

British Veterinary Zoological Society



Proceedings of the Spring Meeting 2013

23rd and 24th March, 2013

The Möller Centre, Cambridge

DIAGNOSTICS OF ALL ZOO, WILDLIFE AND PET EXOTIC SPECIES

Editors: Fieke Molenaar, Mark Stidworthy, Victoria Roberts

BVZS GUIDELINES FOR MEETING ABSTRACTS

PLEASE NOTE: *From the November 2007 meeting all abstracts and extended abstracts will be linked to CABI. This is an important step in helping the Society and members' work reach a wider audience. While the society encourages authors to include as much relevant data as possible, it is the author's own responsibility to restrict their data as necessary in order not to prejudice any future peer-reviewed publications they may have planned. While previous humorous biographies have been included, inline with the links with CABI, please adhere to the biography guidelines and keep these to a professional nature. At present BVZS meetings and abstracts are NOT peer-reviewed.*

Submissions should preferably be in word (.doc) format, 12 font Times New Roman, single line spacing, not justified.

Biography: This should include the author's qualifications and institution/ practice/ affiliations, as well as a summary of any particular achievements, career, highlights, or relevant current projects. Please keep the biography to a professional nature. Maximum of 100 words.

Title: Submission should include a title of not more than 15 words, and the names, qualifications and affiliation/ institution of each author.

Abstracts: Abstracts should be a minimum of 200 words, and a maximum of 750 words. A reference list may also be included. Abstracts, with references should not be longer than 1 page.

Extended Abstracts: These should be in the format: SUMMARY, INTRODUCTION, MATERIALS AND METHODS, RESULTS, DISCUSSION, REFERENCES; or if this is a case report or case series: SUMMARY, INTRODUCTION, CASE REPORT, DISCUSSION, REFERENCES. Review articles should preferably be in the format: SUMMARY, REVIEW, CONCLUSION. This may be altered depending on the reviews nature, but must include a SUMMARY and CONCLUSION. The text should be concise and should be a maximum of 2000 words, and not exceed 4 pages in length, including illustrations and references. The summary should not exceed 200 words.

Tables and illustrations: Tables should be kept to a minimum and should be created in Word. The legend should clearly explain what data the table is presenting, without the need to refer back to the text. Tables should not duplicate information presented in figures. Digital images should be GIF, TIFF, or JPEG files, at a minimum resolution of 300 dpi. Please label them to correspond with the list of numbered figure captions; for example 'Figure 3.jpg' or 'Figure 7B.jpg', etc.

Style: Measurements should be expressed in the metric system or in SI units. Temperatures should be given in °C. Centrifugation speeds should be given in g. All abbreviations should be spelt out in full the first time they are used in the text. Medicines should be referred to by the generic name (Recommended International Non-Proprietary Name), as used in the sixth edition of The Veterinary Formulary (London, Pharmaceutical Press 2005) and listed on the website of the [Medicines and Healthcare Products Regulatory Agency](#), followed by the proprietary name and manufacturer in brackets when first mentioned; eg, fenbendazole (Panacur; Intervet). Parasitic infections should be referred to according to the Standardised Nomenclature of Parasitic Diseases (SNOPAD) guidelines, which are summarised by the [World Association for the Advancement of Veterinary Parasitology](#). Spelling should be in British English. Manuscripts should be written in the third person.

References: In the text, references should be cited as follows: Smith (1995) described.../...recorded earlier (Brown and Jones 1994, Smith and others 1997). Lists of references should be given in date order in the text, but alphabetically in the reference list. In the reference list, all authors' names and initials should be given followed by the date, title of the paper, full title of the journal, volume number and full page range, eg: SMITH, A. B., JONES, C. D. & BROWN, E. F. (1995) How to list your references. *Veterinary Record* xxx, 71-76. **Book references** should include the chapter title if appropriate, the full title of the book, the edition, the editors, the town of publication, publisher and page numbers of material referred to, eg: SMITH, A. B., JONES, C. D. & BROWN, E. F. (1993) How to list your references. In *Getting It Right*. 3rd edn. Eds S. Adams, J. Alexander. London, Society of Reference Publishers. pp 23-37. **Proceedings** should include the title of the paper given at the meeting, proceedings title, the editors (if applicable), town, country, month date a to b, year, and page numbers (if applicable), eg: MILLER, W. (1976) A state-transition model of epidemic foot-and-mouth disease. *Proceedings of an International Symposium: New Techniques in Veterinary Epidemiology and Economics*. Reading, UK, July 12 to 15, 1976. p 56. **Websites** should include the title of the page, website address and date accessed, eg: DEFRA (2001) Explanation of Foot and Mouth Restrictions. www.defra.gov.uk/animalh/diseases/fmd/disease/restrictions/explanation.asp. Accessed August 24, 2001. Personal communications should be cited within the text and follow the form 'A. B. Smith, personal communication'.

British Veterinary Zoological Society

BVZS is the specialist division of the British Veterinary Association (BVA) recognised as having responsibility for exotic pets, companion avian species and zoo animals. Founded in 1961, the BVZS nowadays has an international membership and finds itself involved in almost every aspect of the care and welfare of exotic pets, zoo animals and wildlife.

The aims of the society are to promote the advancement of veterinary knowledge and skill in the maintenance of the health and welfare of non-domesticated animals and to encourage proper housing and conditions for such animals; to encourage full use of veterinary services by wild animal establishments and by the owners of exotic animals; to promote the international exchange of veterinary knowledge of non-domesticated animals.

Information to the membership is provided to members by:

- Twice-yearly scientific meetings held at different venues throughout the UK e.g. university veterinary field stations and zoological collections. *Proceedings* from each of these meetings are published with hard copy for attending delegates and a CD with all *Proceedings*, 2001-2013, for all other members
- For 5 years BVZS has held a Satellite Day at BSAVA in Birmingham. All details of this along with *Proceedings* are on the BVZS website at www.bvzs.org
- BVZS website has a password-protected members' only area, student members access this for publications
- Biannual *Zoomed the Bulletin* of the BVZS (which includes general information and peer reviewed papers)
- Contact with individual veterinary surgeons and with recognised student branches in our veterinary schools
- Specialist courses to aid in CPD
- An e-mail list open to BVZS full and associate members only.

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PROGRAMME

Time	FRIDAY		
14:00	Tour of Shepreth Wildlife Park		
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Time	SATURDAY		Page
08:00	Registration		
09:00	Welcome by the BVZS President Matt Brash		
09:15	Session 1	LARGE MAMMALS AND REPTILES (Chair: Jane Hopper) <i>Sponsored by Pinmoore Animal Laboratory Services (PALS)</i>	13
	Nic Masters	The development of scoring systems for lameness and foot lesions in elephants (20 min)	
	Peter Aylmer	Investigation and treatment of an abdominal mass in a tiger	
	Martin Whitehead	Haematology and biochemistry of Nile crocodiles (<i>Crocodylus niloticus</i>) (20 min)	
	Kathryn Perrin	Coelomic mass in a Yellow Spotted Amazon River turtle (<i>Podocnemis unifilis</i>)	
10:45	COFFEE BREAK		
11:30	Session 2	EXOTIC ANIMAL PRACTICE (Chair: Iain Cope) <i>Sponsored by Dick White Referrals</i>	19
	Maria-Elisabeth Krautwald-Junghanns	Ultrasonography in the conscious bird (30 min) <i>Invited speaker</i>	
	Sarah Brown	Chronic degenerative bilateral polycystic renal disease in a spur-thighed tortoise (<i>Testudo graeca</i>) and its management	
	Peer Zwart	The suitability of invertebrates as food animals	
	Matt Rendle	Chytridiomycosis in caecilians, diagnosis and treatment	
13:00	LUNCH		
14:00	Session 3	PRIMATE MEDICINE AND DISEASE (Chair: Mark Stidworthy) <i>Sponsored by Bayer</i>	27
	Sergio Silvetti	Fatal infection of α -herpes virus in a common marmoset (<i>Callithrix jacchus</i>)	
	Louise Allmark	Causes of mortality of non-human primates in captive collections across the British Isles	
	Ellen Holding	<i>Entamoeba histolytica</i> in a group of Eastern Black & White Colobus monkeys (<i>Colobus guereza occidentalis</i>)	
	Rosalie Dench	TB-testing in orangutans (<i>Pongo pymaeus</i>): interpreting the tuberculin skin test	
	Susan Brayshaw	Ultrasound training for pregnancy monitoring in tamarins	
14:00	Parallel Session	BACK TO BASICS	32
	Alan Humphreys	Practical digital radiography, fluoroscopy and clinical/forensic photography in practice	
15:30	TEA BREAK		
16:15	Session 4	DISCUSSION: PRIMATES AS PETS (Chair: Nic Masters)	34
	John and Margaret Cooper	Primates as pets at home and abroad; legal and practical considerations	
	Susan Brayshaw	Callitrichid behaviour - captive requirements and considerations	
	Fieke Molenaar	Results of the Primates as Pets BVZS survey	
	All delegates	BVZS Statement discussion: Should we be keeping primates as pets?	
17:30	BVZS General Meeting		
20:00	Dinner	St. Catherine's College, Cambridge	

PROGRAMME

Time	SUNDAY		Page
09:15	Session 5	SMALL MAMMALS (Chair: Peter Kettlewell)	37
	Livia Benato	Computed Tomography of the abdomen of healthy guinea pigs	
	Mark Stidworthy	Granulomatous enteritis in a pet rabbit	
	Fieke Molenaar	Mycobacteriosis in a chinchilla (<i>Chinchilla laniger</i>)	
	Craig Hunt	Contrast studies of the urinary tract in rabbits/rodents (20 min)	
	Sarah Chapman	Veterinary management of the Ground Cuscus (<i>Phalanger gymnotis</i>)	
10:45	COFFEE BREAK		
11:30	Session 6	MASTERCLASS (Chair: Michael Stanford) <i>Sponsored by Meadows Animal Health</i>	42
	Maria-Elisabeth Krautwald- Junghanns	Avian radiography <i>Invited speaker</i> (full session)	
13:00	LUNCH		
14:00	Session 7	NOVEL APPROACHES (Chair: Emma Youngs)	47
	Craig Hunt	Psychogenic polydipsia in a Senegal parrot	
	Matt Rendle	Quarantine care of Komodo Dragons (<i>Varanus komodoensis</i>)	
	Maria-Elisabeth Krautwald- Junghanns	Optical Coherence Tomography (OCT) in raptors <i>Invited speaker</i>	
	Jo Dodds	Wound management of a traumatic injury with bone exposure in a female Onager (<i>Equus hemionus</i>)	
	Mark Rowland	The use of haemostatic clips in exotic animal practice	
Both days	POSTER SESSION		52
	Alice Horne	Anaesthesia of <i>Potamochoerus porcus</i> (Red River Hog) to remove the pedal bone on the right forelimb due to a penetrating septic infection	
	Anthony Ridge	Chemical immobilisation of captive non-domestic small cat species	
	Stamos Tahas	Limitations of gastric juice cytology for evaluating gastric health in captive bottlenose dolphins (<i>Tursiops truncatus</i>)	
15:30	PRIZE GIVING AND FAREWELL		

CPD Certificates will be issued: Saturday=7 hours, Sunday=5 hours, total 12 hours

BIOGRAPHIES

Louise Allmark

Louise is a final year veterinary student at the RVC. Since securing her place there, Louise has actively focused her vision towards a career in wildlife, zoo and exotic medicine. She has travelled extensively, assisting with research into African elephant contraception while in South Africa, worked alongside the Kenyan wildlife Service, monitoring animal movements, involved in the relocation of animals and anti-poaching patrols, volunteered at an elephant sanctuary in Thailand where she experienced the conflicts between animal welfare and the livelihood of the local people and witnessed firsthand the conservation efforts on behalf of the native wildlife of British Columbia.

Peter Aylmer BVSc CertZooMed MRCVS

Peter has spent the majority of a long career in mixed practice in the Cotswolds, including the provision of veterinary services to The Cotswold Wild Life Park at Burford. He also acts for, and provides consultancy services to, several other smaller collections including Shepreth Wildlife Park. He was awarded the Certificate of Zoological Medicine in 2002 and is a Secretary of State-appointed Zoo Inspector.

Livia Benato DVM CertZooMed MRCVS

Livia worked with rabbits and exotic animals in a referral clinic in Milan (Italy) for two years before moving to the UK. She started her residency in Rabbit and Exotic Animal Medicine in 2008 at the University of Edinburgh and she gained her RCVS Certificate in Zoological Medicine in 2010. From September 2011 to August 2012 she worked at Chester Zoo as veterinary officer. In January 2013 she was awarded an MSc by Research in Probiotics in Rabbits at the University of Edinburgh. She is currently working as University Veterinary Clinician at the University of Glasgow.

Susan Brayshaw BSc (Hons)

Susan is currently a Senior Mammal Keeper at Durrell Wildlife Conservation Trust. She has worked at the organisation for the past six years after graduating from Leeds University with a degree in Zoology. Susan focuses on callitrichid management and behaviour, working with several species of tamarin and marmoset. She specializes in the care of the notoriously sensitive pied tamarin, *Saguinus bicolor*, and black lion tamarin, *Leontopithecus chrysopygus*, and is involved in the organisation and delivery of an annual Callitrichid and Lemur Husbandry course at Durrell.

Sarah Brown MA VetMB CertZooMed GPCertExAP MRCVS

Sarah qualified from Cambridge University Vet School in 2000, and spent 18 months in mixed practice in Kent before moving to Leeds in 2002 to join Holly House Veterinary Hospital. She has a particular interest in treating reptiles, especially chelonia, and small pet mammals, and gained both the RCVS certificate in Zoological Medicine and the ESVPS General Practitioner certificate in Exotic Animal Practice in 2006. She is currently preparing to study for the RCVS Zoological Medicine Diploma (Reptilian), although her hands are currently quite full on maternity leave, having recently had a baby boy.

Sarah Chapman BVM&S MSc CertZooMed MRCVS

Sarah qualified in June 2000 from the Royal (Dick) School of Veterinary Medicine and Surgery. She went into mixed practice in Lincolnshire then East Yorkshire where she also worked with exotics and wildlife. In September 2004 she began the Masters course in Wild Animal Health and completed her dissertation on the Mortality of Captive Gorillas (*Gorilla gorilla gorilla*). She worked for the Scott Veterinary Clinic in Bedford where she gained her Certificate in Zoological Medicine and was part of the veterinary team at Woburn Safari Park. She then worked at Paignton Zoo for three years as Associate Veterinarian. Sarah is currently Head of Veterinary Services for Twycross Zoo, doing 100% zoo work with a large variety of large and small exotic animals. She is the veterinary advisor for the UK Elephant Working Group and the Bongo Taxon Advisory Group. She also sits on the Nutrition sub-group of the Elephant Welfare Group. She is working towards her RCVS Diploma in Zoo Medicine (Mammalian).

BIOGRAPHIES

John Cooper DTVM FRCPath FSB CBiol Dipl ECVP FRCVS

John graduated in veterinary science at Bristol University, UK, in 1966 and has lived and worked for over 15 years overseas, in Africa, Arabia and the Caribbean, but also in Britain and Europe, primarily in the fields of comparative medicine, wildlife and veterinary care of "exotic" species. John has obtained qualifications in tropical veterinary medicine (DTVM), avian medicine and pathology (FRCVS), comparative pathology (FRCPath, Dip.ECVP) and biology (C.Biol, FSB). His professional interests are teaching, diagnostic pathology, wildlife and ecosystem health, forensic medicine, tropical diseases, zoonoses and human health. John is the author/editor of many books and papers. He returned in 2009 from serving for nearly seven years as Professor of Veterinary Pathology at the University of the West Indies, Trinidad and his current appointments include visiting positions at various academic institutions in Britain and overseas. He is married to a lawyer, Margaret Cooper and has two adult children. His interests include natural history, youth activities and overseas travel.

Margaret Cooper LLB FLS

Margaret graduated in law from Bristol University, UK, in 1965 and qualified as a Solicitor of the Supreme Court in 1969. She spent several years in Africa, with her husband, mainly in Kenya, Tanzania, Rwanda and Uganda. In the UK Margaret was a member of the Farm Animal Welfare Council (FAWC) and (1999) a member of the Zoo Standards Review team. She returned in 2009 from living, writing and serving as a Guest Lecturer in Trinidad and Tobago, West Indies. She works as a free-lance writer and consultant, lectures at various universities, particularly at post-graduate level, on legal and allied matters. Margaret is the author of two books and many papers on animal and conservation law. Margaret is married to John Cooper, has two adult children and has a particular interest in overseas travel, languages, cultures and human rights.

Rosalie Dench MA VetMB MRCVS

Rosalie has been involved in orangutan conservation in Borneo since 2003. After graduating from Cambridge in 2007, she worked in small animal practice in Lincolnshire for two years before moving to Indonesia to volunteer at an orangutan centre. She joined the Borneo Orangutan Survival Foundation in 2011 as the Veterinary Advisor at the Nyaru Menteng centre, and is continuing this role in an external capacity since returning to the UK a few months ago. Rosalie is currently conducting research on "Important Diseases of Rehabilitant Orangutans", investigating clinical aspects of key diseases encountered in this species, alongside small animal locum work.

Joanne Dodds VN

Jo qualified as a veterinary nurse in July 1990 from Rodbaston College. She worked as head nurse for 3yrs in small animal practice before taking up a veterinary nursing role in a wildlife hospital based in the UK. From there she worked on a voluntary basis in a primate rescue centre, primarily gibbons, in Thailand. Since 1997 she has been working as a veterinary nurse at ZSL Whipsnade zoo where she is currently senior veterinary nurse. She has 2 small boys who keep her busy in any spare time.

Ellen Holding BVetMed MRCVS

Ellen graduated from the RVC in 2007. She subsequently worked in mixed and exotic/zoo practice, and volunteered on wildlife projects in the UK and abroad. In 2011 she began an internship at Howletts & Port Lympne Wild Animal Parks in Kent. After a year she stayed on as a full-time clinician, and works primarily with primates, carnivores and ungulates.

Alan Humphreys BVSc MRCVS

Alan is a sole practitioner at Village Vets Centre Ltd, Liverpool, a 50% small animal / 50% exotic practice. He graduated in 1989 from Liverpool University. Alan's special interests are in fluoroscopy, digital radiography and clinical / forensic photography in general practice.

Craig Hunt BVetMed CertSAM CertZooMed MRCVS

Following graduation from the RVC in 1997, Craig worked for five years in mixed practice in East Sussex, followed by three years in small animal/exotic practice in Gloucestershire before settling at Chine House Veterinary Hospital in Leicestershire. His caseload is almost exclusively exotic companion with a roughly equal proportion of avian, reptile and mammal patients. Current interests include falconry, beekeeping, gardening and tending a modest menagerie at home.

BIOGRAPHIES

Maria-Elisabeth Krautwald-Junghanns, Prof Dr med vet, Dr med vet habil, Dipl ECZM, ML

Professor Krautwald-Junghanns has been working in avian medicine since 1984. She is a diplomate of the European College of Zoological Medicine (avian), founding member of ECAMS and founding member of EAAV. She holds various German specialization degrees for poultry, pet, zoo and wild birds and reptiles and is an EU certified specialist in avian medicine. Maria-Elisabeth is the editor and author of *Diagnostic Imaging of Exotic Pets – Birds, Small Mammals, Reptiles*, and has contributed to various other books on imaging of birds. Maria-Elisabeth is currently university professor and director of the Clinic for Birds and Reptiles at Leipzig University, where she specialises in imaging techniques in avian medicine, animal welfare and avian respiratory tract diseases. She has received numerous awards, amongst which is the Pfizer award for excellent research, and is an appointed member of the National Academy of Sciences, Leopoldina.

Nicholas Masters MA VetMB MSc MRCVS

Nic graduated from Cambridge and attained his Wild Animal Health Master of Science degree from the Institute of Zoology. He spent five years with the International Zoo Veterinary Group (IZVG), working as the resident veterinarian at Twycross Zoo and providing veterinary care for other IZVG clients. During this time Nic wrote the chapter on primates in the *BSAVA Manual of Exotic Pets*, and developed a particular interest in elephants and conservation medicine. Nic left IZVG in 2010 and worked at the Zoological Society of London (ZSL) on the Species Recovery Programme, developing disease risk analysis methodology for the translocation of endangered native UK fauna. He spent 2011 working freelance in the UK and abroad, continuing to specialise exclusively in non-domestic animals; a particular highlight were two locums at the New Zealand Centre for Conservation Medicine, Auckland Zoo. Last year Nic began working clinically for ZSL as the Veterinary Officer at Whipsnade Zoo, and has since been appointed Head of Veterinary Services. Along with these new managerial responsibilities he has also become the sub-group leader (Healthcare, Foot care and Locomotion) for the Elephant Welfare Group.

Fieke Molenaar DVM MSc GPCertExAP MRCVS

Fieke graduated from the University of Ghent, Belgium, in 2001 and started her veterinary career looking after a variety of primates at the BPRC in The Netherlands. She moved to Wales in 2002, where she has spent several years in general practice. Fieke has completed the MSc Wild Animal Health and the General Practitioners Certificate in Exotic Animal Practice. She has worked on various conservation and wildlife projects, including as Assistant Pathologist at Vic Simpson's Wildlife Veterinary Investigation Centre and several years as Veterinary Officer on the Species Recovery Programme at the Zoological Society of London. Fieke is currently half of Origin Vets, working solely with zoo animals, wildlife and unusual pets throughout South West Wales. She is a Council Member and the Meetings Organiser of the BVZS and a Council Member of the Zebra Foundation, a charity that funds veterinary students who carry out research in the field of zoological medicine.

Kathryn Perrin BVetMed MRCVS

Kathryn graduated from the Royal Veterinary College in 2009. After graduation Kathryn worked in small animal practice in the UK before spending a year at Johannesburg Zoo in South Africa. A brief stint as a buffalo vet and some more small animal practice followed before a one year Junior Clinical Training Scholarship (internship) at Bristol Zoo Gardens. Kathryn has been working as a locum in private practice since completing her internship in October 2012.

Matthew Rendle RVN

Matt started his veterinary nursing career at The Park Veterinary Centre, Watford in 1989, a busy 13 vet practice, where he was involved in nursing, anaesthetics and radiography for a wide variety of species, including domestic and farm animals, horses, birds, bats, reptiles, amphibians and fish. He was promoted to Senior Theatre Nurse in 1994 and continued in this post until leaving in 2003 to pursue his interest in zoo and wildlife nursing at the Zoological Society of London, where he is currently the Senior Clinical Nurse for ZSL London Zoo. Matt regularly lectures to veterinary nursing and veterinary surgeon undergraduates at the RVC, covering topics such as herpetological husbandry, zoo and wildlife diagnostic imaging and anaesthesia. He also lectures on herpetology both in Europe and America. Matt is a keen herpetologist, and this takes up most of his spare time.

BIOGRAPHIES

Anthony Ridge BA (Zoology)

Anthony is a final year veterinary student at Cambridge University Veterinary School. He was president of the Cambridge University Veterinary Zoological Society (CUVZS) 2011-12 and organised a national student symposium on conservation medicine in January 2012. He is currently the Cambridge University student representative for the BVZS and the AAV student chapter. He has a keen interest in exotic, wildlife and conservation medicine and is undertaking a project to evaluate protocols for chemical immobilisation of captive non-domestic cat species in UK zoological collections.

Mark Rowland BVSc CertZooMed MRCVS

Mark qualified from Liverpool University in 1996. After a period in mixed practice he concentrated on small animal and exotic medicine and surgery. In 2007 Mark achieved the Royal College Certificate in Zoological Medicine. He owns and runs Trinity Vet Centre, a small animal practice and exotic referral centre in Kent. Mark has lectured locally and internationally on exotic animal topics and has published in peer-reviewed journals.

Sergio Silveti DVM MRCVS

After graduating as a veterinary surgeon from the Faculty of Veterinary Medicine at the University of Milan in 1999, Sergio worked in several veterinary practices in Italy, Spain and the United Kingdom, dealing mainly with exotics cases. He is currently working as veterinary surgeon at the Avian and Exotic Animal Clinic in Manchester. Sergio has attended, and lectured, at several international veterinary conferences and is studying for the CertAVP in Zoo Medicine. He is currently writing a chapter on orthopaedics for the *BSAVA Manual of Poultry and Wildfowl* in cooperation with Aidan Raftery.

Mark F. Stidworthy MA VetMB PhD FRCPATH MRCVS

RCVS Recognised Specialist in Veterinary Pathology (Zoo and Wildlife)

Mark has run the pathology section of International Zoo Veterinary Group since 2003, providing dedicated full-time anatomic pathology services (post-mortem examinations and histopathology) for zoo, exotic and wildlife species including fish. Cases derive from collections and aquaria served by IZVG's clinical veterinarians and by referral from specialist practitioners and other pathology laboratories. Mark graduated from Cambridge in 1996 (taking pathology as his intercalated degree); received pathology residency training and diagnostic experience at Liverpool and Cambridge Veterinary Schools and holds a Cambridge PhD investigating remyelination in the central nervous system. He is a Fellow of the Royal College of Pathologists (Veterinary Pathology) and an RCVS Recognised Specialist in Veterinary Pathology (Zoo and Wildlife). He speaks and publishes regularly in the field of zoo, wildlife and aquarium species pathology.

Stamos Tahas DVM (Hons) MRCVS

Stamos is currently studying for an MSc in Veterinary Science - Conservation Science Pathway at the University of Liverpool. After graduating from the Aristotle University of Thessaloniki with distinction in 2011, he completed his compulsory military service in the Hellenic Army as a veterinarian with the rank of private. Before studying at Liverpool, Stamos spent two months as an intern at Barcelona Zoo and some time in private practice. During his years at university he actively volunteered at the Attica Zoological Park and the Hellenic Wildlife Hospital.

Martin Whitehead BSc PhD BVSc CertSAM MRCVS

Martin is a Director of Chipping Norton Veterinary Hospital in Oxfordshire, a first-opinion mixed practice also doing exotic-animal referral and zoo work. After a PhD for research on comparative aspects of auditory biophysics in vertebrates, Martin worked in basic and clinical research in US medical school ENT departments before switching to veterinary medicine, graduating from the Liverpool veterinary school in 1999. His particular interests are small-animal internal medicine and zoo- and exotic-animal medicine, particularly reptiles. He has published articles on the biophysics of hearing and on various veterinary topics, and is a member of the BSAVA's Scientific Advisory Committee.

BIOGRAPHIES

Peer Zwart DVM PhD Dipl ECVP Dipl ECZM

Professor Zwart graduated from the University of Utrecht, The Netherlands, in 1955. During his military service he was an Inspector for Food of Animal Origin. Peer then joined the University staff in 1956, where he split his time between the Department of Tropical and Zoonotic Diseases and the Department of Diseases of Zoo Animals and Exotic Pets. He gained his PhD in 1963 on "Studies of Renal Pathology in Reptiles", after which he joined the Department of Veterinary Pathology, working full time on diseases of zoo animals, exotic pets and wildlife. In 1980, laboratory animal pathology was included. Since 1990 Peer has been concentrating on pathology of reptiles, amphibians and invertebrates. He is a Recognised Specialist in Veterinary Pathology (Dipl. ECVP), and in Veterinary "Zoological Medicine" (Herpetology) (Dipl ECZM), and an Honorary Member of both the European Association of Zoo and Wildlife Veterinarians (EAZWV) and the BVZS (2007).