a common occurrence. Failures are mainly related to management problems, including hygiene measures, food quality issues, breeding flock structure, or to individual health issues of breeding birds. These may result in non-egg laying females, low quality eggs or infertile eggs due to male infertility. Therefore, veterinary care of breeding collections is extremely important and this masterclass provides an overview of the veterinary involvement in birds of prey and psittacine breeding project. Insight view into the most common management problems are provided, basic aviculture techniques explained and state of the art as well as cutting edge assisted reproduction techniques in avian reproduction are described, which belong to the veterinary field and allows the veterinarian to expand his field of expertise and service to the clients. This includes prophylactic health measures, preparation of birds and cages, semen collection, evaluation and cryopreservation techniques, artificial insemination and ex-ovo fertilisation as the latest development.

INVERTEBRATE FIRST AID

Sarah Pellett (*Byre Vets, Peterborough, UK*) & **Michelle O'Brien** (*Wildfowl and Wetlands Trust, Slimbridge, UK*)

(21 May 2024, 13:30 – 15:30)

Invertebrate keepers are now seeking veterinarians to treat invertebrates both in zoological and private settings. In an emergency, specific treatment may urgently be required, such as in the case of a fall as preventing haemolymph leakage is essential. The aim of this masterclass is to firstly discuss and then demonstrate first aid techniques that can be applied in invertebrate medicine. These include management of haemolymph loss, autotomy in theraphosids, wound repair, snail shell repair and ectoparasite removal. First aid stations will be set up with models of invertebrates to demonstrate and practice first aid



techniques. These will include snail shells to practice shell repair and models of tarantulas to demonstrate how to achieve autotomy safely. The aim of this workshop is to instil confidence when dealing with invertebrate patients and practice useful first aid techniques when required.

This should help to increase the welfare of our invertebrate patients and allow for treatment of some of the most common presentations. More interest in invertebrate medicine is encouraged to expand our knowledge and understanding of invertebrate care.

CLINICAL AND SYSTEMATIC APPROACH TO BEHAVIOUR PROBLEMS IN EXOTIC ANIMALS

Marion Desmarchelier (*Université de Montréal, Saint-Hyacinthe, Canada*)

(21 May 2024, 16:00 – 18:00)

A biting ferret, a feather-picking cockatoo, a circling turtle, or a cougar licking his tail...

These cases all benefit from a systematic approach, in order to obtain an accurate differential diagnosis and be able to design a management plan. This masterclass will provide participants with a structure that can apply to any behavioural consultation. We will first practice to analyse the inappropriate behaviour, review videos and ask the appropriate questions, going from all antecedents to the ultimate consequences, to identify the first keys to the underlying causes. Then we will see how to obtain a thorough, systematic, and detailed history of the case. And finally, we will learn to investigate all potential medical conditions that could be associated with unwanted behaviours. Appropriately collecting all this information will allow us to create a therapeutic plan for each case, from behaviour modification to medical treatment and environmental changes. This masterclass will be entirely based on clinical cases from a large variety of species and presentation. Participants are welcome to submit their own cases for practice and discussion.

RABBIT ABSCESS PRESENTATIONS, COMPLICATIONS, AND MANAGEMENT

Lauren Thielen (*Cornell University Hospital for Animals, Ithaca, USA*)

(21 May 2024, 08:00 – 10:00)

Abscesses in rabbits are caseous in nature and therefore often require surgical intervention with a reported frequent recurrence. Abscess formation in rabbits occurs commonly with periapical abscessation secondary to dental disease, retrobulbar abscesses, otitis media, and subcutaneous abscesses. Relevant literature pertaining to managing these complex cases will be utilized to develop an evidence-based approach. A proper diagnostic and therapeutic plan to address abscesses in rabbits is critical to achieving optimal treatment results. Medical and surgical management of abscesses in rabbits and the associated wound care strategies will be discussed, including a step-by-step demonstration of surgery, marsupialized wound management, and prediction and discussion of outcomes as wound care progresses.

RABBIT DERMATOLOGICAL DISEASE – A CLINICIAN'S PERSPECTIVE OF SKIN DISEASE IN PET RABBITS

Jenna Richardson (*Hospital for Small Animals, Edinburgh, UK*)

(21 May 2024, 10:30 – 12:30)



Skin disease in rabbits is an extremely common clinical finding, with studies showing incidences as high as one in three rabbits displaying abnormal dermatological findings, when presented for standard veterinary assessment. Despite this high prevalence, skin complaints are often overlooked by owners and their impact on the rabbit's welfare frequently underestimated.

Many skin complaints are discovered incidentally, during routine health checks, and it is important that clinicians act upon these findings. Dermatological issues can range from common conditions e.g. pododermatitis, with incidents of up 94% reported in the pet rabbit population, to the more unusual presentations, e.g. paraneoplastic syndrome with sebaceous adenitis secondary to thymoma.

While ectoparasite infestations are the leading cause of skin disease in rabbits, often they can be secondary to more serious systemic disease. Assessing skin health in correlation with general health is therefore of key importance.

This masterclass session will:

- Provide an overview of the most common parasitic, bacterial, fungal, viral, infectious, neoplastic and autoimmune skin diseases that affect pet rabbits, using case examples
- Describe the cost effective and readily performed diagnostic tests that can assist in confirming a diagnosis
- Review the available pharmaceutical products currently available and their suitability for use in rabbits
- Provide solutions with management strategies for common chronic skin problems like pododermatitis, urinary scald and moist dermatitis

By the end of this masterclass you will feel equipped to tackle skin disease in rabbits in a manner both rewarding to both the veterinarian and rabbit patient.

LOCOREGIONAL ANAESTHESIA IN SMALL MAMMALS: A CLINICAL APPROACH

Giulia Bersanetti (*Centro Veterinario Specialistico, Rome, Italy*)

(21 May 2024, 13:30 – 15:30)

Locoregional anaesthesia is a useful aid for perioperative pain management and is widely described in dogs and cats. Some techniques have also been reported in exotic species, including small mammals, but they are mostly sparsely described. Furthermore, most studies report a cadaveric approach to locoregional blocks, which does not allow any clinical assessment as regard to both the effectiveness and possible side effects.

The masterclass deals with the use of locoregional anaesthesia in small mammals like rabbits, chinchillas, hedgehogs and meerkats which underwent surgical procedures. The aim is to describe the basic equipment required, the techniques applied, their effectiveness, their usefulness and potential side effects and complications in a clinical setting. In order to overcome the size-related limits of the applicability of the techniques as described in dogs and cats, a ultrasound-guided or electrostimulation-guided approach is described for the localization of the correct injection point.

Examples of described technique include: ultrasound-guided brachial plexus block in a rabbit for a forelimb amputation, electrostimulation-guided sciatic and femoral nerves block with a pre-iliac approach in a rabbit and in a hedgehog for hindlimb orthopaedic surgery, electrostimulation-guided lumbosacral plexus



and femoral nerve block with pre-iliac approach in a meerkat and electrostimulation-guided brachial plexus block in a chinchilla for forelimb amputation.

The use of locoregional anaesthesia allows to provide an adequate analgesic plane for the selected procedure, reducing the dose of systemic drugs for anaesthesia and pain relief during the procedures and during recovery.

HOW TO PERFORM A SAFER RABBIT ANAESTHESIA

Nicola Di Girolamo (*Cornell University, Ithaca, USA*)

(21 May 2024, 16:00 – 18:00)

Rabbit anaesthesia is drastically different than anaesthesia of domestic carnivores. Rabbits have a strikingly higher peri-anaesthetic mortality as compared to dogs and cats. One of the challenges to select proper anaesthetic protocols in rabbits is the fact that most published research studies include populations limited in numbers and procedures, making difficult to generalize their results to clinical patients. In the current presentation we are going to discuss available protocols, including the ones that have been used with greater success by the authors, and best practices, such as reducing stress, multimodal analgesia, airway and vascular access, to minimize the risk of anesthetic-related mortalities in rabbits.

REPTILE CARDIOLOGY

Dan Johnson (*Avian and Exotic Animal Care, Raleigh, USA*)

(21 May 2024, 08:00 – 10:00)

Reptiles are generally considered less highly evolved than mammals. It follows that a three-chambered reptilian heart is less complex than a four-chambered mammalian heart. However, what reptiles lack in chamber number, they more than make up for in increased structural and functional complexity. Reptile cardiac function is NOT simpler than mammalian heart function, and it is worth some extra effort to understand what is going on. This lecture will cover crocodylian and non-crocodylian cardiac anatomy, physiology, and how they relate to reptilian anesthesia and disease treatment.

ANATOMY, PHYSIOLOGY, AND DISORDERS OF THE SPECTACLE, SUBSPECTACULAR SPACE, AND ITS LACRIMAL DRAINAGE SYSTEM IN SQUAMATES

Tom Hellebuyck (*Ghent University, Merelbeke, Belgium*)

(21 May 2024, 10:30 – 12:30)

Various squamate species have completely fused eyelids that make up a transparent spectacle. The spectacle is a continuation of the integument that is renewed with each shedding cycle and creates a narrow subspectacular space that is filled with lacrimal fluid. The lacrimal fluid is secreted by the Harderian gland. The features of the spectacle and its lacrimal drainage system are an illustration of the enormous variation of the morphological adaptations that are seen in reptiles and one of the most distinguishable traits of snakes and most gecko species. Whereas ocular disease in squamates with a spectacle is less frequently seen in practice, disorders of the spectacle and the subspectacular space are commonly encountered. Especially in snakes, the complexity of the tortuous course of the lacrimal duct varies among species. This variation may predispose certain snake species to the development of disorders of the



subspectacular space, in particular pseudobuphthalmos and subspectacular infections and has implications towards the treatment and prevention of these disorders.

In order to apply an adequate diagnostic and therapeutic approach for these conditions, a sound knowledge and understanding of the anatomical and physiological peculiarities of the spectacle, subspectacular space, and lacrimal drainage system are fundamental.

The anatomy and disorders of the spectacle and subspectacular space in snakes and lizards will be discussed in this masterclass. Novel insights concerning the etiopathogenesis and treatment of several of these disorders will be emphasized. The clinical pathology of these disorders as well as diagnostic and therapeutic approaches will be fully illustrated.

AVIAN INFLUENZA IN BACKYARD POULTRY AND PET, ZOO AND WILD BIRDS

Gunther Antonissen & Natalia Furman (*Ghent University, Merelbeke, Belgium*)

(21 May 2024, 13:30 – 15:30)

Avian influenza is a highly contagious viral disease that occurs primarily in poultry and wild water birds. It is either high or low pathogenic (HPAI/LPAI) depending on the molecular characteristics of the virus involved and its ability to cause disease and mortality in chickens. The 2021–2022 highly pathogenic avian influenza (HPAI) epidemic season is the largest observed in Europe so far. The latest data from the joint European Food Safety Authority, European Centre for Disease Prevention and Control and European Union reference laboratory report show a total of 2,467 outbreaks in poultry, 48 million birds culled in the affected establishments, 187 detections in captive birds, and 3,573 HPAI events in wild birds. The recent changes in the ecology and epidemiology of avian influenza are characterized by its spread to new geographical regions, mortality in unusual birds, and alarming rise in mammalian cases. Veterinarians are therefore urged to be watchful for this notifiable disease. In this masterclass we highlight the clinical signs and gross pathology related to HPAI and LPAI observed in backyard poultry and pet, zoo and wild birds. Besides, actions to be taken in case of an outbreak and preventive measures such as biosecurity and possible vaccination strategies will be discussed.

AVIAN GERIATRIC DISEASES

Yvonne van Zeeland (*Utrecht University, Soesterberg, Netherlands*)

(21 May 2024, 16:00 – 18:00)

As a result of improved psittacine husbandry and nutrition, and advances in the diagnosis and treatment of diseases, life expectancy of captive parrots has substantially increased over the years. This in turn has led to a growing number of elderly birds seen in veterinary practices and associated with it a higher incidence of geriatric-related diseases such as cataracts, cardiovascular disease, chronic lung, hepatic or renal disease, spinal and joint disease, cystic ovarian disease, and neoplasia. In this masterclass, four of the commonest conditions seen in aging psittacine birds, i.e. cardiomyopathy and atherosclerosis, osteoarthritis, renal disease and neoplastic conditions of the reproductive system, will be discussed including their clinical presentation, diagnostics, and the preventive and therapeutic management.



A panelist team, consisting of specialists in avian medicine that work in private practice and academia will present their approach to each of these conditions from their respective backgrounds to help provide a broad and international perspective on the approach to the aforementioned conditions. This will provide practitioners with guidelines for immediate implementation in practice, as well as provide insight into some of the more advanced, novel, or future options to optimize care for the aging psittacine bird.

RESPECTING PARROT INTELLIGENCE AND COGNITIVE ABILITIES IN DAILY PRACTICE

Irene Pepperberg (*Boston University, Boston, USA*) & **Jan Hooimeijer** (*Consultancy Practice for Birds, Meppel, Netherlands*)

(21 May 2024, 08:00 – 10:00)

Pepperberg discusses “contrafreeloading”: In nature, animals expend energy foraging, competing with others to access resources while avoiding predation. Hence, most aim to forage optimally—to obtain the highest caloric intake in the shortest period of time with the least effort. In captivity, however, we observe “contrafreeloading”—the occasional choice to expend excess energy by, e.g., extracting food from a puzzle box rather than eating what is freely available. We compare contrafreeloading in several parrot species—results that apply to enrichment programs for captive birds. We tested Grey parrots, then kea and cockatoos, on varying tasks. On one task, more kea contrafreeloaded than did Greys and did so slightly more often, but kea completely ignored a second task. Cockatoos were tested on the second task only; they also exceeded the Greys but results were affected by dominant/subordinate behaviour and other individual differences. I emphasize how acknowledging parrots’ intelligence, playfulness, and choice of action can ensure their welfare.

Hooijmeijer discusses how to avoid undesired behaviour: Parrots are nondomesticated, highly intelligent prey animals that are kept in captivity under unnatural circumstances. If we do not understand their normal behaviour and underestimate their high intelligence, a wide variety of behavioural problems are apt to occur depending upon the individual parrot, species, and circumstances surrounding the bird. To understand behaviour, we have to understand and learn about the principles of ethology. Looking at the world through the eyes of parrots, we have to consider that our body language and attitude determines their body language and behaviour.

THE AVIAN NEUROLOGIC EXAM AND SEIZURE MANAGEMENT

Natalie Antinoff (*Texas Avian & Exotic Hospital, Grapevine, USA*)

(21 May 2024, 10:30 – 12:30)

Performing a neurologic examination on birds presents a unique set of challenges, and an understanding of normal is essential. This masterclass will go over normal neuroanatomy as well as provide an overview of the nuances of performing a thorough neurologic examination in birds. This session will include a discussion of current trends in seizure management and differential etiologies for seizures and neurologic disease in pet birds.



ADVANCES IN PAIN RECOGNITION, ASSESSMENT AND TREATMENT OF PAIN IN BIRDS

David Sanchez-Migallon Guzman (*UC Davis, Davis USA*)

(21 May 2024, 13:30 – 15:30)

This masterclass provides an overview of the most recent evidence-based advances in pain recognition, assessment and treatment of pain in birds.

These advances include information regarding the anatomy and physiology of pain in birds, the recognition of pain behaviours as well as their assessment in addition to information regarding newer studies on opioids, nonsteroidal anti-inflammatory drugs, local anaesthetics, and/or other drugs like gabapentin, amantadine, and cannabinoids in birds.

SMALL INTESTINAL OBSTRUCTION IN PET RABBITS: THE INCISION DECISION

Joanne Sheen (*Sydney Exotics & Rabbit Vets, Sydney, Australia*)

(21 May 2024, 16:00 – 18:00)

A compressed hair pellet (CHP) is a common aetiology of rabbit small intestinal (SI) obstruction. However, other foreign bodies as well as extraluminal conditions such as neoplasia and abdominal adhesions can also occur. Treatment of SI obstruction can be broadly classified as either medical or surgical, each with varying outcomes reported. Many rabbits respond favourably to medical management alone, however surgical intervention is recommended when there is a continual decline in clinical status or poor response following medical management. Two main surgical techniques have been described for rabbit SI obstruction. Extraluminal digital manipulation may be performed to pass a CHP aboard through the small intestine into the caecocolic complex, or the obstruction removed via enterotomy or enterectomy. Digital manipulation is thought to carry reduced risk of postoperative peritonitis or stricture formation. However, increased intestinal handling during manipulation may result in some immediate as well as delayed complications. Some rabbits experience repeated presentations of SI obstruction. The aetiology for this is unclear, but a previous history of surgical intervention for SI obstruction does not appear to impact survival.